

## Futures and Forex Symbol List

| Description                      | Instrument | Exchange    | Bloomberg Root Symbol | Bloomberg Type | CQG Tradable Symbols | IB Symbol | Trade Nav Symbol |
|----------------------------------|------------|-------------|-----------------------|----------------|----------------------|-----------|------------------|
| AUD/CAD                          | Cash spot  |             | AUDCAD                | Curncy         |                      | AUD.CAD   | \$AUD-CAD        |
| AUD/CHF                          | Cash spot  |             | AUDCHF                | Curncy         |                      | AUD.CHF   | \$AUD-CHF        |
| AUD/JPY                          | Cash spot  |             | AUDJPY                | Curncy         |                      | AUD.JPY   | \$AUD-JPY        |
| AUD/NZD                          | Cash spot  |             | AUDNZD                | Curncy         |                      | AUD.NZD   | \$AUD-NZD        |
| AUD/USD                          | Cash spot  |             | AUDUSD                | Curncy         |                      | AUD.USD   | \$AUD-USD        |
| CAD/CHF                          | Cash spot  |             | CADCHF                | Curncy         |                      | CAD.CHF   | \$CAD-CHF        |
| CAD/JPY                          | Cash spot  |             | CADJPY                | Curncy         |                      | CAD.JPY   | \$CAD-JPY        |
| CHF/JPY                          | Cash spot  |             | CHFJPY                | Curncy         |                      | CHF.JPY   | \$CHF-JPY        |
| EUR/AUD                          | Cash spot  |             | EURAUD                | Curncy         |                      | EUR.AUD   | \$EUR-AUD        |
| EUR/CAD                          | Cash spot  |             | EURCAD                | Curncy         |                      | EUR.CAD   | \$EUR-CAD        |
| EUR/CHF                          | Cash spot  |             | EURCHF                | Curncy         |                      | EUR.CHF   | \$EUR-CHF        |
| EUR/GBP                          | Cash spot  |             | EURGBP                | Curncy         |                      | EUR.GBP   | \$EUR-GBP        |
| EUR/JPY                          | Cash spot  |             | EURJPY                | Curncy         |                      | EUR.JPY   | \$EUR-JPY        |
| EUR/NZD                          | Cash spot  |             | EURNZD                | Curncy         |                      | EUR.NZD   | \$EUR-NZD        |
| EUR/USD                          | Cash spot  |             | EURUSD                | Curncy         |                      | EUR.USD   | \$EUR-USD        |
| GBP/AUD                          | Cash spot  |             | GBPAUD                | Curncy         |                      | GBP.AUD   | \$GBP-AUD        |
| GBP/CAD                          | Cash spot  |             | GBPCAD                | Curncy         |                      | GBP.CAD   | \$GBP-CAD        |
| GBP/CHF                          | Cash spot  |             | GBPCHF                | Curncy         |                      | GBP.CHF   | \$GBP-CHF        |
| GBP/JPY                          | Cash spot  |             | GBPJPY                | Curncy         |                      | GBP.JPY   | \$GBP-JPY        |
| GBP/NZD                          | Cash spot  |             | GBPNZD                | Curncy         |                      | GBP.NZD   | \$GBP-NZD        |
| GBP/USD                          | Cash spot  |             | GBPUSD                | Curncy         |                      | GBP.USD   | \$GBP-USD        |
| NZD/CAD                          | Cash spot  |             | NZDCAD                | Curncy         |                      | NZD.CAD   | \$NZD-CAD        |
| NZD/CHF                          | Cash spot  |             | NZDCHF                | Curncy         |                      | NZD.CHF   | \$NZD-CHF        |
| NZD/JPY                          | Cash spot  |             | NZDJPY                | Curncy         |                      | NZD.JPY   | \$NZD-JPY        |
| NZD/USD                          | Cash spot  |             | NZDUSD                | Curncy         |                      | NZD.USD   | \$NZD-USD        |
| USD/CAD                          | Cash spot  |             | USDCAD                | Curncy         |                      | USD.CAD   | \$USD-CAD        |
| USD/CHF                          | Cash spot  |             | USDCHF                | Curncy         |                      | USD.CHF   | \$USD-CHF        |
| USD/HKD                          | Cash spot  |             | USDHKD                | Curncy         |                      | USD.HKD   | \$USD-HKD        |
| USD/JPY                          | Cash spot  |             | USDJPY                | Curncy         |                      | USD.JPY   | \$USD-JPY        |
| USD/MXN                          | Cash spot  |             | USDMXN                | Curncy         |                      | USD.MXN   | \$USD-MXN        |
| USD/SGD                          | Cash spot  |             | USDSGD                | Curncy         |                      | USD.SGD   | \$USD-SGD        |
| USD/TRY                          | Cash spot  |             | USDTRY                | Curncy         |                      | USD.TRY   | \$USD-TRY        |
| 10-Year Aus Treasury Bond        | Futures    | ASX 24      | XM                    | Comdty         | HXS                  | XT        | YC3              |
| 20 Year Australian Treasury Bond | Futures    | ASX 24      | XXW                   | Comdty         | XX                   |           |                  |
| 30-Day Interbank Cash Rate       | Futures    | ASX 24      | IB                    | Comdty         | IBCR                 |           |                  |
| 3-Year Aus Treasury Bond         | Futures    | ASX 24      | YM                    | Comdty         | HTS                  | YT        | YT3              |
| SFE SPI 200                      | Futures    | ASX 24      | XP                    | Index          | AP                   | AP        | AP               |
| 3-Year US Treasury Notes         | Futures    | CBOT/Globex | 3Y                    | Comdty         | Z3N                  |           |                  |
| Corn                             | Futures    | CBOT/Globex | C_                    | Comdty         | ZCE                  | ZC        | ZC               |
| Dow Jones \$5 Mini               | Futures    | CBOT/Globex | DM                    | Comdty         | YM                   | YM        | YM               |
| Ethanol                          | Futures    | CBOT/Globex | DL                    | Comdty         | ZEE                  |           | ZE               |
| Mini-Sized Corn                  | Futures    | CBOT/Globex | YC                    | Comdty         | XC                   | XC        | XC3              |
| Mini-Sized KC (HRW) Wheat        | Futures    | CBOT/Globex | MKC                   | Comdty         | MKC                  |           |                  |
| Mini-Sized Soybeans              | Futures    | CBOT/Globex | YK                    | Comdty         | XB                   | XK        | XS3              |
