

The following list of symbols specifies which firms are registered to supply liquidity for each symbol in 2019-06-25:

#### ➤ 1COVd - Covestro AG

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Jump Trading Europe B.V. (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ 2HRAd - H&R GmbH & Co KGaA

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ 2INVEe - Lyxor IBEX 35 Doble Inverso Diario UCITS ETF

Optiver V.O.F. (Program Three)

#### ➤ 3BALm - Boost EURO STOXX Banks 3x Leverage Daily ETP

Hudson River Trading Europe Limited (Program Two)

#### ➤ 3ITLm - Boost FTSE MIB 3x Leverage Daily ETP

Hudson River Trading Europe Limited (Program Two)

#### ➤ 3ITSm - Boost FTSE MIB 3x Short Daily ETP

Hudson River Trading Europe Limited (Program Two)

#### ➤ 3NGLm - Boost Natural Gas 3x Leverage Daily ETP

Hudson River Trading Europe Limited (Program Two)

#### ➤ 3NGSm - Boost Natural Gas 3x Short Daily ETP

Hudson River Trading Europe Limited (Program Three)

#### ➤ 3OILm - Boost WTI Oil 3x Leverage Daily ETP

Hudson River Trading Europe Limited (Program Two)

#### ➤ 3OISm - Boost WTI Oil 3x Short Daily ETP

Hudson River Trading Europe Limited (Program Two)

#### ➤ 888l - 888 Holdings PLC

Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

### ➤ A1OSd - All for One Group AG

Citadel Securities GCS (Ireland) Limited (Program Three)

### ➤ A2Am - A2A SpA

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Squarepoint Master Fund Ltd (Program One)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

### ➤ A3Me - Atresmedia Corp de Medios de Comunicacion SA

Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

### ➤ A5Gi - AIB Group PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)

### ➤ AADd - Amadeus Fire AG

Citadel Securities GCS (Ireland) Limited (Program Three)

### ➤ AAGd - Aumann AG

Hudson River Trading Europe Limited (Program Three)

### ➤ AAKs - AAK AB

BNP Paribas Arbitrage SNC (Program One and Three)  
 XTX Markets Limited (Program Three)

### ➤ AALBa - Aalberts NV

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ AAL - Anglo American PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ AASIm - Amundi Msci EM Asia UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ AAI - AA PLC

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XTX Markets Limited (Program Three)

## ➤ ABBNz - ABB Ltd

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ABBs - ABB Ltd

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BNP Paribas Arbitrage SNC (Program One and Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ABCAp - ABC arbitrage

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ ABFl - Associated British Foods PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ABIOp - Albioma SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ ABIB - Anheuser-Busch InBev SA/NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ ABNa - ABN AMRO Group NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ ABVXp - Abivax SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ABp - AB Science SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ACADs - AcadeMedia AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ ACAI - Acacia Mining PLC

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XTX Markets Limited (Program Three)

## ➤ ACAp - Credit Agricole SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ ACCELa - Accell Group NV

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ACEm - ACEA SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ACKBb - Ackermans & van Haaren NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ACOMOa - Amsterdam Commodities NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ ACSe - ACS Actividades de Construcción y Servicios SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ACWDI - SPDR MSCI ACWI UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ ACXe - Acerinox SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ACp - Accor SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ADENZ - Adecco Group AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ ADJd - ADO Properties SA

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Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ ADLd - ADLER Real Estate AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)

#### ➤ ADML - Admiral Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ ADN1d - Adesso AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ ADOCp - Adocia

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ ADPp - Aeroports de Paris

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ ADSd - adidas AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ ADVd - ADVA Optical Networking SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ ADXNz - Addex Therapeutics Ltd

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Citadel Securities (Europe) Limited (Program Three)

## ➤ ADYENa - Adyen NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ADa - Koninklijke Ahold Delhaize NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ AEDASe - Aedas Homes SAU

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Hudson River Trading Europe Limited (Program Three)

## ➤ AEDb - Aedifica SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ AEEMm - Amundi Msci Emerging Markets UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ AEFm - Aeffe SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ AEINd - Allgeier SE

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ AENAe - Aena SME SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ AFBs - AF POYRY AB

Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ AFLEp - Amundi Floating Rate USD Corporate UCITS ETF

Hudson River Trading Europe Limited (Program Three)

#### ➤ AFLTp - Amundi Floating Rate USD Corporate UCITS ETF

Hudson River Trading Europe Limited (Program Three)

#### ➤ AFXd - Carl Zeiss Meditec AG

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ AFp - Air France-KLM

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ AGFBb - AGFA-Gevaert NV

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ AGKl - Aggreko PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ AGLm - Autogrill SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)



## ➤ AGNa - Aegon NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ AGROl - Ros Agro PLC

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Hudson River Trading Europe Limited (Program Three)

## ➤ AGSb - Ageas

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ AHLAd - Alibaba Group Holding Ltd

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Hudson River Trading Europe Limited (Program Three)

## ➤ AHTl - Ashtead Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ AIRd - Airbus SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)

## ➤ AIRp - Airbus SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ AIXAd - AIXTRON SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ Alp - Air Liquide SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ AKAo - Akastor ASA

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Hudson River Trading Europe Limited (Program Three)

#### ➤ AKAp - Akka Technologies

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ AKERBo - Aker BP ASA

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Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ AKERo - Aker ASA

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Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ AKEp - Arkema SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ AKSOo - Aker Solutions ASA

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Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

## ➤ AKWp - AKWEL

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ AKZAa - Akzo Nobel NV

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ALBe - Corp Financiera Alba SA

Hudson River Trading Europe Limited (Program Three)

## ➤ ALCz - Alcon Inc

BNP Paribas Arbitrage SNC (Program One and Three)

## ➤ ALDp - ALD SA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ ALFAl - Alfa Financial Software Holdings PLC

Hudson River Trading Europe Limited (Program Three)

## ➤ ALFAs - Alfa Laval AB

BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ALIGs - Alimak Group AB

Hudson River Trading Europe Limited (Program Three)

## ➤ ALIVs - Autoliv Inc

BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ALKBc - ALK-Abello A/S

Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ALLNz - Allreal Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ALMBc - Alm Brand A/S

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Hudson River Trading Europe Limited (Program Three)

## ➤ ALMe - Almirall SA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ALOp - Alstom SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ALPHz - Alpiq Holding AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ ALSNz - ALSO Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ ALTAp - Altea SCA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ALTRu - Altri SGPS SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ ALTp - Altran Technologies SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ALVd - Allianz SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Jump Trading Europe B.V. (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ AM1h - Ahlstrom-Munksjo Oyj

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Hudson River Trading Europe Limited (Program Three)

#### ➤ AM3Dd - SLM Solutions Group AG

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Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ AMBUBc - Ambu A/S

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Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)

#### ➤ AMEASh - Amer Sports Oyj

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BRED Banque Populaire (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ AMGOl - Amigo Holdings PLC

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Hudson River Trading Europe Limited (Program Three)

#### ➤ AMGa - AMG Advanced Metallurgical Group NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)

#### ➤ AMPm - Amplifon SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Squarepoint Master Fund Ltd (Program One)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ AMSe - Amadeus IT Group SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ AMSz - ams AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ AMUNp - Amundi SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ AMp - Dassault Aviation SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ANAe - Acciona SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ANDRv - ANDRITZ AG

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ANIMm - Anima Holding SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ANTOL - Antofagasta PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ AOXd - alstria office REIT-AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ AOL - AO World PLC

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Hudson River Trading Europe Limited (Program Three)

## ➤ APAMa - APERAM SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ APPSe - Applus Services SA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ APRp - APRIL SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ AR4d - AURELIUS Equity Opportunities SE & Co KGaA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ARBNz - Arbonia AG

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ARCADa - Arcadis NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ARGXb - Argenx SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ ARGp - ARGAN SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ ARLd - Aareal Bank AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ARYNz - Aryzta AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ ASCNz - Ascom Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ ASCb - Ascencio

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ ASCm - Ascopiave SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

#### ➤ ASHMI - Ashmore Group PLC

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ASLI - Aberforth Smaller Companies Trust PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)



## ➤ ASMLa - ASML Holding NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ASMa - ASM International NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ASPp - AST Groupe SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ASRNLa - ASR Nederland NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ASRm - AS Roma SpA

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Virtu Financial Ireland Ltd (Program Two)

## ➤ ASSABs - Assa Abloy AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ASTm - Astaldi SpA

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Hudson River Trading Europe Limited (Program Two)

## ➤ ASYp - Assystem SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ AT1d - Arountown SA

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BNP Paribas Arbitrage SNC (Program One and Three)

## ➤ ATADL - Tatneft PJSC

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XTX Markets Limited (Program Three)

## ➤ ATCBa - Altice Europe NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Optiver V.O.F. (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ATCOAs - Atlas Copco AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ATCOBs - Atlas Copco AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ATCa - Altice Europe NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ATEAo - Atea ASA

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ATEBb - Atenor

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ATEMEp - ATEME SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ATEp - Alten SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ATIp - Actia Group

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ATLm - Atlantia SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ATOp - Atos SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ATRsv - Atrium European Real Estate Ltd

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XTX Markets Limited (Program Three)

## ➤ ATSTl - Alliance Trust PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ ATTs - Attendo AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ATm - ASTM SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ AUBp - Aubay

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Citadel Securities GCS (Ireland) Limited (Program Three)

➤ AURSp - AURES Technologies SA

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Hudson River Trading Europe Limited (Program Three)

➤ AUSSo - Austevoll Seafood ASA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

➤ AUTME m - Autostrade Meridionali SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

➤ AUTNz - Autoneum Holding AG

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

➤ AUTOl - Auto Trader Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
XTX Markets Limited (Program Three)

➤ AVANCo - Avance Gas Holding Ltd

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XTX Markets Limited (Program Three)

➤ AVIOm - Avio SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

➤ AVONl - Avon Rubber PLC

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Citadel Securities (Europe) Limited (Program Three)

➤ AWl - AVEVA Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ AVI - Aviva PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ AXBI - Axis Bank Ltd

Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)

#### ➤ AXFOs - Axfood AB

Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ AZAs - Avanza Bank Holding AB

Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ AZMm - Azimut Holding SpA

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Squarepoint Master Fund Ltd (Program One)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ AZNI - AstraZeneca PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe Limited (Program Two)  
 UTR8 BV (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ AZNs - AstraZeneca PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Optiver V.O.F. (Program Three)  
 Societe Generale London Branch (Program Three)  
 UTR8 BV (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)

## ➤ B2Ho - B2Holding ASA

Hudson River Trading Europe Limited (Program Three)

## ➤ B4Bd - METRO AG

BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ B5Ad - Bauer AG

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ B8Fd - Biofrontera AG

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ BABl - Babcock International Group PLC

Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BAERz - Julius Baer Group Ltd

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BAGl - AG Barr PLC

Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ BAKKAo - Bakkafrost P/F

Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)

## ➤ BALDBs - Fastighets AB Balder

BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BALNz - Baloise Holding AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BALTab - Balta Group SA

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Hudson River Trading Europe Limited (Program Three)

## ➤ BALYOp - Balyo SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ BAMIm - Banco BPM SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
XTX Markets Limited (Program Three)

## ➤ BAMNBa - Koninklijke BAM Groep NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BANBz - Bachem Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ BANm - BasicNet SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ BARCl - Barclays PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ BARNz - Barry Callebaut AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ BARb - Barco NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ BASd - BASF SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ BATSl - British American Tobacco PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ BAVAc - Bavarian Nordic A/S

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XTX Markets Limited (Program Three)

#### ➤ BAYNd - Bayer AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)



#### ➤ BAI - BAE Systems PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ BBAI - BBA Aviation PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ BBEDa - Beter Bed Holding NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)

#### ➤ BBNz - Bellevue Group AG

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ BBOXI - Tritax Big Box REIT PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 XTX Markets Limited (Program Three)

#### ➤ BBVAe - Banco Bilbao Vizcaya Argentaria SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ BBYI - Balfour Beatty PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ BBZAd - BB Biotech AG

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XTX Markets Limited (Program Three)

#### ➤ BBm - BB Biotech AG

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Hudson River Trading Europe Limited (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ BBp - Societe BIC SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ BC8d - Bechtle AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ BCARTb - Biocartis NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)

#### ➤ BCGEz - Banque Cantonale de Geneve

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ BCHNz - Burckhardt Compression Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ BCPu - Banco Comercial Portugues SA

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Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ BCVNz - Banque Cantonale Vaudoise

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ BCm - Brunello Cucinelli SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ BDEVI - Barratt Developments PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BDTd - Bertrandt AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ BEANz - Belimo Holding AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ BECm - B&C Speakers SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ BEFBb - Befimmo SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BEId - Beiersdorf AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BEKBb - Bekaert SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BEKNz - Berner Kantonalbank AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ BELIp - Le Belier

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Hudson River Trading Europe Limited (Program Three)

## ➤ BELLz - Bell Food Group AG

Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ BENp - Beneteau SA

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ BERMI - Lyxor FTSE MIB Daily -1x Inverse Bear UCITS ETF