| Mini-Sized Wheat                 | Futures    | CBOT/Globex | YP                    | Comdty         | XW                   | XW        | XW3              |
| Oats                             | Futures    | CBOT/Globex | O                     | Comdty         | ZOE                  | ZO        | ZO               |
| Rough Rice                       | Futures    | CBOT/Globex | RR                    | Comdty         | ZRE                  | ZR        | ZR               |
| Soybean Meal                     | Futures    | CBOT/Globex | SM                    | Comdty         | ZME                  | ZM        | ZM               |
| Soybean Oil                      | Futures    | CBOT/Globex | BO                    | Comdty         | ZLE                  | ZL        | ZL               |
| Soybeans                         | Futures    | CBOT/Globex | S_                    | Comdty         | ZSE                  | ZS        | ZS               |
| Ultra 10-Year U.S. Treasury Note | Futures    | CBOT/Globex | UXY                   | Comdty         | TNA                  |           | TN               |
| Ultra T-Bond                     | Futures    | CBOT/Globex | WN                    | Comdty         | ULA                  | UB        | UB               |
| US 10-Year Treasury Note         | Futures    | CBOT/Globex | TY                    | Comdty         | TYA                  | ZN        | ZN               |
| US 2-Year Treasury Note          | Futures    | CBOT/Globex | TU                    | Comdty         | TUA                  | ZT        | ZT               |
| US 5-Year Treasury Note          | Futures    | CBOT/Globex | FV                    | Comdty         | FVA                  | ZF        | ZF               |
| US Treasury Bond                 | Futures    | CBOT/Globex | US                    | Comdty         | USA                  | ZB        | ZB               |
| K.C. Wheat                       | Futures    | CBOT/Globex | KW                    | Comdty         | KWE                  |           | KW               |
| Wheat                            | Futures    | CBOT/Globex | W_                    | Comdty         | ZWA                  | ZW        | ZW               |

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|--------------------------------------|------------|-----------------------|-----------------------|----------------|----------------------|-----------|---------------------------------------------------|
| 1,000 oz Silver                      | Futures    | COMEX/Globex (COMEXG) | SIO                   | Comdty         | SIL                  |           | SIL                                               |
| Aluminum                             | Futures    | COMEX/Globex (COMEXG) | ALE                   | Comdty         | ALI                  |           |                                                   |
| Copper                               | Futures    | COMEX/Globex (COMEXG) | HG                    | Comdty         | CPE                  | HG        | HG3                                               |
| E-mini Silver 1000 oz                | Futures    | COMEX/Globex (COMEXG) | YS                    | Comdty         | XSN                  | YI        | XY                                                |
| Gold                                 | Futures    | COMEX/Globex (COMEXG) | GC                    | Comdty         | GCE                  | GC        | GC3                                               |
| Lead                                 | Futures    | COMEX/Globex (COMEXG) | LEL                   | Comdty         | LDE                  | GPB       | GPB                                               |
| miNY Gold                            | Futures    | COMEX/Globex (COMEXG) | BQ                    | Comdty         | MQO                  | YG        | XK                                                |
| Silver                               | Futures    | COMEX/Globex (COMEXG) | SI                    | Comdty         | SIE                  | SI        | SI3                                               |
| Zinc                                 | Futures    | COMEX/Globex (COMEXG) | ZNC                   | Comdty         | ZNC                  |           |                                                   |
|                                      |            |                       |                       | Comdty         |                      |           |                                                   |
| 10-Year Swiss Bond                   | Futures    | Eurex                 | FB                    | Comdty         | SC                   |           |                                                   |
| ATX Index (Austrian Index)           | Futures    | Eurex                 | ATT                   | Index          | FATX                 |           | ATX                                               |
| DAX Index                            | Futures    | Eurex                 | GX                    | Index          | DD                   | FDAX      | GX                                                |
| Euribor 3-Month                      | Futures    | Eurex                 | ER                    | Comdty         | FEU                  | FEU3      | EEI                                               |
| Euro Bobl 5-Year                     | Futures    | Eurex                 | OE                    | Comdty         | DL                   | FGBM      | EBM                                               |
| Euro Bund 10-Year                    | Futures    | Eurex                 | RX                    | Comdty         | DB                   | FGBL      | EBI                                               |
| Euro Buxl 30-Year                    | Futures    | Eurex                 | UB                    | Comdty         | FGBX                 |           | GBX                                               |
| Euro Schatz 2-Year                   | Futures    | Eurex                 | DU                    | Comdty         | DG                   | FGBS      | EBS                                               |
| EURO STOXX                           | Futures    | Eurex                 | SXI                   | Index          | FXXE                 |           | XXE                                               |
| EURO STOXX 50                        | Futures    | Eurex                 | VG                    | Index          | DSX                  |           |                                                   |
| EURO STOXX 50                        | Futures    | Eurex                 | VH                    | Index          | FEXD                 | FESX      | EX                                                |
| EURO STOXX Banks                     | Futures    | Eurex                 | CA                    | Index          |                      |           |                                                   |
| Mini-DAX                             | Futures    | Eurex                 | DFW                   | Index          | FDXM                 | FDXM      | GXM                                               |
| MSCI AC Asia Pacific ex Japan        | Futures    | Eurex                 | ZAP                   | Index          | FMAS                 |           | MAS                                               |
| MSCI ACWI                            | Futures    | Eurex                 | ZTE                   | Index          | FMAC                 |           |                                                   |
| MSCI Europe                          | Futures    | Eurex                 | ZRP                   | Index          | FMEU                 |           | MEU                                               |
| MSCI Hong Kong                       | Futures    | Eurex                 | ZSS                   | Index          | FMHK                 |           |                                                   |
| MSCI Indonesia                       | Futures    | Eurex                 | ZSR                   | Index          | FMID                 |           |                                                   |
| MSCI Japan                           | Futures    | Eurex                 | FMI                   | Index          | FMJP                 |           |                                                   |
| MSCI New Zealand                     | Futures    | Eurex                 | ZTI                   | Index          | FMNZ                 |           |                                                   |
| MSCI Pacific ex Japan                | Futures    | Eurex                 | ZSI                   | Index          | FMPX                 |           |                                                   |
| MSCI Russia Index                    | Futures    | Eurex                 | ZWB                   | Index          | FMRU                 |           |                                                   |
| MSCI UAE                             | Futures    | Eurex                 | ZRT                   | Index          | FMUA                 |           |                                                   |
|                                      |            |                       |                       |                |                      |           | MUK (Extremely little activity so never finished) |
| MSCI UK                              | Futures    | Eurex                 | QBS                   | Index          | FMUK                 |           |                                                   |
| MSCI USA                             | Futures    | Eurex                 | ZSO                   | Index          | FMUS                 |           |                                                   |
| MSCI World                           | Futures    | Eurex                 | ZWP                   | Index          | FMWO                 |           | MWO                                               |
| OMXH25 (Helsinki)                    | Futures    | Eurex                 | OT                    | Index          | FOX                  |           |                                                   |
| SENSEX                               | Futures    | Eurex                 | SNS                   | Index          | FSEN                 |           |                                                   |
| STOXX 50                             | Futures    | Eurex                 | VH                    | Index          | DTX                  | FSTX      | STX                                               |
| STOXX Europe Large 200               | Futures    | Eurex                 | SXP                   | Index          | FLCP                 |           |                                                   |
| STOXX Europe Mid 200                 | Futures    | Eurex                 | SXR                   | Index          | FMCP                 |           | MCP                                               |
| STOXX Europe Small 200               | Futures    | Eurex                 | SXT                   | Index          | FSCP                 |           | SCP                                               |
| Swiss Market Index                   | Futures    | Eurex                 | SM1                   | Index          | SW                   | FSMI      | SMI                                               |
| TA-25 Index                          | Futures    | Eurex                 | TUA                   | Index          | FT25                 |           |                                                   |
|                                      |            |                       |                       |                |                      |           |                                                   |
| Australian Dollar                    | Futures    | Globex                | AD                    | Curncy         | DA6                  | 6A        | G6A                                               |
| Australian Dollar/Canadian Dollar    | Futures    | Globex                | AC                    | Curncy         | ACD                  |           | ACD                                               |
| Australian Dollar/Japanese Yen       | Futures    | Globex                | AJ                    | Curncy         | AJY                  |           | AJY                                               |
| Australian Dollar/New Zealand Dollar | Futures    | Globex                | AN                    | Curncy         | ANE                  |           | ANE                                               |
| Bloomberg Commodity Index            | Futures    | Globex                | DN                    | Index          | ER                   |           | AW                                                |
| Brazilian Real                       | Futures    | Globex                | BR                    | Curncy         | BR6                  |           | BR                                                |

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|---------------------------------------|----------------|------------------------------------------|------------------------------------------------------|----------------|----------------------|------------|------------------|
| <b>British Pound</b>                  | <b>Futures</b> | <b>Globex</b>                            | <b>BP1</b>                                           | <b>Curncy</b>  | <b>BP6</b>           | <b>6B</b>  | <b>G6B</b>       |
| <b>Canadian Dollar</b>                | <b>Futures</b> | <b>Globex</b>                            | <b>CD</b>                                            | <b>Curncy</b>  | <b>CA6</b>           | <b>6C</b>  | <b>G6C</b>       |
| Cash-Settled Butter                   | Futures        | Globex                                   | V6                                                   | Comdty         | CCB                  |            | CCB              |
| Cheese                                | Futures        | Globex                                   | CHE                                                  | Comdty         | CSC                  |            |                  |
| E-mini EuroFX                         | Futures        | Globex                                   | EE                                                   | Curncy         | EEU                  | M6E        | M6E              |
| E-mini Japanese Yen                   | Futures        | Globex                                   | MJY                                                  | Curncy         | EJY                  | M6J        | M6J              |