Hudson River Trading Europe Limited (Program Two)

## ➤ BESla - BE Semiconductor Industries NV

Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BETSBs - Betsson AB

Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BEZd - Berentzen-Gruppe AG

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ BEZl - Beazley PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BFFm - Banca Farmafactoring SpA

Hudson River Trading Europe Limited (Program Two)

## ➤ BFITa - Basic-Fit NV

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ BGEOL - Bank of Georgia Group PLC

XTX Markets Limited (Program Three)

## ➤ BGFDL - Baillie Gifford Japan Trust PLC/The

Citadel Securities (Europe) Limited (Program Three)

## ➤ BGNm - Banca Generali SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BGSi - Baillie Gifford Shin Nippon PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ BHPl - BHP Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)

## ➤ BIFFl - Biffa PLC

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XTX Markets Limited (Program Three)

## ➤ BIGp - Bigben Interactive

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ BIJd - Bijou Brigitte AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ BILlAs - Bilia AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BILlS - BillerudKorsnas AB

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BImP - BioMerieux

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BINCKa - BinckBank NV

Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ BIO3d - Biotest AG

Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BIOABs - BioArctic AB

Hudson River Trading Europe Limited (Program Three)

## ➤ BIOGBs - BioGaia AB

Hudson River Trading Europe Limited (Program Three)

## ➤ BIONz - BB Biotech AG

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BIOTs - Biotage AB

Hudson River Trading Europe Limited (Program Three)

## ➤ BIRGi - Bank of Ireland Group PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ BIRGL - Bank of Ireland Group PLC

Citadel Securities (Europe) Limited (Program Three)

## ➤ BKGI - Berkeley Group Holdings PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BKIAe - Bankia SA

BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BKTe - Bankinter SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BKWz - BKW AG

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BLCp - Bastide le Confort Medical

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ BLKBz - Basellandschaftliche Kantonalbank

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Citadel Securities (Europe) Limited (Program Three)

## ➤ BLNDI - British Land Co PLC/The

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BMAXs - Bygghmax Group AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BMEDm - Banca Mediolanum SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BMEe - Bolsas y Mercados Espanoles SHMSF SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BMEI - B&M European Value Retail SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
XTX Markets Limited (Program Three)

## ➤ BMPSm - Banca Monte dei Paschi di Siena SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)

## ➤ BMW3d - Bayerische Motoren Werke AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BMWd - Bayerische Motoren Werke AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Jump Trading Europe B.V. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BNBB - Banque Nationale de Belgique

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ BNKEp - Lyxor EURO STOXX Banks DR UCITS ETF

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ORA Traders BV (Program Three)

## ➤ BNKRI - Bankers Investment Trust PLC/The

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Citadel Securities (Europe) Limited (Program Three)

## ➤ BNKm - Lyxor STOXX Europe 600 Banks UCITS ETF

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Hudson River Trading Europe Limited (Program Two)

## ➤ BNKp - Lyxor STOXX Europe 600 Banks UCITS ETF

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ORA Traders BV (Program Three)

## ➤ BNPm - BNP Paribas SA

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Hudson River Trading Europe Limited (Program Two)



#### ➤ BNPP - BNP Paribas SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ BNRd - Brenntag AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ BNZLI - Bunzl PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ BNp - Danone SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ BOBNNz - Bobst Group SA

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Citadel Securities (Europe) Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ BOIp - Boiron SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)

## ➤ BOKAa - Boskalis Westminster

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BOLp - Bollore SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BOLs - Boliden AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BONABs - Bonava AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ BONp - Bonduelle SCA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ BOOZTs - Boozt AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ BOSNz - Bossard Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BOSSd - HUGO BOSS AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

### ➤ BOYl - Bodycote PLC

Citadel Securities (Europe) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

### ➤ BOc - Bang & Olufsen A/S

Hudson River Trading Europe Limited (Program Three)

### ➤ BPEm - BPER Banca

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Squarepoint Master Fund Ltd (Program One)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

### ➤ BPOSTb - bpost SA

Citadel Securities GCS (Ireland) Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

### ➤ BPSOm - Banca Popolare di Sondrio SCPA

Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

### ➤ BPl - BP PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe Limited (Program Two)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

### ➤ BR50m - iShares BRIC 50 UCITS ETF

Hudson River Trading Europe Limited (Program Three)

### ➤ BRAVs - Bravida Holding AB

XTX Markets Limited (Program Three)

#### ➤ BRAm - Lyxor MSCI Brazil UCITS ETF

Hudson River Trading Europe Limited (Program Three)

#### ➤ BRBYL - Burberry Group PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ BREBb - Brederode SA

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ BREm - Freni Brembo SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ BREp - Lyxor STOXX Europe 600 Basic Resources UCITS ETF

Hudson River Trading Europe Limited (Program Three)

#### ➤ BRGo - Borregaard ASA

Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ BRIm - Brioschi Sviluppo Immobiliare SpA

Hudson River Trading Europe Limited (Program Three)

#### ➤ BRKNz - Burkhalter Holding AG

Citadel Securities (Europe) Limited (Program Three)

#### ➤ BRNLa - Brunel International NV

Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

#### ➤ BRSCI - BlackRock Smaller Cos Trust PLC

Citadel Securities (Europe) Limited (Program Three)

➤ [BRWML - BlackRock World Mining Trust PLC](#)

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

➤ [BRWL - Brewin Dolphin Holdings PLC](#)

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Citadel Securities (Europe) Limited (Program Three)

➤ [BSGRa - B&S Group Sarl](#)

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Citadel Securities GCS (Ireland) Limited (Program Three)

➤ [BSKPz - Basler Kantonalbank](#)

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Citadel Securities (Europe) Limited (Program Three)

➤ [BSLNz - Basilea Pharmaceutica AG](#)

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

➤ [BSLd - Basler AG](#)

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

➤ [BSSm - Biesse SpA](#)

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
XTX Markets Limited (Program Three)

➤ [BSTm - Banca Sistema SpA](#)

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

➤ [BSXm - Lyxor EURO STOXX 50 Daily -1x Inverse UCITS ETF](#)

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Hudson River Trading Europe Limited (Program Three)

➤ [BSXp - Lyxor EURO STOXX 50 Daily -1x Inverse UCITS ETF](#)

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ORA Traders BV (Program Three)

## ➤ BTGI - BTG PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BTP2Sm - Lyxor BTP Daily -2x Inverse UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ BTI - BT Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BUCNz - Bucher Industries AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BUFABs - Bufab AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ BUND2m - Lyxor Bund Daily -2x Inverse UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ BUREs - Bure Equity AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ BVBD - Borussia Dortmund GmbH & Co KGaA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ BVICI - Britvic PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BVlp - Bureau Veritas SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BVSl - Bovis Homes Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BWLPGo - BW LPG Ltd

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BWNGl - N Brown Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BWOo - BW Offshore Ltd

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BWYl - Bellway PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ BX4p - Lyxor CAC 40 Daily -2x Inverse UCITS ETF

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Optiver V.O.F. (Program Two and Three)  
ORA Traders BV (Program Three)

## ➤ BXXm - Lyxor EURO STOXX 50 Daily -2x Inverse UCITS ETF

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Hudson River Trading Europe Limited (Program Two)

## ➤ BXXp - Lyxor EURO STOXX 50 Daily -2x Inverse UCITS ETF

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ORA Traders BV (Program Three)

## ➤ BYGl - Big Yellow Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ BYW6d - BayWa AG

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ BZURm - Buzzi Unicem SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)

## ➤ BZUm - Buzzi Unicem SpA

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ C40p - Amundi Cac 40 UCITS ETF DR

Hudson River Trading Europe Limited (Program Three)

## ➤ C40z - Amundi Cac 40 UCITS ETF DR

ORA Traders BV (Program Three)

## ➤ C4Dp - Amundi Cac 40 UCITS ETF DR

Hudson River Trading Europe Limited (Program Three)

## ➤ C50m - Amundi Euro Stoxx 50 UCITS DR

Hudson River Trading Europe Limited (Program Three)

## ➤ C50p - Amundi Euro Stoxx 50 UCITS DR

ORA Traders BV (Program Three)

## ➤ C5Hi - Cairn Homes PLC

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ C6Ep - Amundi Stoxx Europe 600 UCITS ETF

Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)  
ORA Traders BV (Program Three)



## ➤ CABKe - CaixaBank SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CACMp - Lyxor CAC MID 60 DR UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ CACp - Lyxor CAC 40 DR UCITS ETF

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Optiver V.O.F. (Program Two and Three)  
ORA Traders BV (Program Three)

## ➤ CAFe - Construcciones y Auxiliar de Ferrocarriles SA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CAFp - Caisse Regionale de Credit Agricole Mutuel de Paris et d'Ile-de-France

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ CAIm - Cairo Communication SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CAIv - CA Immobilien Anlagen AG

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CALL - Capital & Regional PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ CAPCl - Capital & Counties Properties PLC

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CAPd - Encavis AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ CAPp - Capgemini SE

BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ CARDI - Card Factory PLC

XTX Markets Limited (Program Three)

## ➤ CARLbC - Carlsberg A/S

Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ CARMp - Carmila SA

Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)

## ➤ CARRm - Carraro SpA/Campodarsego

Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)

## ➤ CASHe - Prosegur Cash SA

Hudson River Trading Europe Limited (Program Three)  
 ORA Traders BV (Program Three)

## ➤ CASSm - Societa Cattolica di Assicurazioni SC

Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Qube Fund Ltd (Program One)

## ➤ CASTs - Castellum AB

BNP Paribas Arbitrage SNC (Program One and Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ CATGp - Catana Group

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ CAV1Vh - Caverion OYJ

Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CAp - Carrefour SA

BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CB5p - Amundi ETF MSCI Europe Banks UCITS ETF

Hudson River Trading Europe Limited (Program Three)

## ➤ CBGl - Close Brothers Group PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CBKDI - Commercial International Bank Egypt SAE

Hudson River Trading Europe Limited (Program Three)

## ➤ CBKd - Commerzbank AG

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CBUS5m - UBS ETF - Bloomberg Barclays US Liquid Corporates 1-5 Year UCITS ETF

Hudson River Trading Europe Limited (Program Three)

## ➤ CC1p - Amundi Msci China UCITS ETF

Hudson River Trading Europe Limited (Program Three)

## ➤ CCCI - Computacenter PLC

Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CCEPa - Coca-Cola European Partners PLC

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ CCHl - Coca-Cola HBC AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CCLl - Carnival PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CCRI - C&C Group PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ CDAp - Cie des Alpes

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ CDlp - Christian Dior SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CE2d - CropEnergies AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CECd - CECONOMY AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ CEMUa - iShares Core MSCI EMU UCITS ETF

Optiver V.O.F. (Program Three)

## ➤ CEMm - Cementir Holding SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ CENp - Groupe Crit

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ CERVm - Cerved Group SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Qube Fund Ltd (Program One)  
XTX Markets Limited (Program Three)

## ➤ CEUm - Amundi Msci Europe UCITS ETF

Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Two and Three)

## ➤ CEVIs - Cellavision AB

Hudson River Trading Europe Limited (Program Three)

## ➤ CEVd - CENTROTEC Sustainable AG

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ CEYl - Centamin PLC

XTX Markets Limited (Program Three)

## ➤ CEm - Credito Emiliano SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CFEBb - Cie d'Entreprises CFE

Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CFRz - Cie Financiere Richemont SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CGCBVh - Cargotec Oyj

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CGGp - CGG SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ CGMp - Cegedim SA

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Hudson River Trading Europe Limited (Program Three)

## ➤ CHGL - Chemring Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CHRc - Chr Hansen Holding A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CICNz - Cicor Technologies Ltd

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Citadel Securities (Europe) Limited (Program Three)

## ➤ CIEe - CIE Automotive SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CINAm - Lyxor China Enterprise HSCEI UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ CINEI - Cineworld Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CIRm - CIR-Compagnie Industriali Riunite SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CKNL - Clarkson PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ CLABs - Cloetta AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CLASBs - Clas Ohlson AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CLAp - Claranova SADIR

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Hudson River Trading Europe Limited (Program Three)

## ➤ CLDNI - Caledonia Investments PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ CLNXe - Cellnex Telecom SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CLNz - Clariant AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ CLTNz - Coltene Holding AG

Citadel Securities (Europe) Limited (Program Three)

#### ➤ CLXNz - Crealogix Holding AG

Citadel Securities (Europe) Limited (Program Three)

#### ➤ CMBNz - Cembra Money Bank AG

BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ CMBm - Cembre SpA

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ CMUp - Amundi Index MSCI EMU UCITS ETF DR

Hudson River Trading Europe Limited (Program Three)

#### ➤ CNAI - Centrica PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ CNEI - Cairn Energy PLC

Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ CNFp - Caisse Regionale de Credit Agricole Mutuel Nord de France

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ CNHIm - CNH Industrial NV

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)



## ➤ CNPp - CNP Assurances

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CNWKd - Co.don AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ COAl - Coats Group PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ COBl - Cobham PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ COFAp - Coface SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ COFBb - Cofinimmo SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ COKd - CANCOM SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ COLOBc - Coloplast A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ COLRb - Colruyt SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ COLe - Inmobiliaria Colonial Socimi SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ COMBb - Cie du Bois Sauvage SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ COMd - comdirect bank AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)

#### ➤ CONd - Continental AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ CONz - Conzzeta AG

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ COPNz - COSMO Pharmaceuticals NV

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Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)

#### ➤ COPd - CompuGroup Medical SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ CORu - Corticeira Amorim SGPS SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)

#### ➤ COSTl - Costain Group PLC

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ COTNz - Comet Holding AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ COVp - Covivio

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ COXp - Nicox

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ COp - Casino Guichard Perrachon SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CPGI - Compass Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CPINvb - Care Property Invest NV

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ CPII - Capita PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CPRm - Davide Campari-Milano SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CRA1Vh - Cramo OYJ

Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CRBNa - Corbion NV

Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CRBm - Lyxor Commodities Thomson Reuters/CoreCommodity CRB TR UCITS ETF

Hudson River Trading Europe Limited (Program Three)

## ➤ CRDAI - Croda International PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CRESm - COIMA RES SpA

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ CRGi - CRH PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ CRHl - CRH PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CRIp - Chargeurs SA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ CRSTl - Crest Nicholson Holdings plc

XTX Markets Limited (Program Three)

## ➤ CRUDm - ETFS WTI Crude Oil

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Hudson River Trading Europe Limited (Program Two)

## ➤ CSEMUm - iShares Core MSCI EMU UCITS ETF

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Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Two and Three)

## ➤ CSGNz - Credit Suisse Group AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CSHd - CENIT AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ CSMIBm - iShares FTSE MIB UCITS ETF EUR Acc

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Hudson River Trading Europe Limited (Program Three)

## ➤ CSNI - Chesnara PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ CSPXJm - iShares Core MSCI Pacific ex-Japan UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ CSPXI - iShares Core S&P 500 UCITS ETF

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Optiver V.O.F. (Program Three)

## ➤ CSSMIz - iShares SMI ETF CH

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Optiver V.O.F. (Program Three)

## ➤ CSSPXm - iShares Core S&P 500 UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ CSSX5m - iShares Core EURO STOXX 50 UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ CSSX5z - iShares Core EURO STOXX 50 UCITS ETF

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Optiver V.O.F. (Program Three)  
ORA Traders BV (Program Three)

## ➤ CSXd - Credit Suisse Group AG

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Optiver V.O.F. (Program Three)

## ➤ CSp - AXA SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CTECl - ConvaTec Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)  
XTX Markets Limited (Program Three)

## ➤ CTTu - CTT-Correios de Portugal SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ CTY1Sh - Citycon OYJ

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ CTYl - City of London Investment Trust PLC/The

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ CUREa - Curetis NV

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Hudson River Trading Europe Limited (Program Three)

## ➤ CVALm - Credito Valtellinese SpA

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ CW8p - Amundi Msci World UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

➤ CWCd - Cewe Stiftung & Co KGAA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

➤ CWDl - Countrywide PLC

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XTX Markets Limited (Program Three)

➤ CWKl - Cranswick PLC

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Citadel Securities (Europe) Limited (Program Three)

➤ CYADb - Celyad SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

➤ CYBGl - CYBG PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
XTX Markets Limited (Program Three)

➤ DAEz - Daetwyler Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

➤ DAId - Daimler AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ DALm - Datalogic SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DANRm - Danieli & C Officine Meccaniche SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)

## ➤ DANSKc - Danske Bank A/S

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Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DANm - Danieli & C Officine Meccaniche SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ DAX2Sm - Lyxor Daily ShortDAX x2 UCITS ETF

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Hudson River Trading Europe Limited (Program Two)

## ➤ DAXLEm - Lyxor Daily LevDAX UCITS ETF

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Hudson River Trading Europe Limited (Program Two)

## ➤ DAXXm - Lyxor DAX DR UCITS ETF

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Hudson River Trading Europe Limited (Program Two)

## ➤ DAXp - Lyxor DAX DR UCITS ETF

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ORA Traders BV (Program Three)

## ➤ DB1d - Deutsche Boerse AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DBANd - Deutsche Beteiligungs AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)



## ➤ DBGp - Derichebourg SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ DBKd - Deutsche Bank AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Jump Trading Europe B.V. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DBVp - DBV Technologies SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ DBXAd - Xtrackers MSCI Europe UCITS ETF

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Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)

## ➤ DBXDd - Xtrackers DAX UCITS ETF

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Optiver V.O.F. (Program Three)  
ORA Traders BV (Program Three)

## ➤ DBXEd - Xtrackers Euro Stoxx 50 UCITS ETF

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Optiver V.O.F. (Program Two and Three)  
ORA Traders BV (Program Three)

## ➤ DCCI - DCC PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ DCI - Dixons Carphone PLC

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DEAm - DeA Capital SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ DECp - JCDecaux SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DEQd - Deutsche EuroShop AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DES2d - L&G DAX Daily 2x Short UCITS ETF

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ORA Traders BV (Program Three)

## ➤ DESNz - Dottikon Es Holding AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ DEXBb - Dexia SA

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Virtu Financial Ireland Ltd (Program Two)

## ➤ DEZd - Deutz AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DFDSd - Dfds A/S

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ DFSI - DFS Furniture PLC

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Hudson River Trading Europe Limited (Program Three)

## ➤ DGEI - Diageo PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DGp - Vinci SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DHERd - Delivery Hero SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)

## ➤ DHGi - Dalata Hotel Group PLC

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ DIAe - Distribuidora Internacional de Alimentacion SA

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DIAL - Dialight PLC

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Virtu Financial Ireland Ltd (Program Two)

## ➤ DIAm - DiaSorin SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ DIBm - Digital Bros SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

#### ➤ DICd - DIC Asset AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ DIEb - D'ieten SA/NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ DIMp - Sartorius Stedim Biotech

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ DIOs - Dios Fastigheter AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ DISm - d'Amico International Shipping SA

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Hudson River Trading Europe Limited (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ DJLEVm - Lyxor EURO STOXX 50 Daily 2x Leveraged UCITS ETF

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Hudson River Trading Europe Limited (Program Two)

#### ➤ DKSHz - DKSH Holding AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ DLARl - De La Rue PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

#### ➤ DLGd - Dialog Semiconductor PLC

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ DLGl - Direct Line Insurance Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ DLGm - De' Longhi SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Qube Fund Ltd (Program One)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ DLNl - Derwent London PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ DMGTl - Daily Mail & General Trust PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ DMREd - DEMIRE Deutsche Mittelstand Real Estate AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ DNAh - DNA Oyj

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Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ DNBo - DNB ASA

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Optiver V.O.F. (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ DNLMl - Dunelm Group PLC

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XTX Markets Limited (Program Three)

## ➤ DNORDc - D/S Norden A/S

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DNOo - DNO ASA

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DOBm - doBank SpA

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Hudson River Trading Europe Limited (Program Two)

## ➤ DOCv - DO & CO AG

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XTX Markets Limited (Program Three)

## ➤ DOKAz - dormakaba Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ DOMl - Domino's Pizza Group PLC

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DOMs - Dometic Group AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ DPHl - Dechra Pharmaceuticals PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ DPLMI - Diploma PLC

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ DPWd - Deutsche Post AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Jump Trading Europe B.V. (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ DRId - 1&1 Drillisch AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ DRW3d - Draegerwerk AG & Co KGaA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ DRXl - Drax Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ DSDp - Lyxor Daily ShortDAX x2 UCITS ETF

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ORA Traders BV (Program Three)

#### ➤ DSMa - Koninklijke DSM NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ DSVc - DSV A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DSYp - Dassault Systemes SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DTEd - Deutsche Telekom AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DTYL - Dignity PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ DUEd - Duerr AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ DUFNz - Dufry AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ DUSTs - Dustin Group AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ DVOl - Devro PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ DVTp - Devoteam SA

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Citadel Securities GCS (Ireland) Limited (Program Three)



## ➤ DWNld - Deutsche Wohnen SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ DWSd - DWS Group GmbH & Co KGaA

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Hudson River Trading Europe Limited (Program Three)

## ➤ DX2Xd - Xtrackers Stoxx Europe 600 UCITS ETF

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Optiver V.O.F. (Program Three)

## ➤ DXSNd - Xtrackers ShortDAX Daily Swap UCITS ETF

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Optiver V.O.F. (Program Three)  
ORA Traders BV (Program Three)

## ➤ EBROe - Ebro Foods SA

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ EBSv - Erste Group Bank AG

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ECMPAa - Eurocommercial Properties NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ECML - Electrocomponents PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ECONBb - Econocom Group SA/NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ECRé - Ercros SA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ECXd - Epigenomics AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ EDENp - Edenred

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ EDFp - Electricite de France SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ EDINl - Edinburgh Investment Trust PLC/The

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ EDNRm - Edison SpA

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Hudson River Trading Europe Limited (Program Two)

## ➤ EDPRu - EDP Renovaveis SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ EDPu - EDP - Energias de Portugal SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ [EEEp - BNP Paribas Easy FTSE EPRA/NAREIT Eurozone Capped UCITS ETF](#)

Hudson River Trading Europe Limited (Program Three)

➤ [EFGNz - EFG International AG](#)

Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

➤ [EFMl - Edinburgh Dragon Trust PLC](#)

Citadel Securities (Europe) Limited (Program Three)

➤ [EGLu - Mota-Engil SGPS SA](#)

Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

➤ [EIFFp - Societe de la Tour Eiffel](#)

Citadel Securities GCS (Ireland) Limited (Program Three)

➤ [EIGl - EI Group PLC](#)

Citadel Securities (Europe) Limited (Program Three)

➤ [EIMIm - iShares Core MSCI EM IMI UCITS ETF](#)

Hudson River Trading Europe Limited (Program Three)

➤ [EIN3d - Einhell Germany AG](#)

Citadel Securities GCS (Ireland) Limited (Program Three)

➤ [EKlp - Ekinops SAS](#)

Citadel Securities GCS (Ireland) Limited (Program Three)

➤ [EKTABs - Elekta AB](#)

BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ [EKTe - Euskaltel SA](#)

XTX Markets Limited (Program Three)

## ➤ EL4Ad - Deka DAX UCITS ETF

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Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)

## ➤ ELCm - Elica SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ELEe - Endesa SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ELGd - Elmos Semiconductor AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ ELIORp - Elio Group SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ELISAh - Elisa OYJ

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ELISp - Elis SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ELIb - Elia System Operator SA/NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ELMl - Elementis PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ELNm - El.En. SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

#### ➤ ELTELS - Eltel AB

Hudson River Trading Europe Limited (Program Three)

#### ➤ ELUXBs - Electrolux AB

BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ELp - EssilorLuxottica SA

BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)

#### ➤ EM13m - Lyxor EuroMTS 1-3Y Investment Grade DR UCITS ETF

Hudson River Trading Europe Limited (Program Three)

#### ➤ EMBEm - iShares J.P. Morgan USD EM Bond EUR Hedged UCITS ETF Dist

Hudson River Trading Europe Limited (Program Three)

#### ➤ EMGI - Man Group PLC/Jersey

BNP Paribas Arbitrage SNC (Program One and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ EMMNz - Emmi AG

Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ EMSNz - EMS-Chemie Holding AG

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ EMUAAz - UBS ETF MSCI EMU UCITS ETF

Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)

#### ➤ EMUEUm - UBS ETF MSCI EMU UCITS ETF

Hudson River Trading Europe Limited (Program Two)

#### ➤ EMm - Emak SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

#### ➤ ENAVm - Enav SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Qube Fund Ltd (Program One)  
XTX Markets Limited (Program Three)

#### ➤ ENCe - Ence Energia y Celulosa SA

BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ ENELm - Enel SpA

BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Jump Trading Europe B.V. (Program Two and Three)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ENGIp - Engie SA

BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ENGe - Enagas SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ENId - Eni SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ ENIm - Eni SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Jump Trading Europe B.V. (Program Two and Three)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Tower Research Capital Europe BV (Program Two)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ENTRAO - Entra ASA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ ENXp - Euronext NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ ENp - Bouygues SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ EOANd - E.ON SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Jump Trading Europe B.V. (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ EOp - Faurecia SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ EPIAs - Epiroc AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Hudson River Trading Europe Limited (Program Three)

#### ➤ EPIBs - Epiroc AB

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Hudson River Trading Europe Limited (Program Three)

#### ➤ EPRo - Europris ASA

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Hudson River Trading Europe Limited (Program Three)

#### ➤ EQNRo - Equinor ASA

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Hudson River Trading Europe Limited (Program Three)  
 Optiver V.O.F. (Program Three)

#### ➤ ERAp - Eramet

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ ERFp - Eurofins Scientific SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)