| <b>E-mini NASDAQ 100 Index</b>        | <b>Futures</b> | <b>Globex</b>                            | <b>NQ</b>                                            | <b>Index</b>   | <b>ENQ</b>           | <b>NQ</b>  | <b>NQ</b>        |
| E-mini Russell 1000 Growth Index      | Futures        | Globex                                   | RGY                                                  | Index          | RS GG                |            |                  |
| <b>E-mini Russell 1000 Index</b>      | <b>Futures</b> | <b>Globex</b>                            | <b>RSY</b>                                           | <b>Index</b>   | <b>R1S</b>           |            |                  |
| E-mini Russell 1000 Value Index       | Futures        | Globex                                   | RVY                                                  | Index          | RSV                  |            |                  |
| <b>E-mini S&amp;P 500 Index</b>       | <b>Futures</b> | <b>Globex</b>                            | <b>ES</b>                                            | <b>Index</b>   | <b>EP</b>            | <b>ES</b>  | <b>ES</b>        |
| E-mini S&P MidCap 400                 | Futures        | Globex                                   | FA                                                   | Index          | EMD                  | EMD        | EMD              |
| E-mini S&P SmallCap 600               | Futures        | Globex                                   | GN                                                   | Index          | SMC                  |            |                  |
| E-mini Technology Select Sector Index | Futures        | Globex                                   | IXT                                                  | Index          | XAK                  |            |                  |
| E-mini USD-Denominated FTSE 100 Index | Futures        | Globex                                   | FFI                                                  | Index          | FTU                  |            |                  |
| E-mini Utilities Select Sector Index  | Futures        | Globex                                   | IXS                                                  | Index          | XAU                  |            |                  |
| Euribor                               | Futures        | Globex                                   | IEB                                                  | Comdty         | GEB                  |            |                  |
| <b>Eurodollar 3-Month LIBOR</b>       | <b>Futures</b> | <b>Globex</b>                            |                                                      | <b>Comdty</b>  | <b>EDA</b>           | <b>GE</b>  | <b>GE</b>        |
| Eurodollar Front Month                | Futures        | Globex                                   | ED                                                   | Comdty         | ED4                  |            |                  |
| Eurodollar Mid-Curve 5-Year           | Futures        | Globex                                   | 5EA                                                  | Comdty         | GE5                  |            |                  |
| <b>EuroFX</b>                         | <b>Futures</b> | <b>Globex</b>                            | <b>EC</b>                                            | <b>Curncy</b>  | <b>EU6</b>           | <b>6E</b>  | <b>G6E</b>       |
| Euroyen TIBOR                         | Futures        | Globex                                   | EY                                                   | Comdty         | EYA                  |            |                  |
| Feeder Cattle                         | Futures        | Globex                                   | FC                                                   | Comdty         | GF                   | GF         | GF               |
| <b>Japanese Yen</b>                   | <b>Futures</b> | <b>Globex</b>                            | <b>JY</b>                                            | <b>Curncy</b>  | <b>JY6</b>           | <b>6J</b>  | <b>G6J</b>       |
| <b>Lean Hogs</b>                      | <b>Futures</b> | <b>Globex</b>                            | <b>LH</b>                                            | <b>Comdty</b>  | <b>HE</b>            | <b>HE</b>  | <b>HE</b>        |
| LIBOR One Month                       | Futures        | Globex                                   | EM                                                   | Comdty         | GLB                  |            | WV               |
| <b>Live Cattle</b>                    | <b>Futures</b> | <b>Globex</b>                            | <b>LC</b>                                            | <b>Comdty</b>  | <b>GLE</b>           | <b>LE</b>  | <b>LE</b>        |
| <b>Lumber</b>                         | <b>Futures</b> | <b>Globex</b>                            | <b>LB</b>                                            | <b>Comdty</b>  | <b>LBS</b>           | <b>LBS</b> | <b>LB3</b>       |
| <b>Mexican Peso</b>                   | <b>Futures</b> | <b>Globex</b>                            | <b>PE</b>                                            | <b>Curncy</b>  | <b>MX6</b>           | <b>6M</b>  | <b>G6M</b>       |
| Milk Class 3                          | Futures        | Globex                                   | DA                                                   | Comdty         | GDC                  |            | GDC              |
| <b>New Zealand Dollar</b>             | <b>Futures</b> | <b>Globex</b>                            | <b>NV</b>                                            | <b>Curncy</b>  | <b>NE6</b>           | <b>6N</b>  | <b>G6N</b>       |
| <b>NIKKEI 225</b>                     | <b>Futures</b> | <b>Globex</b>                            | <b>NX</b>                                            | <b>Index</b>   | <b>NKD</b>           | <b>NKD</b> | <b>NK3</b>       |
| Norwegian Krona                       | Futures        | Globex                                   | NO                                                   | Curncy         | NK6                  |            | NOK              |
| S&P 500 Index                         | Futures        | Globex                                   | SP                                                   | Curncy         | SPA                  | SP         | SP3              |
| South African Rand                    | Futures        | Globex                                   | RA                                                   | Curncy         | SA6                  |            | G6Z              |
| Swedish Krona                         | Futures        | Globex                                   | SE                                                   | Curncy         | SK6                  |            | SEK              |
| <b>Swiss Franc</b>                    | <b>Futures</b> | <b>Globex</b>                            | <b>SF</b>                                            | <b>Curncy</b>  | <b>SF6</b>           | <b>6S</b>  | <b>G6S</b>       |
|                                       |                |                                          |                                                      |                |                      |            |                  |
| CES China 120 Index                   | Futures        | Hong Kong Futures Exchange (HKFE)        | CES                                                  | Index          | CHH                  |            |                  |