## ➤ ERGm - ERG SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ERICAs - Telefonaktiebolaget LM Ericsson

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Virtu Financial Ireland Ltd (Program Two)

## ➤ ERICBs - Telefonaktiebolaget LM Ericsson

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ERMKd - DEAG Deutsche Entertainment AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ERML - Euromoney Institutional Investor PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ EROp - SPDR MSCI Europe UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ ERYPP - Erytech Pharma SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ESEHp - BNP Paribas Easy S&P 500 UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ ESlp - ESI Group

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ESNTI - Essentra PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ESPL - Empiric Student Property PLC

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Hudson River Trading Europe Limited (Program Three)

## ➤ ESSIBs - Essity AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)

## ➤ ETDDp - BNP Paribas Easy EURO STOXX 50 UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ ETFMIm - Lyxor FTSE MIB UCITS ETF

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Hudson River Trading Europe Limited (Program Two)  
Optiver V.O.F. (Program Two and Three)

## ➤ ETHm - Eurotech SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ETLp - Eutelsat Communications SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ETOL - Entertainment One Ltd

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XTX Markets Limited (Program Three)

## ➤ ETZDp - BNP Paribas Easy Stoxx Europe 600 UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ ETZp - BNP Paribas Easy Stoxx Europe 600 UCITS ETF

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Optiver V.O.F. (Program Three)

## ➤ EUCARp - Europcar Mobility Group

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ EUEAa - iShares Core EURO STOXX 50 UCITS ETF EUR Dist

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Optiver V.O.F. (Program Two and Three)  
ORA Traders BV (Program Three)

➤ EUEm - iShares Core EURO STOXX 50 UCITS ETF EUR Dist

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Hudson River Trading Europe Limited (Program Two)

➤ EUNm - iShares STOXX Europe 50 UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

➤ EURNb - Euronav NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

➤ EUS3m - ETFS 3x Long USD Short EUR

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Hudson River Trading Europe Limited (Program Three)

➤ EUZd - Eckert & Ziegler Strahlen- und Medizintechnik AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

➤ EV4d - Constantin Medien AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

➤ EVDd - CTS Eventim AG & Co KGaA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

➤ EVEz - Evolva Holding SA

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Citadel Securities (Europe) Limited (Program Three)

➤ EVKd - Evonik Industries AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

➤ EVNv - EVN AG

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Virtu Financial Ireland Ltd (Program Two)

➤ EVOs - Evolution Gaming Group AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ EVRI - Evraz PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ EVSb - EVS Broadcast Equipment SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ EVTd - Evotec SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ EWII - Edinburgh Worldwide Investment Trust PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ EXH1d - iShares STOXX Europe 600 Oil & Gas UCITS ETF DE

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Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)

## ➤ EXH4d - iShares STOXX Europe 600 Industrial Goods & Services UCITS ETF DE

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Optiver V.O.F. (Program Three)

## ➤ EXH5d - iShares STOXX Europe 600 Insurance UCITS ETF DE

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Optiver V.O.F. (Program Three)

## ➤ EXH9d - iShares STOXX Europe 600 Utilities UCITS ETF DE

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Optiver V.O.F. (Program Three)

## ➤ EXMb - Exmar NV

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ EXNd - Expedeon AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ EXOm - EXOR NV

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Squarepoint Master Fund Ltd (Program One)  
 XTX Markets Limited (Program Three)

## ➤ EXPNI - Experian PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe Limited (Program Two)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ EXS1d - iShares Core DAX UCITS ETF DE

Jump Trading Europe B.V. (Program Three)  
 Optiver V.O.F. (Program Three)  
 ORA Traders BV (Program Three)

## ➤ EXS1m - iShares Core DAX UCITS ETF DE

Hudson River Trading Europe Limited (Program Three)

## ➤ EXS2d - iShares TecDAX UCITS ETF DE

Optiver V.O.F. (Program Three)

## ➤ EXS3d - iShares MDAX UCITS ETF DE

Hudson River Trading Europe Limited (Program Three)  
 Optiver V.O.F. (Program Three)

## ➤ EXSAm - iShares STOXX Europe 600 UCITS ETF DE

Hudson River Trading Europe Limited (Program Two)

## ➤ EXSIId - iShares EURO STOXX UCITS ETF DE

Optiver V.O.F. (Program Three)

## ➤ EXV1d - iShares STOXX Europe 600 Banks UCITS ETF DE

Hudson River Trading Europe Limited (Program Three)  
 Optiver V.O.F. (Program Three)  
 ORA Traders BV (Program Three)

➤ [EXV2d - iShares STOXX Europe 600 Telecommunications UCITS ETF DE](#)

Hudson River Trading Europe Limited (Program Three)

➤ [EXV4d - iShares STOXX Europe 600 Health Care UCITS ETF DE](#)

Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)

➤ [EXV5d - iShares STOXX Europe 600 Automobiles & Parts UCITS ETF DE](#)

Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)

➤ [EXV6d - iShares STOXX Europe 600 Basic Resources UCITS ETF DE](#)

Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)

➤ [EXW1d - iShares Core EURO STOXX 50 UCITS ETF DE](#)

Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Two and Three)  
ORA Traders BV (Program Three)

➤ [EXX1d - iShares EURO STOXX Banks 30-15 UCITS ETF DE](#)

Optiver V.O.F. (Program Three)  
ORA Traders BV (Program Three)

➤ [EZEe - Grupo Ezentis SA](#)

Hudson River Trading Europe Limited (Program Three)

➤ [EZJl - easyJet PLC](#)

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ [F3Cd - SFC Energy AG](#)

Citadel Securities GCS (Ireland) Limited (Program Three)

➤ [FABGs - Fabege AB](#)

BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ FAEe - Faes Farma SA

Hudson River Trading Europe Limited (Program Three)

#### ➤ FAGRb - Fagron

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ FBKm - FinecoBank Banca Fineco SpA

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Squarepoint Master Fund Ltd (Program One)  
 XTX Markets Limited (Program Three)

#### ➤ FCAm - Fiat Chrysler Automobiles NV

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Squarepoint Master Fund Ltd (Program One)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ FCCe - Fomento de Construcciones y Contratas SA

Hudson River Trading Europe Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ FCITL - F&C Investment Trust PLC

Hudson River Trading Europe Limited (Program Three)

#### ➤ FCSSl - Fidelity China Special Situations PLC

Virtu Financial Ireland Ltd (Program Two)

#### ➤ FCTm - Fincantieri SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Qube Fund Ltd (Program One)

#### ➤ FDAm - Fidia SpA

Hudson River Trading Europe Limited (Program Two)

## ➤ FDML - FDM Group Holdings PLC

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Hudson River Trading Europe Limited (Program Three)

## ➤ FDRé - Fluidra SA

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Hudson River Trading Europe Limited (Program Three)

## ➤ FERGI - Ferguson PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ FERé - Ferrovial SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ FEVL - Fidelity European Values PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ FFARMA - ForFarmers NV

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ FFPp - FFP

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ FGAp - FIGEAC-AERO

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ FGPI - Firstgroup PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)



## ➤ FGRp - Eiffage SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ FGTL - Finsbury Growth & Income Trust PLC/Fund

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ FHZNz - Flughafen Zurich AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ FIA1Sh - Finnair OYJ

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ FIEd - Fielmann AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ FIlp - LISI

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ FILAm - Fila SpA

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Hudson River Trading Europe Limited (Program Two)

## ➤ FINGBs - Fingerprint Cards AB

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ FINz - Georg Fischer AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ FIVEI - X5 Retail Group NV

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ FKRM - Falck Renewables SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ FLOTm - Lyxor Barclays Floating Rate Euro 0-7Y UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ FLOWa - Flow Traders

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ FLSc - FLSmidth & Co A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ FLUv - Flughafen Wien AG

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Virtu Financial Ireland Ltd (Program Two)

## ➤ FLYp - Societe Fonciere Lyonnaise SA

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Hudson River Trading Europe Limited (Program Three)

## ➤ FMEd - Fresenius Medical Care AG & Co KGaA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ FMm - Fiera Milano SpA

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ FNACp - Fnac Darty SA

Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ FNMm - FNM SpA

Hudson River Trading Europe Limited (Program Two)

## ➤ FNTNd - Freenet AG

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ FORNz - Forbo Holding AG

Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ FORTMh - Fortum OYJ

BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ FPE3d - FUCHS PETROLUB SE

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ FPEd - FUCHS PETROLUB SE

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ FP Hd - Francotyp-Postalia Holding AG

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ FPP - TOTAL SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ FRAd - Fraport AG Frankfurt Airport Services Worldwide

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ FRESI - Fresnillo PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ FRED - Fresenius SE & Co KGaA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ FROo - Frontline Ltd/Bermuda

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Hudson River Trading Europe Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ FRp - Valeo SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ FSJL - James Fisher & Sons PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ FTIp - TechnipFMC PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ FTONz - Feintool International Holding AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ FTRNp - Futuren SA

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Virtu Financial Ireland Ltd (Program Two)

## ➤ FURa - Fugro NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ FUTRI - Future PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ FXCm - iShares China Large Cap UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ G1Ad - GEA Group AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ G24d - Scout24 AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GALEz - Galenica AG

BNP Paribas Arbitrage SNC (Program One and Three)

## ➤ GALPu - Galp Energia SGPS SA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GAMz - GAM Holding AG

Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GAVz - Carlo Gavazzi Holding AG

Citadel Securities (Europe) Limited (Program Three)

## ➤ GAWl - Games Workshop Group PLC

Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ GBBp - Bourbon Corp

Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ GBFd - Bilfinger SE

Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GBLBb - Groupe Bruxelles Lambert SA

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GBSl - Gold Bullion Securities Ltd

Optiver V.O.F. (Program Three)

## ➤ GBSm - Gold Bullion Securities Ltd

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Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)

## ➤ GBSp - Gold Bullion Securities Ltd

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Optiver V.O.F. (Program Three)

## ➤ GBTp - Guerbet

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ GCCi - C&C Group PLC

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ GCOe - Grupo Catalana Occidente SA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GE3Lm - ETFS 3x Daily Long DAX 30

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Hudson River Trading Europe Limited (Program Three)

## ➤ GEBNz - Geberit AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GEDIm - GEDI Gruppo Editoriale SpA

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Virtu Financial Ireland Ltd (Program Two)

## ➤ GENLI - Genel Energy Plc

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ GENc - Genmab A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ GEOM - Geox SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ GESTe - Gestamp Automocion SA

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Hudson River Trading Europe Limited (Program Three)

#### ➤ GETIBs - Getinge AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ GETp - Getlink SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ GEm - Gefran SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

#### ➤ GFCp - Gecina SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ GFRDI - Galliford Try PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ GFSI - G4S PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)



## ➤ GFTUL - Grafton Group PLC

XTX Markets Limited (Program Three)

## ➤ GFTd - GFT Technologies SE

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ GGTVm - Giglio Group SpA

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ GIGo - Gaming Innovation Group Inc

Hudson River Trading Europe Limited (Program Three)

## ➤ GILd - DMG Mori AG

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GIMAm - Gima TT SpA

Hudson River Trading Europe Limited (Program Three)  
Intermonte Sim SPA (Program Two)

## ➤ GIMBb - Gimv NV

Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GIVNz - Givaudan SA

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GJFo - Gjensidige Forsikring ASA

Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GKPl - Gulf Keystone Petroleum Ltd

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ GKSD - GK Software SE

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ GL9i - Glanbia PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ GLENl - Glencore PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GLEp - Societe Generale SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GLJd - GRENKE AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GLOp - GL Events

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ GLPGa - Galapagos NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GMMd - Grammer AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GN1i - Green REIT plc

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ GNCl - Greencore Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GNFTp - Genfit

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ GNkl - Greene King PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GNSl - Genus PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GNc - GN Store Nord A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GOCOl - GoCo Group PLC

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Hudson River Trading Europe Limited (Program Three)

## ➤ GOEp - Groupe Gorge

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ GOGLo - Golden Ocean Group Ltd

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ GOGL - Go-Ahead Group PLC/The

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GPORL - Great Portland Estates PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GRCm - Lyxor MSCI Greece UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ GREENb - Greenyard NV

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ GREp - Lyxor MSCI Greece UCITS ETF

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ORA Traders BV (Program Three)

## ➤ GRFPe - Grifols SA

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ORA Traders BV (Program Three)

## ➤ GRFe - Grifols SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GRGl - Greggs PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GRll - Grainger PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GRKPz - Graubuendner Kantonalbank

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Citadel Securities (Europe) Limited (Program Three)

## ➤ GRNGs - Granges AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GSC1d - Gesco AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ GSFo - Grieg Seafood ASA

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GSKl - GlaxoSmithKline PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ GSSl - Genesis Emerging Markets Fund Ltd

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ GTTp - Gaztransport Et Technigaz SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GURz - Gurit Holding AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ GVCl - GVC Holdings PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GVNva - GrandVision NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ GW1d - Gerry Weber International AG