| CSOP FTSE China A50 ETF               | Futures        | Hong Kong Futures Exchange (HKFE)        | 2822=A HK equity(active) or 2822=1 HK equity (Cont.) |                | CSA                  |            |                  |
| <b>Hang Seng Index</b>                | <b>Futures</b> | <b>Hong Kong Futures Exchange (HKFE)</b> | <b>HI</b>                                            | <b>Index</b>   | <b>HSIPPP</b>        |            | <b>HS</b>        |
| Mini-Hang Seng Index                  | Futures        | Hong Kong Futures Exchange (HKFE)        | HU                                                   | Index          | MHI                  |            |                  |
| Sensex Index                          | Futures        | Hong Kong Futures Exchange (HKFE)        | SET                                                  | Index          | HKS                  |            |                  |
|                                       |                |                                          |                                                      |                |                      |            |                  |
| Barley                                | Futures        | ICE Futures Canada                       | WBA                                                  | Comdty         | BBW                  |            |                  |
| <b>Canola</b>                         | <b>Futures</b> | <b>ICE Futures Canada</b>                | <b>RS</b>                                            | <b>Comdty</b>  | <b>WR</b>            |            | <b>RS</b>        |
|                                       |                |                                          |                                                      |                |                      |            |                  |
| 10-Year Euro Swapnote                 | Futures        | ICE Futures Europe                       | P_A                                                  | Comdty         | QLA                  |            | QLA              |
| 10-Year Sterling Swapnote             | Futures        | ICE Futures Europe                       | PDD                                                  | Comdty         | LGBP                 |            |                  |
| 2-Year Euro Swapnote                  | Futures        | ICE Futures Europe                       | RW                                                   | Comdty         | TWS                  |            | TWS              |
| 2-Year Sterling Swapnote              | Futures        | ICE Futures Europe                       | PMD                                                  | Comdty         | GBW                  |            |                  |
| 30-Year Euro Swapnote                 | Futures        | ICE Futures Europe                       | TXR                                                  | Comdty         | E3U                  |            |                  |

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| 30-Year Sterling Swapnote              | Futures        | ICE Futures Europe                     | PPD                    | Comdty         | GB3                  |           |                  |
| 30-Year Sterling Swapnote              | Futures        | ICE Futures Europe                     | PDC                    | Comdty         | GB3                  |           |                  |
| 30-Year US Dollar Swapnote             | Futures        | ICE Futures Europe                     | UII                    | Comdty         | US3                  |           |                  |
| 3-Month EONIA Swap Index               | Futures        | ICE Futures Europe                     | TMO                    | Comdty         | EO3                  |           |                  |
| 5-Year Euro Swapnote                   | Futures        | ICE Futures Europe                     | T_A                    | Comdty         | QBA                  |           | QBA              |
| 5-Year Sterling Swapnote               | Futures        | ICE Futures Europe                     | None                   |                | GBO                  |           |                  |
| Brent Crude Oil                        | Futures        | ICE Futures Europe                     | CO                     | Comdty         | QO                   | COIL      | IC               |
| Euribor 3-Month                        | Futures        | ICE Futures Europe                     | ER                     | Comdty         | QEA                  |           | FEI              |
| <b>Euroswiss 3- Month</b>              | <b>Futures</b> | <b>ICE Futures Europe</b>              | <b>ES</b>              | <b>Comdty</b>  | <b>QNA</b>           |           | <b>LU</b>        |
| FTSE 100 Index                         | Futures        | ICE Futures Europe                     | Z_A                    | Index          | QFA                  |           |                  |
| Gasoil                                 | Futures        | ICE Futures Europe                     | QS                     | Comdty         | QP                   | GOIL      | IP               |
| Long Bund                              | Futures        | ICE Futures Europe                     | RX                     | Comdty         | L10G                 |           |                  |
| Long Gilt                              | Futures        | ICE Futures Europe                     | G_A                    | Comdty         | QGA                  | R         | LL               |
| MSCI Euro Index                        | Futures        | ICE Futures Europe                     | MUE                    | Index          | MCU                  |           |                  |
| MSCI Europe Index                      | Futures        | ICE Futures Europe                     | MCE                    | Index          | LMPE                 |           |                  |
| Short Bund (Schatz)                    | Futures        | ICE Futures Europe                     | TRT                    | Comdty         | L02G                 |           |                  |
| Short Gilt                             | Futures        | ICE Futures Europe                     | WB                     | Comdty         | LGS                  |           | LGS              |
| <b>Short Sterling 3-Month</b>          | <b>Futures</b> | <b>ICE Futures Europe</b>              | <b>L_</b>              | <b>Comdty</b>  | <b>QSA</b>           | <b>L</b>  | <b>SR</b>        |
|                                        |                |                                        |                        |                |                      |           |                  |
| 100 oz Gold                            | Futures        | ICE Futures U.S.                       | ZP                     | Comdty         | ZO                   | ZG        | ZG               |
| 5000 oz Silver                         | Futures        | ICE Futures U.S.                       | ZI                     | Comdty         | ZI                   | ZI        | ZI               |
| <b>Cocoa</b>                           | <b>Futures</b> | <b>ICE Futures U.S.</b>                | <b>CC</b>              | <b>Comdty</b>  | <b>CCE</b>           | <b>CC</b> | <b>CC</b>        |