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Hudson River Trading Europe Limited (Program Three)

## ➤ GX1d - Gerresheimer AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ Gm - Assicurazioni Generali SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ H5Ed - HELMA Eigenheimbau AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ HABd - Hamborner REIT AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ HAEd - HAEMATO AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ HALa - HAL Trust

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ HASl - Hays PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HBHd - Hornbach Holding AG & Co KGaA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ HBLNz - Hypothekarbank Lenzburg AG

Citadel Securities (Europe) Limited (Program Three)

## ➤ HBMD - Hornbach Baumarkt AG

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ HBRNi - Hibernia REIT plc

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ HDDd - Heidelberger Druckmaschinen AG

Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HDGa - Hunter Douglas NV

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ HEADl - Headlam Group PLC

Citadel Securities (Europe) Limited (Program Three)

## ➤ HEIAa - Heineken NV

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HEIJMa - Heijmans NV

Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ HEIOa - Heineken Holding NV

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HEId - HeidelbergCement AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HELNz - Helvetia Holding AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ HEMBs - Hembla AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ HEMFs - Hemfosa Fastigheter AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ HEN3d - Henkel AG & Co KGaA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HENd - Henkel AG & Co KGaA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HERm - Hera SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)



## ➤ HEXABs - Hexagon AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HFDI - Halfords Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HGTL - HgCapital Trust PLC/Fund

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Citadel Securities (Europe) Limited (Program Three)

## ➤ HHFAd - Hamburger Hafen und Logistik AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HHPDI - Hon Hai Precision Industry Co Ltd

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Citadel Securities (Europe) Limited (Program Three)

## ➤ HICLI - Hicli Infrastructure PLC

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ HIKI - Hikma Pharmaceuticals PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HILSI - Hill & Smith Holdings PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ HLAGd - Hapag-Lloyd AG

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XTX Markets Limited (Program Three)

## ➤ HLCLI - Helical PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ HLEd - Hella GmbH & Co KGaA

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ HLMAI - Halma PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HLNGo - Hoegh LNG Holdings Ltd

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ HLL - Hargreaves Lansdown PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HMBs - Hennes & Mauritz AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HMSOL - Hammerson PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HNLd - Dr Hoenle AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ HNR1d - Hannover Rueck SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HOCd - HolidayCheck Group AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ HOCl - Hochschild Mining PLC

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XTX Markets Limited (Program Three)

## ➤ HOFIs - Hoist Finance AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ HOLMBs - Holmen AB

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HOMEe - Neinor Homes SA

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Hudson River Trading Europe Limited (Program Three)

## ➤ HOMIb - Home Invest Belgium SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ HOTd - HOCHTIEF AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HOp - Thales SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HPOLBs - Hexpol AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ HRIL - Herald Investment Trust PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ HSBAL - HSBC Holdings PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HSBKI - Halyk Savings Bank of Kazakhstan JSC

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Hudson River Trading Europe Limited (Program Three)

## ➤ HSBp - HSBC Holdings PLC

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ HSLI - Henderson Smaller Companies Investment Trust PLC/The

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Citadel Securities (Europe) Limited (Program Three)

## ➤ HSPXI - HSBC S&P 500 UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ HSTNI - Hansteen Holdings PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ HSVI - HomeServe PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ HSXI - Hiscox Ltd

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HTGL - Hunting PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HUBNz - Huber + Suhner AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ HUFVAs - Hufvudstaden AB

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HUH1Vh - Huhtamaki OYJ

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HUSQAs - Husqvarna AB

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Virtu Financial Ireland Ltd (Program Two)

## ➤ HUSQBs - Husqvarna AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ HWDNI - Howden Joinery Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ HYQd - Hypoport AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ HYm - Lyxor BofAML EUR High Yield Ex-Financial Bond UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ IAEXa - iShares AEX UCITS ETF

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Optiver V.O.F. (Program Two and Three)  
ORA Traders BV (Program Three)

## ➤ IAGe - International Consolidated Airlines Group SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ IAGI - International Consolidated Airlines Group SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ IB1MXx - iShares USD Treasury Bond 0-1yr UCITS ETF

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FlowTraders B.V. (Program Three)

## ➤ IBABb - Ion Beam Applications

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ IBCIm - iShares EUR Inflation Linked Govt Bond UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ IBEXAe - Lyxor IBEX 35 Doble Apalancado Diario UCITS ETF

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Optiver V.O.F. (Program Three)

## ➤ IBEE - Iberdrola SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ IBSTI - Istock PLC

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XTX Markets Limited (Program Three)

## ➤ IBTMm - iShares USD Treasury Bond 7-10yr UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ IBTSm - iShares USD Treasury Bond 1-3yr UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ IBZLm - iShares MSCI Brazil UCITS ETF USD Dist

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Hudson River Trading Europe Limited (Program Three)

## ➤ ICADp - ICADE

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ICAs - ICA Gruppen AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ICPl - Intermediate Capital Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ IDLp - ID Logistics Group

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ IDRe - Indra Sistemas SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ IDUSl - iShares Core S&P 500 UCITS ETF USD Dist

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Optiver V.O.F. (Program Three)

## ➤ IDVYm - iShares Euro Dividend UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ IEACm - iShares Core EUR Corp Bond UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ IEEMl - iShares MSCI EM UCITS ETF USD Dist

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ORA Traders BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

➤ IEEMm - iShares MSCI EM UCITS ETF USD Dist

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Hudson River Trading Europe Limited (Program Two)

➤ IEUXa - iShares MSCI Europe ex-UK UCITS ETF

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Optiver V.O.F. (Program Three)

➤ IEUXl - iShares MSCI Europe ex-UK UCITS ETF

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Optiver V.O.F. (Program Three)

➤ IEUXm - iShares MSCI Europe ex-UK UCITS ETF

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Optiver V.O.F. (Program Two and Three)

➤ IFCNz - Inficon Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

➤ IFXd - Infineon Technologies AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ IFm - Banca IFIS SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
XTX Markets Limited (Program Three)

➤ IGDm - Immobiliare Grande Distribuzione SIIQ SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
XTX Markets Limited (Program Three)

➤ IGGL - IG Group Holdings PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)



## ➤ IGYd - Innogy SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ IGm - Italgas SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
XTX Markets Limited (Program Three)

## ➤ IHG| - InterContinental Hotels Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ IHYGm - iShares EUR High Yield Corp Bond UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ IIAv - IMMOFINANZ AG

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ III| - 3i Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ IJPEa - iShares MSCI Japan EUR Hedged UCITS ETF Acc

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ORA Traders BV (Program Three)

## ➤ IJPEm - iShares MSCI Japan EUR Hedged UCITS ETF Acc

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Hudson River Trading Europe Limited (Program Three)

## ➤ IJPNm - iShares MSCI Japan UCITS ETF USD Dist

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Hudson River Trading Europe Limited (Program Three)

## ➤ ILDp - Iliad SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ IMAEa - iShares Core MSCI Europe UCITS ETF EUR Acc

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Optiver V.O.F. (Program Three)

## ➤ IMAm - IMA Industria Macchine Automatiche SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Qube Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ IMBl - Imperial Brands PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ IMCDa - IMCD NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ IMEUa - iShares Core MSCI Europe UCITS ETF

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Optiver V.O.F. (Program Three)

## ➤ IMEUm - iShares Core MSCI Europe UCITS ETF

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Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)

## ➤ IMIBm - iShares FTSE MIB UCITS ETF EUR Dist

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Hudson River Trading Europe Limited (Program Two)

## ➤ IMII - IMI PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ IMPNz - Implen AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ IMSm - IMMSI SpA

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Hudson River Trading Europe Limited (Program Two)

## ➤ INCHl - Inchcape PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ INDIm - Lyxor MSCI India UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ INDTs - Indutrade AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ INDUAs - Industrivarden AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ INDUCs - Industrivarden AB

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ INDVl - Indivior PLC

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XTX Markets Limited (Program Three)

#### ➤ INFl - Informa PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ INFp - Infotel SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ INGAa - ING Groep NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ INGp - Ingenico Group SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ INHd - Indus Holding AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ INPPl - International Public Partnerships Ltd

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Hudson River Trading Europe Limited (Program Three)

#### ➤ INRNz - Interroll Holding AG

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ INSDp - Inside Secure SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ INTERa - Intertrust NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ INTOb - Interinvest Offices & Warehouses NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ INTRUs - Intrum AB

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ INTUl - Intu Properties PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ INVEAs - Investor AB

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ INVEBs - Investor AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ INVEXe - Lyxor IBEX 35 Inverso Diario UCITS ETF

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Optiver V.O.F. (Program Three)

## ➤ INVPl - Investec PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ INWIs - Inwido AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ INWm - Infrastrutture Wireless Italiane SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ IOLm - Italiaonline SpA

Hudson River Trading Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)

#### ➤ IPFl - International Personal Finance PLC

Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ IPHp - Innate Pharma SA

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ IPNp - Ipsen SA

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ IPOl - IP Group PLC

Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ IPSp - IPSOS

Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ IPm - Interpump Group SpA

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ IR5Bi - Irish Continental Group PLC

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ IRESi - Irish Residential Properties REIT PLC

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ IREm - Iren SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ISATl - Inmarsat PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ISFl - iShares Core FTSE 100 UCITS ETF

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Optiver V.O.F. (Program Three)

## ➤ ISNz - Intershop Holding AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ ISPm - Intesa Sanpaolo SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Jump Trading Europe B.V. (Program Two and Three)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ISRd - Isra Vision AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ISSc - ISS A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ IT3Lm - ETFS 3x Daily Long FTSE MIB

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Hudson River Trading Europe Limited (Program Two)

## ➤ ITAMIm - Lyxor FTSE Italia Mid Cap PIR DR UCITS ETF

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Hudson River Trading Europe Limited (Program Two)

## ➤ ITEI - ITE Group PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ ITMm - Italmobiliare SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Intermonte Sim SPA (Program Two)

## ➤ ITPp - Interparfums SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ ITRKl - Intertek Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ITVl - ITV PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ITXe - Industria de Diseno Textil SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)



➤ IUSAm - iShares Core S&P 500 UCITS ETF USD Dist

Hudson River Trading Europe Limited (Program Two)

➤ IVUd - IVU Traffic Technologies AG

Citadel Securities GCS (Ireland) Limited (Program Three)

➤ IWDEm - iShares MSCI World EUR Hedged UCITS ETF Acc

Hudson River Trading Europe Limited (Program Three)

➤ IWDPI - iShares Developed Markets Property Yield UCITS ETF

Hudson River Trading Europe Limited (Program Three)

➤ IWGI - IWG PLC

Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

➤ IWMOl - iShares Edge MSCI World Momentum Factor UCITS ETF

Hudson River Trading Europe Limited (Program Three)

➤ IWRDm - iShares MSCI World UCITS ETF

Hudson River Trading Europe Limited (Program Three)

➤ IXXd - Traffic Systems SE

Citadel Securities GCS (Ireland) Limited (Program Three)

➤ JAMl - JPMorgan American Investment Trust PLC/Fund

Citadel Securities (Europe) Limited (Program Three)

➤ JCHl - JPMorgan Claverhouse Investment Trust PLC/Fund

Citadel Securities (Europe) Limited (Program Three)

➤ JCQp - Jacquet Metal Service SA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

➤ JDWl - J D Wetherspoon PLC

Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ JDI - JD Sports Fashion PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ JENd - Jenoptik AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ JEI - Just Eat PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
XTX Markets Limited (Program Three)

## ➤ JLGI - John Laing Group PLC

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XTX Markets Limited (Program Three)

## ➤ JMATI - Johnson Matthey PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ JMGI - JPMorgan Emerging Markets Investment Trust plc

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Citadel Securities (Europe) Limited (Program Three)

## ➤ JMTu - Jeronimo Martins SGPS SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ JMs - JM AB

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ JPGII - JPMorgan Global Growth & Income PLC/Fund

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Citadel Securities (Europe) Limited (Program Three)

➤ JPJL - JPJ Group PLC

Hudson River Trading Europe Limited (Program Three)

➤ JPNp - Lyxor Japan TOPIX DR UCITS ETF

Hudson River Trading Europe Limited (Program Three)

➤ JSTd - JOST Werke AG

Hudson River Trading Europe Limited (Program Three)

➤ JUN3d - Jungheinrich AG

Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

➤ JUPL - Jupiter Fund Management PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
XTX Markets Limited (Program Three)

➤ JUSTI - Just Group PLC

XTX Markets Limited (Program Three)

➤ JUSI - Jupiter US Smaller Companies PLC

Citadel Securities (Europe) Limited (Program Three)

➤ JUVEm - Juventus Football Club SpA

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Qube Fund Ltd (Program One)  
Squarepoint Master Fund Ltd (Program One)

➤ JXRp - Archos

Hudson River Trading Europe Limited (Program Three)

➤ JYSKc - Jyske Bank A/S

Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ KARNz - Kardex AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ KAROs - Karo Pharma AB