| Coffee                                 | Futures        | ICE Futures U.S.                       | KC                     | Comdty         | KCE                  | KC        | KC               |
| Continuous Commodity Index             | Futures        | ICE Futures U.S.                       | Delisted as of 9/25/12 |                | CIE                  |           |                  |
| <b>Cotton</b>                          | <b>Futures</b> | <b>ICE Futures U.S.</b>                | <b>CT</b>              | <b>Comdty</b>  | <b>CTE</b>           | <b>CT</b> | <b>CT</b>        |
| <b>Dollar Index</b>                    | <b>Futures</b> | <b>ICE Futures U.S.</b>                | <b>DX</b>              | <b>Curncy</b>  | <b>DXE</b>           | <b>DX</b> | <b>DX</b>        |
| Mini Gold                              | Futures        | ICE Futures U.S.                       | XG                     | Comdty         | YG                   | YG        | XK               |
| Mini Silver                            | Futures        | ICE Futures U.S.                       | SN                     | Comdty         | YI                   | YI        | XY               |
| Mini-Russell 1000                      | Futures        | ICE Futures U.S.                       | RM                     | Index          | RFE                  | RYO       | RL               |
| MSCI Canada Index                      | Futures        | ICE Futures U.S.                       | MCL                    | Index          | MCL                  |           |                  |
| MSCI World Index                       | Futures        | ICE Futures U.S.                       | MWL                    | Index          | MWL                  |           |                  |
| Orange Juice                           | Futures        | ICE Futures U.S.                       | JO                     | Comdty         | OJE                  | OJ        | JO               |
| Russell 1000 Value                     | Futures        | ICE Futures U.S.                       | RVB                    | Index          | RVE                  |           |                  |
| Russell 2000 Growth Index              | Futures        | ICE Futures U.S.                       | RWA                    | Index          | G2E                  |           |                  |
| <b>Russell 2000 Index Mini (\$100)</b> | <b>Futures</b> | <b>ICE Futures U.S.</b>                | <b>RTA</b>             | <b>Index</b>   | <b>TFE</b>           | <b>TF</b> | <b>TF</b>        |
| Russell 2000 Value Index               | Futures        | ICE Futures U.S.                       | RXA                    | Index          | V2E                  |           |                  |
| <b>Sugar #11</b>                       | <b>Futures</b> | <b>ICE Futures U.S.</b>                | <b>SB</b>              | <b>Comdty</b>  | <b>SBE</b>           | <b>SB</b> | <b>SB</b>        |
| World Cotton                           | Futures        | ICE Futures U.S.                       | CT                     | Comdty         | WCT                  |           |                  |
|                                        |                |                                        |                        |                |                      |           |                  |
| FTSE MIB                               | Futures        | Italian Derivatives Market (IDEM)      | ST                     | Index          | ISP                  |           | IFS              |
| Mini FTSE MIB                          | Futures        | Italian Derivatives Market (IDEM)      | SW                     | Index          | IMSP                 |           | IFM              |
|                                        |                |                                        |                        |                |                      |           |                  |
| KOSPI 200 Index                        | Futures        | Korea Exchange (KRX)                   | KM                     | Index          | KOS                  |           | KOS              |
|                                        |                |                                        |                        |                |                      |           |                  |
| <b>Cocoa</b>                           | <b>Futures</b> | <b>Liffe Commodities Amsterdam</b>     | <b>QC</b>              | <b>Comdty</b>  | <b>QC</b>            | <b>C</b>  | <b>LCC</b>       |
| <b>Robusta Coffee (No. 409)</b>        | <b>Futures</b> | <b>Liffe Commodities Amsterdam</b>     | <b>DF</b>              | <b>Comdty</b>  | <b>LRC</b>           | <b>D</b>  | <b>LCF</b>       |
| Wheat                                  | Futures        | Liffe Commodities Amsterdam            | CA                     | Comdty         | VW                   | T         | LWH              |
| <b>White Sugar</b>                     | <b>Futures</b> | <b>Liffe Commodities Amsterdam</b>     | <b>QW</b>              | <b>Comdty</b>  | <b>QW</b>            | <b>W</b>  | <b>LSU</b>       |
|                                        |                |                                        |                        |                |                      |           |                  |
| AEX Index                              | Futures        | Liffe Equities & Index Deriv Amsterdam | EO                     | Index          | FTI                  |           | AEX              |
| AEX Index Mini                         | Futures        | Liffe Equities & Index Deriv Amsterdam | MFO                    | Index          | MFA                  |           |                  |
| AMX Index                              | Futures        | Liffe Equities & Index Deriv Amsterdam | FMA                    | Index          | AMX                  |           |                  |

| Description                            | Instrument     | Exchange                                      | Bloomberg Root Symbol                | Bloomberg Type | CQG Tradable Symbols | IB Symbol | Trade Nav Symbol |
|----------------------------------------|----------------|-----------------------------------------------|--------------------------------------|----------------|----------------------|-----------|------------------|
| CAC-40 Index Mini                      | Futures        | Liffe Equities & Index Deriv Amsterdam        | CMS                                  | Index          | MFC                  |           |                  |
|                                        |                |                                               |                                      |                |                      |           |                  |
| BEL20 Index                            | Futures        | Liffe Equities & Index Deriv Brussels         | BE                                   | Index          | BT                   |           |                  |
|                                        |                |                                               |                                      |                |                      |           |                  |
| <b>CAC 40 Index</b>                    | <b>Futures</b> | <b>Liffe Equities &amp; Index Deriv Paris</b> | <b>CF</b>                            | <b>Index</b>   | <b>PIL</b>           |           | <b>FCE</b>       |