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Hudson River Trading Europe Limited (Program Three)

#### ➤ KAZI - KAZ Minerals PLC

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Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ KBCAb - KBC Ancora

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ KBCb - KBC Group NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ KBXd - Knorr-Bremse AG

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BNP Paribas Arbitrage SNC (Program One and Three)

#### ➤ KCOMI - KCOM Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ KCOd - Kloeckner & Co SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ KCRh - Konecranes OYJ

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ KEMIRh - Kemira OYJ

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ KENDRa - Kendrion NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ KERp - Kering SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ KESKBh - Kesko OYJ

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ KGFl - Kingfisher PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ KGPl - Kingspan Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ KGXd - KION Group AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ KIEl - Kier Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ KINDs - Kindred Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ KINVBs - Kinnevik AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ KINb - Kinopolis Group NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ KLEDs - Kungsleden AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ KLOVBs - Klovern AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ KLRI - Keller Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ KNEBVh - Kone OYJ

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ KNINz - Kuehne + Nagel International AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ KNp - Natixis SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ KOAo - Kongsberg Automotive ASA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ KOFp - Kaufman & Broad SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ KOG0 - Kongsberg Gruppen ASA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ KOMNz - Komax Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ KORlp - Korian SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ KPNa - Koninklijke KPN NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ KRNd - Krones AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

#### ➤ KRXi - Kingspan Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ KRZi - Kerry Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ KSB3d - KSB SE & Co KGaA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ KSCd - KPS AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ KTCGv - Kapsch TrafficCom AG

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XTX Markets Limited (Program Three)

## ➤ KU2d - KUKA AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ KUDz - Kudelski SA

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ KVAERo - Kvaerner ASA

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ KVWa - Koninklijke Volkerwessels NV

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ KWSd - KWS Saat SE

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ KYGAI - Kerry Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)



#### ➤ LANDL - Land Securities Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ LATOBs - Investment AB Latour

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Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ LATp - Latecoere SACA

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ LBIRDp - Lumibird

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ LBKe - Liberbank SA

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Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ LDOm - Leonardo SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Squarepoint Master Fund Ltd (Program One)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ LDm - La Doria SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)

#### ➤ LEASb - Leasinvest Real Estate SCA

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ LECNz - Leclanche SA

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Citadel Securities (Europe) Limited (Program Three)

## ➤ LEGd - LEG Immobilien AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ LEHNz - LEM Holding SA

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Citadel Securities (Europe) Limited (Program Three)

## ➤ LEHTOh - Lehto Group Oyj

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Hudson River Trading Europe Limited (Program Three)

## ➤ LEId - Leifheit AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ LEMDl - Lyxor MSCI Emerging Markets UCITS ETF

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Virtu Financial Ireland Ltd (Program Two)

## ➤ LEMp - Lyxor MSCI Emerging Markets UCITS ETF

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ORA Traders BV (Program Three)

## ➤ LEONIm - Lyxor Euro Overnight Return UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ LEOd - Leoni AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LEVMIm - Lyxor FTSE MIB Daily 2x Leveraged UCITS ETF

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Hudson River Trading Europe Limited (Program Two)

## ➤ LGENl - Legal & General Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LHAd - Deutsche Lufthansa AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Jump Trading Europe B.V. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LHNp - LafargeHolcim Ltd

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ LHNz - LafargeHolcim Ltd

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LIABs - Lindab International AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ LIFCBs - Lifco AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ LIGHTa - Signify NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
XTX Markets Limited (Program Three)

## ➤ LIND - Linde PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LISNz - Chocoladefabriken Lindt & Spruengli AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)

## ➤ LISPz - Chocoladefabriken Lindt & Spruengli AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ LITm - Retelit SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ Llp - Klepierre SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LKODI - LUKOIL PJSC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ LLBNz - Liechtensteinische Landesbank AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ LLOYl - Lloyds Banking Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LMII - Lonmin PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ LMPI - LondonMetric Property PLC

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XTX Markets Limited (Program Three)

## ➤ LNAp - LNA Sante SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ LNSXd - Sixt Leasing SE

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Hudson River Trading Europe Limited (Program Three)

## ➤ LNTAL - Lenta Ltd

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Hudson River Trading Europe Limited (Program Three)

## ➤ LNZv - Lenzing AG

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LOCALp - Solocal Group

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Hudson River Trading Europe Limited (Program Three)

## ➤ LOGNz - Logitech International SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ LOGe - Cia de Distribucion Integral Logista Holdings SA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ LOILm - ETFS 2X Daily Long Wti Crude Oil

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Hudson River Trading Europe Limited (Program Two)

## ➤ LONNz - Lonza Group AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ LOOKl - Lookers PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ LOOMBs - Loomis AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ LOTBb - Lotus Bakeries NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ LPKd - LPKF Laser & Electronics AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ LQDEI - iShares USD Corp Bond UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ LQQp - Lyxor PEA Nasdaq-100 Daily 2x Leveraged UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ LREI - Lancashire Holdings Ltd

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LRm - Landi Renzo SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ LRp - Legrand SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LSEI - London Stock Exchange Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LSGo - Leroy Seafood Group ASA

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ LSRGI - LSR Group PJSC

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Hudson River Trading Europe Limited (Program Three)

## ➤ LSSp - Lectra

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ LTODI - Larsen & Toubro Ltd

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ LUCs - Lucara Diamond Corp

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Hudson River Trading Europe Limited (Program Three)

## ➤ LUKNz - Luzerner Kantonalbank AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ LUMIs - Lundin Mining Corp

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ LUNDBs - L E Lundbergforetagen AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LUNc - H Lundbeck A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LUPes - Lundin Petroleum AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Optiver V.O.F. (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LVCp - Lyxor CAC 40 Daily 2x Leveraged UCITS ETF

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Optiver V.O.F. (Program Two and Three)  
ORA Traders BV (Program Three)

## ➤ LVDp - Lyxor Daily LevDAX UCITS ETF

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ORA Traders BV (Program Three)

## ➤ LVEp - Lyxor EURO STOXX 50 Daily 2x Leveraged UCITS ETF

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ORA Traders BV (Program Three)

## ➤ LWDBI - Law Debenture Corp PLC/fund

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Citadel Securities (Europe) Limited (Program Three)

## ➤ LXSd - LANXESS AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ LYM8d - Lyxor World Water UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ LYXIBe - Lyxor IBEX 35 DR UCITS ETF

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Optiver V.O.F. (Program Three)

## ➤ LYY7d - Lyxor DAX DR UCITS ETF

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Optiver V.O.F. (Program Three)

## ➤ M5Zd - Manz AG

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Citadel Securities GCS (Ireland) Limited (Program Three)



## ➤ MABl - Mitchells & Butlers PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MAERAc - AP Moller - Maersk A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MAERBc - AP Moller - Maersk A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MAN3d - MAN SE

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ MAND - MAN SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MAPe - Mapfre SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MARRm - MARR SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MARSl - Marston's PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ MAsE - Masmovil Ibercom SA

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Hudson River Trading Europe Limited (Program Three)

## ➤ MATASc - Matas A/S

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Hudson River Trading Europe Limited (Program Three)

## ➤ MAUp - Etablissements Maurel et Prom

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ MBBd - MBB SE

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ MBTNz - Meyer Burger Technology AG

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ MBWSp - Marie Brizard Wine & Spirits SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ MBm - Mediobanca Banca di Credito Finanziario SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MCOVBs - Medcover AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ MCROl - Micro Focus International PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ MCSl - McCarthy & Stone PLC

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XTX Markets Limited (Program Three)

## ➤ MCp - LVMH Moet Hennessy Louis Vuitton SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MDCl - Mediclinic International PLC

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XTX Markets Limited (Program Three)

## ➤ MDG1d - Medigene AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ MDMp - Maisons du Monde SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ MDWp - Mediawan SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ MDXHb - MDxHealth

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ MEKOs - Mekonomen AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ MELEb - Melexis NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ MELe - Melia Hotels International SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ MERLI - Merlin Entertainments PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
XTX Markets Limited (Program Three)

## ➤ MERYp - Mercialys SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ METNz - Metall Zug AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ METSBh - Metsa Board OYJ

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ METSOh - Metso OYJ

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MEUDp - Lyxor Core STOXX Europe 600 DR

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Hudson River Trading Europe Limited (Program Three)

## ➤ MEUp - Lyxor MSCI Europe DR UCITS ETF

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Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)  
ORA Traders BV (Program Three)

## ➤ MFp - Wendel SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MGAMl - Morgan Advanced Materials PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MGGTl - Meggitt PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MGNSl - Morgan Sindall Group PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ MGNTl - Magnit PJSC

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XTX Markets Limited (Program Three)

## ➤ MHIDL - Mahindra & Mahindra Ltd

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Hudson River Trading Europe Limited (Program Three)

## ➤ MIKNz - Mikron Holding AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ MINGo - SpareBank 1 SMN

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ MITRAb - Mithra Pharmaceuticals SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ MKEAp - Mauna Kea Technologies

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ MKSl - Marks & Spencer Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MLCl - Millennium & Copthorne Hotels PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ MLMm - Molecular Medicine SPA

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Hudson River Trading Europe Limited (Program Two)

## ➤ MLPd - MLP SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ MLp - Cie Generale des Etablissements Michelin SCA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MMBp - Lagardere SCA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MMKv - Mayr Melnhof Karton AG

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Virtu Financial Ireland Ltd (Program Two)

## ➤ MMSp - Lyxor MSCI EMU Small Cap DR UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ MMTp - Metropole Television SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MNDI - Mondi PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MNKSI - Monks Investment Trust PLC/The

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ MNODI - MMC Norilsk Nickel PJSC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ MNPL - Martin Currie Global Portfolio Trust PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ MNZSI - John Menzies PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ MNm - Arnaldo Mondadori Editore SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MOBNz - Mobimo Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ MOLm - Gruppo MutuiOnline SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ MONCm - Moncler SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MONTb - Montea C.V.A

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ MONYI - Moneysupermarket.com Group PLC

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XTX Markets Limited (Program Three)

## ➤ MORd - MorphoSys AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MOZNz - Mobilezone Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ MRCHl - Merchants Trust PLC/The

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Citadel Securities (Europe) Limited (Program Three)

## ➤ MRCl - Mercantile Investment Trust PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ MRKd - Merck KGaA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MRLe - Merlin Properties Socimi SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ MRNp - Mersen SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ MROl - Melrose Industries PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)



## ➤ MRWL - Wm Morrison Supermarkets PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MSAGd - MS Industrie AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ MSEm - Lyxor EURO STOXX 50 DR UCITS ETF

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Hudson River Trading Europe Limited (Program Two)

## ➤ MSEp - Lyxor EURO STOXX 50 DR UCITS ETF

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Optiver V.O.F. (Program Two and Three)  
ORA Traders BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ MSLHI - Marshalls PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ MSm - Mediaset SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Qube Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MTGBs - Modern Times Group MTG AB

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MTGz - Meier Tobler Group AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ MTOL - Mitie Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MTROl - Metro Bank PLC

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XTX Markets Limited (Program Three)

## ➤ MTRSs - Munters Group AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ MTSe - ArcelorMittal

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BNP Paribas Arbitrage SNC (Program One and Three)  
Optiver V.O.F. (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ MTUp - Manitou BF SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ MTVm - Mondo TV SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ MTXd - MTU Aero Engines AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MTa - ArcelorMittal

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MTm - Maire Tecnimont SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Qube Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MUBd - Muehlbauer Holding AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ MUMd - Mensch und Maschine Software SE

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ MUV2d - Muenchener Rueckversicherungs-Gesellschaft AG in Muenchen

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ MUXd - mutares AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ MVEUm - iShares Edge MSCI Europe Minimum Volatility UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ MVOLL - iShares Edge MSCI World Minimum Volatility UCITS ETF

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ MXHNd - MAX Automation SE

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ MYCRs - Mycronic AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ MYII - Murray International Trust PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ N7Gd - Nanogate SE

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ NANOl - Nanoco Group PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ NANOo - Nordic Nanovector ASA

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Hudson River Trading Europe Limited (Program Three)

## ➤ NANOp - Nanobiotix

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ NASo - Norwegian Air Shuttle ASA

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NBLSI - NB Global Floating Rate Income Fund Ltd

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Hudson River Trading Europe Limited (Program Three)

## ➤ NC5Ad - NorCom Information Technology GmbH & Co KGaA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ NCCBs - NCC AB

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NCCI - NCC Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NDAc - Nordea Bank Abp

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NDAd - Aurubis AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NDAs - Nordea Bank Abp

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BNP Paribas Arbitrage SNC (Program One and Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NDX1d - Nordex SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ NDXHp - Amundi Nasdaq-100 UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ NEDAPa - Nederland Apparatenfabriek

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ NEMd - Nemetschek SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NEOENp - Neoen SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ NEOp - Neopost SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ NESNz - Nestle SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NESRd - Nestle SA

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Optiver V.O.F. (Program Three)

## ➤ NESTEh - Neste Oyj

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BNP Paribas Arbitrage SNC (Program One and Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NETBs - NetEnt AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NEWABs - New Wave Group AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ NEXIm - Nexi SpA

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Optiver V.O.F. (Program Two and Three)

## ➤ NEXI - National Express Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NEXp - Nexans SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NGI - National Grid PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NHHe - NH Hotel Group SA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NHYo - Norsk Hydro ASA

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Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NIBCa - NIBC Holding NV

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ NIBEBs - Nibe Industrier AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NKTc - NKT A/S

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NKp - Imerys SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NMCI - NMC Health PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NNa - NN Group NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NOBINS - Nobina AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NOBIs - Nobia AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NODo - Nordic Semiconductor ASA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NOEJd - Norma Group SE

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Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NOKIAh - Nokia OYJ

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NOKIAp - Nokia OYJ

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NOKIAs - Nokia OYJ

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Optiver V.O.F. (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ NOLABs - Nolato AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ NONGo - SpareBank 1 Nord Norge

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NOSu - NOS SGPS SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NOTd - Novartis AG

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Optiver V.O.F. (Program Three)



## ➤ NOVNz - Novartis AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NOVOBc - Novo Nordisk A/S

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Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NPROo - Norwegian Property ASA

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Virtu Financial Ireland Ltd (Program Two)

## ➤ NRRI - NewRiver REIT PLC

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XTX Markets Limited (Program Three)

## ➤ NRSo - Norway Royal Salmon ASA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NSIa - NSI NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ NTGYe - Naturgy Energy Group SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ NTGI - Northgate PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NVGu - Navigator Co SA/The

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ NVTkl - Novatek PJSC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ NXlp - Nexity SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NXTl - Next PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ NXUd - Nexus AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ NYRb - Nyrstar NV

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Virtu Financial Ireland Ltd (Program Two)

## ➤ NZYMBc - Novozymes A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ O1BCd - XING SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ O2Cd - Petro Welt Technologies AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ O2Dd - Telefonica Deutschland Holding AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ OBELb - Orange Belgium SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ OCD0I - Ocado Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ OC1a - OCI NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ OCYo - Ocean Yield ASA

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Hudson River Trading Europe Limited (Program Three)

## ➤ ODETp - Financiere de L'Odet SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ODHNz - Orascom Development Holding AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ ODL0 - Odfjell Drilling Ltd

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Hudson River Trading Europe Limited (Program Three)

## ➤ OERLz - OC Oerlikon Corp AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ OGZDI - Gazprom PJSC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ OHBd - OHB SE

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ OHLe - Obrascon Huarte Lain SA

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ OIL3Lm - SG ETC WTI Oil +3X Daily Leveraged Collateralized

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Hudson River Trading Europe Limited (Program Three)

## ➤ OILp - Lyxor STOXX Europe 600 Oil & Gas UCITS ETF

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Hudson River Trading Europe Limited (Program Three)  
ORA Traders BV (Program Three)

## ➤ OIZi - Origin Enterprises PLC

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ OJMm - Openjobmetis Spa agenzia per il lavoro

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ OKDAVh - Oriola Oyj

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Virtu Financial Ireland Ltd (Program Two)

## ➤ OKDBVh - Oriola Oyj

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Hudson River Trading Europe Limited (Program Three)

## ➤ OMUI - Old Mutual Ltd

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ OMVv - OMV AG

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Optiver V.O.F. (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ONTEXb - Ontex Group NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ ONXEOp - Onxeo SA

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Hudson River Trading Europe Limited (Program Three)

#### ➤ OPNp - Groupe Open

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ ORAp - Orange SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ORDla - Ordina NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

#### ➤ ORIs - Oriflame Holding AG

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ORKo - Orkla ASA

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ORNAVh - Orion Oyj

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ORNBVh - Orion Oyj

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ORONz - Orior AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ ORPp - Orpea

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ ORSTEc - Orsted A/S

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Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ ORp - L'Oreal SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ OSBl - OneSavings Bank PLC

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XTX Markets Limited (Program Three)

#### ➤ OSP2d - USU Software AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ OSRd - OSRAM Licht AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ OTBl - On the Beach Group PLC

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Hudson River Trading Europe Limited (Program Three)

➤ OTE1Vh - Outotec OYJ

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ OTELLo - Otello Corp ASA

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

➤ OUT1Vh - Outokumpu OYJ

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ OVSm - OVS SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
XTX Markets Limited (Program Three)

➤ OXBl - Oxford Biomedica PLC

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Citadel Securities (Europe) Limited (Program Three)

➤ OXIGl - Oxford Instruments PLC

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Citadel Securities (Europe) Limited (Program Three)

➤ OXURb - Oxurion NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

➤ P2Pl - P2P Global Investments PLC/Fund

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Hudson River Trading Europe Limited (Program Three)

➤ PA8d - Paion AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

➤ PAALBc - Per Aarsleff Holding A/S

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Hudson River Trading Europe Limited (Program Three)

## ➤ PAGEI - Pagegroup PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ PAGI - Paragon Banking Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ PAH3d - Porsche Automobil Holding SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ PALv - Palfinger AG

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Virtu Financial Ireland Ltd (Program Two)

## ➤ PANm - Panariagroup Industrie Ceramiche SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ PARGz - Pargesa Holding SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
ORA Traders BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ PARROp - Parrot SA

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Hudson River Trading Europe Limited (Program Three)

## ➤ PATd - PATRIZIA AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ PAYI - PayPoint PLC

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Citadel Securities (Europe) Limited (Program Three)



## ➤ PBBd - Deutsche Pfandbriefbank AG

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Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ PCTI - Polar Capital Technology Trust PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ PDGI - Pendragon PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ PDLI - Petra Diamonds Ltd

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XTX Markets Limited (Program Three)

## ➤ PEABBs - Peab AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ PETSJ - Pets at Home Group Plc

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XTX Markets Limited (Program Three)

## ➤ PFCL - Petrofac Ltd

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ PFDI - Premier Foods PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ PFGI - Provident Financial PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ PFVd - Pfeiffer Vacuum Technology AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ PGHNz - Partners Group Holding AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ PGNd - Paragon GmbH & Co KGaA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ PGSo - PGS ASA

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ PHAUm - ETFS Physical Gold

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Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)

## ➤ PHAp - Pharmagest Inter@ctive

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ PHIAa - Koninklijke Philips NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ PHMe - Pharma Mar SA

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Hudson River Trading Europe Limited (Program Three)

## ➤ PHNXI - Phoenix Group Holdings PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ PHPl - Primary Health Properties PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ PHTMl - Photo-Me International PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ PIAm - Piaggio & C SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ PIGp - Haulotte Group SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ PINFm - Pininfarina SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ PINl - Pantheon International PLC/The Fund

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Citadel Securities (Europe) Limited (Program Three)

## ➤ PIRcm - Pirelli & C SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Squarepoint Master Fund Ltd (Program One)

## ➤ PLlI - Perpetual Income and Growth Investment Trust PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ PMOl - Premier Oil PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ PMz - Phoenix Mecano AG

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ PNDORc - Pandora A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ PNDXBs - Pandox AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ PNE3d - PNE AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ PNLa - PostNL NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ PNLl - Personal Assets Trust PLC/Fund

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ PNNl - Pennon Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ POGl - Petropavlovsk PLC

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ POLYl - Polymetal International PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Optiver V.O.F. (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

#### ➤ POLm - Poligrafici Editoriale SpA

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Hudson River Trading Europe Limited (Program Two)

## ➤ POMp - Cie Plastic Omnium SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ POSTv - Oesterreichische Post AG

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ POXELp - Poxel SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ POY1Vh - Poyry OYJ

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Virtu Financial Ireland Ltd (Program Two)

## ➤ PRCp - Artprice.com

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ PRIm - Prima Industrie SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ PROXb - Proximus SADP

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ PROM - Banca Profilo SpA

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Hudson River Trading Europe Limited (Program Two)

## ➤ PRSe - Promotora de Informaciones SA

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Virtu Financial Ireland Ltd (Program Two)

## ➤ PRSo - Prosafe SE

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XTX Markets Limited (Program Three)

#### ➤ PRTm - Esprinet SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ PRUI - Prudential PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ PRYm - Prysmian SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ PSANd - PSI Software AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ PSGe - Prosegur Cia de Seguridad SA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ PSMd - ProSiebenSat.1 Media SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ PSNI - Persimmon PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ PSONI - Pearson PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ PSPNz - PSP Swiss Property AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ PSTm - Poste Italiane SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Squarepoint Master Fund Ltd (Program One)  
 XTX Markets Limited (Program Three)

#### ➤ PTECI - Playtech Plc

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Citadel Securities (Europe) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ PUBp - Publicis Groupe SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ PUMd - Puma SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ PVLp - Plastivaloire

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ PWTNz - Panalpina Welttransport Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ PZCl - PZ Cussons PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ QDIVI - iShares MSCI USA Quality Dividend UCITS ETF

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Virtu Financial Ireland Ltd (Program Two)

## ➤ QIAd - QIAGEN NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ QLTI - Quilter PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ QQI - QinetiQ Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ QSCd - QSC AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ R6Cd - Royal Dutch Shell PLC

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Optiver V.O.F. (Program Three)

## ➤ RAAAd - Rational AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)



#### ➤ RACEm - Ferrari NV

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Squarepoint Master Fund Ltd (Program One)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ RAIWh - Raisio Oyj

Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ RALp - Rallye SA

Citadel Securities GCS (Ireland) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)

#### ➤ RAMIh - Ramirent OYJ

Hudson River Trading Europe Limited (Program Three)

#### ➤ RAMu - Ramada Investimentos E Industria SA

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ RANDa - Randstad NV

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ RATOBS - Ratos AB

Hudson River Trading Europe Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ RATI - Rathbone Brothers PLC

Citadel Securities (Europe) Limited (Program Three)

#### ➤ RAYBs - RaySearch Laboratories AB

Hudson River Trading Europe Limited (Program Three)

## ➤ RBIV - Raiffeisen Bank International AG

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ RBREWc - Royal Unibrew A/S

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ RBSI - Royal Bank of Scotland Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ RBTp - Robertet SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ RBL - Reckitt Benckiser Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ RCOp - Remy Cointreau SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ RCPI - RIT Capital Partners PLC/Fund

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

#### ➤ RCSm - Rizzoli Corriere Della Sera Mediagroup SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ RDII - RDI REIT PLC

Citadel Securities (Europe) Limited (Program Three)

#### ➤ RDSAa - Royal Dutch Shell PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Three)  
 Societe Generale London Branch (Program Three)  
 UTR8 BV (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ RDSAi - Royal Dutch Shell PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe Limited (Program Two)  
 UTR8 BV (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ RDSBa - Royal Dutch Shell PLC

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ RDSBI - Royal Dutch Shell PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe Limited (Program Two)  
 UTR8 BV (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ RDWL - Redrow PLC

Citadel Securities (Europe) Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ RECIBs - Recipharm AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ RECb - Recticel SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ RECM - Recordati SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RECo - REC Silicon ASA

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ REEe - Red Electrica Corp SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RELI - RELX PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RENEu - REN - Redes Energeticas Nacionais SGPS SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RENa - RELX PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 UTR8 BV (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ REPe - Repsol SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ RESURs - Resurs Holding AB

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Hudson River Trading Europe Limited (Program Three)

#### ➤ RESb - Resilux

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ RETb - Retail Estates NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)

#### ➤ REYm - Reply SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Qube Fund Ltd (Program One)

#### ➤ RFp - Eurazeo SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ RHKd - RHOEN-KLINIKUM AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ RHMd - Rheinmetall AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ RIENZ - Rieter Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ RIGDI - Reliance Industries Ltd

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Citadel Securities (Europe) Limited (Program Three)

## ➤ RILBAc - Ringkjoebing Landbobank A/S

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Hudson River Trading Europe Limited (Program Three)

## ➤ RINp - Vilmorin & Cie SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ RIOI - Rio Tinto PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ Rlp - Pernod Ricard SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ RKETd - Rocket Internet SE

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XTX Markets Limited (Program Three)

#### ➤ RMGL - Royal Mail PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ RMsP - Hermes International

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RML - Rightmove PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RMm - Reno de Medici SpA

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Hudson River Trading Europe Limited (Program Two)

#### ➤ RNKl - Rank Group PLC

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ RNOp - Renault SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RNm - Risanamento SpA

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Hudson River Trading Europe Limited (Program Three)

#### ➤ ROBOm - L&G ROBO Global Robotics and Automation UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ ROCKBc - Rockwool International A/S

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ ROGz - Roche Holding AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ RORl - Rotork PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ROSNl - Rosneft Oil Co PJSC

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XTX Markets Limited (Program Three)

## ➤ ROTHp - Rothschild & Co

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ROVIOh - Rovio Entertainment Oyj

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Hudson River Trading Europe Limited (Program Three)