|                                        |                |                                               |                                      |                |                      |           |                  |
| Aluminium Alloy Swap                   | Futures        | London Metal Exchange (LME)                   | TOA                                  | Comdty         | OLD                  |           |                  |
| Aluminium East-Asia Premium            | Futures        | London Metal Exchange (LME)                   | JBT                                  | Comdty         | SAE                  |           |                  |
| Aluminium South-East Asia Premium      | Futures        | London Metal Exchange (LME)                   | JBW                                  | Comdty         | SAS                  |           |                  |
| Aluminium Swap                         | Futures        | London Metal Exchange (LME)                   | Bloomberg does not have a symbol for |                | OAD                  |           | LA3              |
| Aluminium US Premium                   | Futures        | London Metal Exchange (LME)                   | JBL                                  | Comdty         | SAN                  |           | LM3              |
| Aluminium West-Europe Premium          | Futures        | London Metal Exchange (LME)                   | JBS                                  | Comdty         | SAW                  |           |                  |
| Steel Rebar                            | Futures        | London Metal Exchange (LME)                   | JBP                                  | Comdty         | SSR                  |           |                  |
| Steel Scrap                            | Futures        | London Metal Exchange (LME)                   | JBO                                  | Comdty         | SSC                  |           |                  |
| Tin Swap                               | Futures        | London Metal Exchange (LME)                   | Bloomberg does not have a symbol for |                | OSD                  |           | LS3              |
| Zinc Swap                              | Futures        | London Metal Exchange (LME)                   | Bloomberg does not have a symbol for |                | OZD                  |           | LZ3              |
|                                        |                |                                               |                                      |                |                      |           |                  |
| <b>FTSE 100 Index</b>                  | <b>Futures</b> | <b>LSE Derivatives Market</b>                 | <b>FQT</b>                           | <b>Comdty</b>  | <b>F100</b>          | <b>Z</b>  | <b>ZX</b>        |
|                                        |                |                                               |                                      |                |                      |           |                  |
| <b>Hard Red Spring Wheat</b>           | <b>Futures</b> | <b>Minneapolis Grain Exchange (MGEX)</b>      | <b>KW</b>                            | <b>Comdty</b>  | <b>MWE</b>           |           | <b>MWE</b>       |
|                                        |                |                                               |                                      |                |                      |           |                  |
| 3-Month Bankers Acceptance All Session | Futures        | Montreal Exchange (BdM)                       | BA                                   | Comdty         | BXA                  |           | AX               |
| Canadian 10-Year Bond                  | Futures        | Montreal Exchange (BdM)                       | CN                                   | Comdty         | CB                   |           | CG               |
| Canadian 5-Year Bond                   | Futures        | Montreal Exchange (BdM)                       | XQ                                   | Comdty         | CGF                  |           |                  |
| Canadian Bond 30-Year                  | Futures        | Montreal Exchange (BdM)                       | LGB                                  | Comdty         | LGB                  |           |                  |
| S&P/TSX 60 Mini Index                  | Futures        | Montreal Exchange (BdM)                       | MPT                                  | Index          | SXM                  |           |                  |
| SP/TSE 60                              | Futures        | Montreal Exchange (BdM)                       | PT                                   | Index          | TP                   |           |                  |
|                                        |                |                                               |                                      |                |                      |           |                  |
| Brent Crude                            | Futures        | NASDAQ OMX Futures Exchange                   | YNW                                  | Comdty         | BFQ                  |           |                  |
| Gasoil                                 | Futures        | NASDAQ OMX Futures Exchange                   | QFB                                  | Comdty         | GOQ                  |           |                  |
| Heating Oil                            | Futures        | NASDAQ OMX Futures Exchange                   | CQT                                  | Comdty         | HOQ                  |           |                  |
| Heating Oil Penultimate Financial      | Futures        | NASDAQ OMX Futures Exchange                   | OQC                                  | Comdty         | NOQ                  |           |                  |
| Heating Oil TAS                        | Futures        | NASDAQ OMX Futures Exchange                   | ZL                                   | Comdty         | HOQT                 |           |                  |
| Henry Hub Natural Gas 10,000           | Futures        | NASDAQ OMX Futures Exchange                   | HQT                                  | Comdty         | HHQ                  |           |                  |

| Description                        | Instrument     | Exchange                               | Bloomberg Root Symbol                | Bloomberg Type | CQG Tradable Symbols | IB Symbol | Trade Nav Symbol |
|------------------------------------|----------------|----------------------------------------|--------------------------------------|----------------|----------------------|-----------|------------------|
| Henry Hub Natural Gas 2,500        | Futures        | NASDAQ OMX Futures Exchange            | MMY                                  | Comdty         | NNQ                  |           |                  |
| RBOB Gasoline                      | Futures        | NASDAQ OMX Futures Exchange            | RQS                                  | Comdty         | RBQ                  |           |                  |
| WTI Crude Oil                      | Futures        | NASDAQ OMX Futures Exchange            | TQB                                  | Comdty         | CLQ                  |           |                  |
| Canadian Light Sweet Oil Index     | Futures        | NYMEX/Globex (NYMEXG)                  | CIL                                  | Comdty         | CIL                  |           |                  |
| Capesize Timecharter Avg (Baltic)  | Futures        | NYMEX/Globex (NYMEXG)                  | CTA                                  | Comdty         | NCFI                 |           |                  |
| Cocoa                              | Futures        | NYMEX/Globex (NYMEXG)                  | FCO                                  | Comdty         | CJ                   |           |                  |
| Coffee                             | Futures        | NYMEX/Globex (NYMEXG)                  | FCC                                  | Comdty         | KT                   |           |                  |
| Cotton                             | Futures        | NYMEX/Globex (NYMEXG)                  | FCT                                  | Comdty         | NTT                  |           |                  |
| <b>Crude Oil</b>                   | <b>Futures</b> | <b>NYMEX/Globex (NYMEXG)</b>           | <b>CL</b>                            | <b>Comdty</b>  | <b>CLE</b>           | <b>CL</b> | <b>CL3</b>       |
| <b>E-mini Crude Light</b>          | <b>Futures</b> | <b>NYMEX/Globex (NYMEXG)</b>           | <b>EC</b>                            | <b>Comdty</b>  | <b>NQM</b>           | <b>QM</b> | <b>QM</b>        |
| <b>E-mini Natural Gas</b>          | <b>Futures</b> | <b>NYMEX/Globex (NYMEXG)</b>           | <b>EO</b>                            | <b>Comdty</b>  | <b>NQG</b>           | <b>QG</b> | <b>QG</b>        |
| E-mini NY Harbor ULSD              | Futures        | NYMEX/Globex (NYMEXG)                  | HO                                   | Comdty         | NQH                  | QH        | QH               |
| E-mini Platinum                    | Futures        | NYMEX/Globex (NYMEXG)                  | MJA                                  | Comdty         | NPQ                  |           |                  |
| E-mini Unleaded Gasoline           | Futures        | NYMEX/Globex (NYMEXG)                  | QU                                   | Comdty         | NQU                  | QU        | QU               |
| Handysize Timecharter AVG (Baltic) | Futures        | NYMEX/Globex (NYMEXG)                  | HFT                                  | Comdty         | HFT                  |           |                  |
| <b>Natural Gas</b>                 | <b>Futures</b> | <b>NYMEX/Globex (NYMEXG)</b>           | <b>NG</b>                            | <b>Comdty</b>  | <b>NGE</b>           | <b>NG</b> | <b>NG3</b>       |
| <b>NY Harbor RBOB Gasoline</b>     | <b>Futures</b> | <b>NYMEX/Globex (NYMEXG)</b>           | <b>XB</b>                            | <b>Comdty</b>  | <b>RBE</b>           | <b>RB</b> | <b>RB3</b>       |
| NY Harbor ULSD Brent Crack Spread  | Futures        | NYMEX/Globex (NYMEXG)                  | Bloomberg does not have a symbol for |                | HOB                  |           |                  |
| NY Harbor ULSD Calendar Swap       | Futures        | NYMEX/Globex (NYMEXG)                  | ULB                                  | Comdty         | MPX                  |           |                  |
| NY Harbor ULSD Crack Spread        | Futures        | NYMEX/Globex (NYMEXG)                  | VP                                   | Comdty         | AHL                  |           |                  |
| <b>Palladium</b>                   | <b>Futures</b> | <b>NYMEX/Globex (NYMEXG)</b>           | <b>PA</b>                            | <b>Comdty</b>  | <b>PAE</b>           | <b>PA</b> | <b>PA3</b>       |
| Panamax Timecharter Avg (Baltic)   | Futures        | NYMEX/Globex (NYMEXG)                  | PTS                                  | Comdty         | NPFI                 |           |                  |
| <b>Platinum</b>                    | <b>Futures</b> | <b>NYMEX/Globex (NYMEXG)</b>           | <b>PL</b>                            | <b>Comdty</b>  | <b>PLE</b>           | <b>PL</b> | <b>PL3</b>       |
| RBOB Gasoline Brent Crack Spread   | Futures        | NYMEX/Globex (NYMEXG)                  | OOP                                  | Comdty         | RBB                  |           |                  |
| RBOB Gasoline Calendar Swap        | Futures        | NYMEX/Globex (NYMEXG)                  | UN                                   | Comdty         | NLX                  |           |                  |
| RBOB Gasoline Crack Spread         | Futures        | NYMEX/Globex (NYMEXG)                  | UQ                                   | Comdty         | NRE                  |           |                  |
| Sugar 11                           | Futures        | NYMEX/Globex (NYMEXG)                  | FSB                                  | Comdty         | YO                   |           |                  |
| Uranium                            | Futures        | NYMEX/Globex (NYMEXG)                  | UXA                                  | Comdty         | NUX                  |           |                  |
|                                    |                |                                        |                                      |                |                      |           |                  |
| <b>CNX Nifty</b>                   | <b>Futures</b> | <b>Osaka Securities Exchange (OSE)</b> | <b>ONY</b>                           | <b>Index</b>   | <b>NIFT</b>          |           |                  |
| JPX-Nikkei Index 400               | Futures        | Osaka Securities Exchange (OSE)        | JPW                                  | Index          | J400                 |           | JN4              |
| <b>Mini Nikkei 225</b>             | <b>Futures</b> | <b>Osaka Securities Exchange (OSE)</b> | <b>NO</b>                            | <b>Index</b>   | <b>MJNK</b>          |           | <b>JNE</b>       |

[illegible]

| Description                                                                                                | Instrument | Exchange | Bloomberg<br>Root<br>Symbol | Bloomberg<br>Type | CQG<br>Tradable<br>Symbols | IB Symbol | Trade Nav<br>Symbol |
|------------------------------------------------------------------------------------------------------------|------------|----------|-----------------------------|-------------------|----------------------------|-----------|---------------------|
| <b>Factor notes:</b>                                                                                       |            |          |                             |                   |                            |           |                     |
| List updated October 2017                                                                                  |            |          |                             |                   |                            |           |                     |
| This is a complete list of all the markets Factor might look at                                            |            |          |                             |                   |                            |           |                     |
| <b>Bold</b> are markets typically traded by Factor if the setup is right, but not limited to these markets |            |          |                             |                   |                            |           |                     |