## ➤ ROz - Roche Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)

## ➤ RPCl - RPC Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
XTX Markets Limited (Program Three)

## ➤ RPSl - RPS Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)



#### ➤ RRTLd - RTL Group SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ RRI - Rolls-Royce Holdings PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RSAI - RSA Insurance Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RSWL - Renishaw PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ RTNI - Restaurant Group PLC/The

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RTOI - Rentokil Initial PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RUIp - Rubis SCA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RUSm - Lyxor MSCI Russia UCITS ETF

Hudson River Trading Europe Limited (Program Three)

#### ➤ RWAYm - RAI Way SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RWE3d - RWE AG

Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

#### ➤ RWEEd - RWE AG

BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RWII - Renewi PLC

Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ RXLp - Rexel SA

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ RXp - Recylex SA

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ RY4Ci - Ryanair Holdings PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

#### ➤ RYAI - Ryanair Holdings PLC

Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ S7XEd - Invesco EURO STOXX Optimised Banks UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ S92d - SMA Solar Technology AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SAA1Vh - Sanoma OYJ

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SAABBs - Saab AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SABe - Banco de Sabadell SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SABm - Sabaf SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SAFEI - Safestore Holdings PLC

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XTX Markets Limited (Program Three)

## ➤ SAFp - Safran SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SAGAl - Saga PLC

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XTX Markets Limited (Program Three)

## ➤ SAHNz - Schaffner Holding AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ SALMo - Salmar ASA

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SALm - Salini Impregilo SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SAMPOh - Sampo Oyj

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SANDs - Sandvik AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SANNz - Santhera Pharmaceuticals Holding AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ SANTd - S&T AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SANE - Banco Santander SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ SANp - Sanofi

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SAPd - SAP SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Jump Trading Europe B.V. (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SASs - SAS AB

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Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ SAXd - Stroeer SE & Co KGaA

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Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ SBANKo - Sbanken ASA

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Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ SBERI - Sberbank of Russia PJSC

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XTX Markets Limited (Program Three)

#### ➤ SBIDL - State Bank of India

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Citadel Securities (Europe) Limited (Program Three)

## ➤ SBMOa - SBM Offshore NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SBOo - Selvaag Bolig ASA

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Hudson River Trading Europe Limited (Program Three)

## ➤ SBOv - Schoeller-Bleckmann Oilfield Equipment AG

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SBRYl - J Sainsbury PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SBSd - STRATEC SE

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SBTp - Oeneo SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SC0Dd - Invesco EURO STOXX 50 UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ SCABs - Svenska Cellulosa AB SCA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SCHAo - Schibsted ASA

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ SCHBo - Schibsted ASA

Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ SCHNz - Schindler Holding AG

Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 ORA Traders BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ SCHOc - Schouw & Co A/S

Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ SCHPp - Seche Environnement SA

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ SCHPz - Schindler Holding AG

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ SCINl - Scottish Investment Trust PLC

Citadel Securities (Europe) Limited (Program Three)

#### ➤ SCMNz - Swisscom AG

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe Limited (Program Two)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SCRp - SCOR SE

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ SCYRe - Sacyr SA

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SDFd - K+S AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ SDGp - Synergie SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ SDHYL - iShares USD Short Duration High Yield Corp Bond UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ SDLI - SDL PLC

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Virtu Financial Ireland Ltd (Program Two)

## ➤ SDPl - Schroder AsiaPacific Fund PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ SDRCl - Schroders PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ SDRYl - Superdry PLC

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Virtu Financial Ireland Ltd (Program Two)

## ➤ SDRI - Schroders PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)



## ➤ SEBAs - Skandinaviska Enskilda Banken AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SECUBs - Securitas AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SEMLm - iShares JP Morgan EM Local Government Bond UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ SEMu - Semapa-Sociedade de Investimento e Gestao

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ SEMv - Semperit AG Holding

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Virtu Financial Ireland Ltd (Program Two)

## ➤ SESGp - SES SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SESLp - SES-imagotag SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ SESm - Sesa SpA

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Hudson River Trading Europe Limited (Program Three)

## ➤ SEVp - Suez

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SFERm - Salvatore Ferragamo SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SFLm - Safilo Group SpA

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Hudson River Trading Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SFQd - SAF-Holland SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SFSNz - SFS Group AG

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Hudson River Trading Europe Limited (Program Three)

## ➤ SFZNz - Siegfried Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ SGCl - Stagecoach Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ SGEI - Sage Group PLC/The

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SGGDI - Surgutneftegas PJSC

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XTX Markets Limited (Program Three)

#### ➤ SGKNz - St Galler Kantonalbank AG

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ SGLDz - Invesco Physical Gold ETC

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Optiver V.O.F. (Program Three)

#### ➤ SGLd - SGL Carbon SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SGOp - Cie de Saint-Gobain

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SGREe - Siemens Gamesa Renewable Energy SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ SGROl - Segro PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SGRm - SAES Getters SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SGSNz - SGS SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SGM - SAES Getters SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ SHAd - Schaeffler AG

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IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SHBAs - Svenska Handelsbanken AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SHBl - Shaftesbury PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SHCp - Lyxor CAC 40 Daily -1x Inverse UCITS ETF

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Hudson River Trading Europe Limited (Program Three)  
ORA Traders BV (Program Three)

## ➤ SHFd - SNP Schneider-Neureither & Partner SE

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SHII - SIG PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SHLd - Siemens Healthineers AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)

## ➤ SHOTs - Scandic Hotels Group AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SHURb - Shurgard Self Storage SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SIAI - Soco International PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ SIEd - Siemens AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SIFGa - SIF Holding NV

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SIGHTp - GenSight Biologics SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ SIKAz - Sika AG

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)

#### ➤ SIMc - SimCorp A/S

Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ SIOEb - Sioen Industries NV

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ SIPb - Sipef NV

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ SISd - First Sensor AG

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ SISm - Societa Iniziative Autostradali e Servizi SpA

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ SIX2d - Sixt SE

Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ SIX3d - Sixt SE

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ SJPAm - iShares Core MSCI Japan IMI UCITS ETF

Hudson River Trading Europe Limited (Program Three)

## ➤ SK3i - Smurfit Kappa Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ SKABs - Skanska AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SKBd - Koenig & Bauer AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SKFBs - SKF AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SKGl - Smurfit Kappa Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SKp - SEB SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SLAI - Standard Life Aberdeen PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SLBp - Schlumberger Ltd

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ SLHNz - Swiss Life Holding AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ SLIGRa - Sligro Food Group NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)

#### ➤ SLTd - Schaltbau Holding AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ SMCPp - SMCP SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)

#### ➤ SMDSl - DS Smith PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SMEAm - iShares Core MSCI Europe UCITS ETF EUR Acc

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Hudson River Trading Europe Limited (Program Three)  
 Optiver V.O.F. (Program Three)

#### ➤ SMHNd - SUESS MicroTec SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ SMICZz - UBS ETF CH-SMI

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Optiver V.O.F. (Program Three)



## ➤ SMINL - Smiths Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SMPL - St Modwen Properties PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SMSNI - Samsung Electronics Co Ltd

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SMTI - Scottish Mortgage Investment Trust PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ SMWHL - WH Smith PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SNBNz - Schweizerische Nationalbank

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Citadel Securities (Europe) Limited (Program Three)

## ➤ SNGd - Singulus Technologies AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SNlo - Stolt-Nielsen Ltd

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SNNI - Sanne Group PLC

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Hudson River Trading Europe Limited (Program Three)

## ➤ SNRI - Senior PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ SNL - Smith & Nephew PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ SOBIs - Swedish Orphan Biovitrum AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ SOFb - Sofina SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ SOIp - SOITEC

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ SOLBb - Solvay SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ SOLGI - SolGold PLC

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Hudson River Trading Europe Limited (Program Three)

#### ➤ SOLm - SOL SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

#### ➤ SONCu - Sonae Capital SGPS SA

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Hudson River Trading Europe Limited (Program Three)

#### ➤ SONu - Sonae SGPS SA

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SOONz - Sonova Holding AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SOPHl - Sophos Group PLC

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XTX Markets Limited (Program Three)

## ➤ SOPp - Sopra Steria Group

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SOWd - Software AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SOM - Sogefi SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SOP - Somfy SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ SPDI - Sports Direct International PLC

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SPIEp - SPIE SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SPII - Spire Healthcare Group PLC

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XTX Markets Limited (Program Three)

#### ➤ SPMm - Saipem SpA

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Squarepoint Master Fund Ltd (Program One)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SPNOc - Spar Nord Bank A/S

Hudson River Trading Europe Limited (Program Three)

#### ➤ SPRd - Axel Springer SE

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SPSNz - Swiss Prime Site AG

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ SPTl - Spirent Communications PLC

Citadel Securities (Europe) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)

#### ➤ SPXHm - Lyxor S&P 500 UCITS ETF

Hudson River Trading Europe Limited (Program Three)

#### ➤ SPXl - Spirax-Sarco Engineering PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SPXm - Lyxor S&P 500 UCITS ETF

Hudson River Trading Europe Limited (Program Three)

## ➤ SPY5m - SPDR S&P 500 UCITS ETF

Hudson River Trading Europe Limited (Program Three)

## ➤ SQUIp - Sqli SA

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SQNZ - Swissquote Group Holding SA

Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ SRBANo - SpareBank 1 SR-Bank ASA

XTX Markets Limited (Program Three)

## ➤ SRCGz - Sunrise Communications Group AG

BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ SREll - Schroder Real Estate Investment Trust Ltd

Citadel Securities (Europe) Limited (Program Three)

## ➤ SRENz - Swiss Re AG

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SRGm - Snam SpA

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Tower Research Capital Europe BV (Program Two)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SRIm - Servizi Italia SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SRPI - Serco Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SRPp - SRP Groupe SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ SRSm - Saras SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SRT3d - Sartorius AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)

## ➤ SRTd - Sartorius AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SSABAs - SSAB AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SSABBs - SSAB AB

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SSAI - Sistema PJSFC

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ SSEI - SSE PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe Limited (Program Two)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SSLm - Societa Sportiva Lazio SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)

#### ➤ SSOo - Scatec Solar ASA

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Hudson River Trading Europe Limited (Program Three)

#### ➤ SSPGI - SSP Group Plc

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BNP Paribas Arbitrage SNC (Program One and Three)  
 XTX Markets Limited (Program Three)

#### ➤ ST5d - Steico SE

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ STANI - Standard Chartered PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ STBo - Storebrand ASA

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Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ STCBVh - Stockmann OYJ Abp

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XTX Markets Limited (Program Three)

#### ➤ STEFm - Stefanel SpA

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Hudson River Trading Europe Limited (Program Three)

## ➤ STERVh - Stora Enso OYJ

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BNP Paribas Arbitrage SNC (Program One and Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ STERs - Stora Enso OYJ

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ STFp - Stef SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ STGc - Scandinavian Tobacco Group A/S

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XTX Markets Limited (Program Three)

## ➤ STHEm - PIMCO Short-Term High Yield Corporate Bond Index Source UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ STHRI - STThree PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ STJl - St James's Place PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ STLNz - Schmolz + Bickenbach AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ STMNz - Straumann Holding AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)



## ➤ STMd - Stabilus SA

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ STMm - STMicroelectronics NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ STMp - STMicroelectronics NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ STO3d - STO SE & Co KGaA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ STObI - Stobart Group Ltd

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Hudson River Trading Europe Limited (Program Three)

## ➤ STRNa - Stern Groep NV

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ STRv - Strabag SE

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Virtu Financial Ireland Ltd (Program Two)

## ➤ STSl - Securities Trust of Scotland PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ STWp - SPDR MSCI Europe Health Care UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

#### ➤ STZp - SPDR MSCI Europe Financials UCITS ETF

Hudson River Trading Europe Limited (Program Three)

#### ➤ SUBCo - Subsea 7 SA

Optiver V.O.F. (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SUNz - Sulzer AG

Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ SURd - Surteco Group SE

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ SUP - Schneider Electric SE

BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ SVSTI - Severstal PJSC

XTX Markets Limited (Program Three)

#### ➤ SVSI - Savills PLC

Citadel Securities (Europe) Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ SVTL - Severn Trent PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ SWDAm - iShares Core MSCI World UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ SWECBs - Sweco AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ SWEDAs - Swedbank AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SWMAs - Swedish Match AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SWPp - Sword Group

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ SWp - Sodexo SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SX7EEz - iShares EURO STOXX Banks 30-15 UCITS ETF DE

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Optiver V.O.F. (Program Three)

## ➤ SXSl - Spectris PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ SXXl - Sirius Minerals PLC

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ SY1d - Symrise AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ SYDBc - Sydbank A/S

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ SYNTI - Synthomer PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ SYTd - Softing AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ SZGd - Salzgitter AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ SZUd - Suedzucker AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

#### ➤ T7Oi - Total Produce PLC

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ TALKI - TalkTalk Telecom Group PLC

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ TAMNz - Tamedia AG

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Citadel Securities (Europe) Limited (Program Three)

➤ **TASm - Tas Tecnologia Avanzata dei Sistemi SpA**

Hudson River Trading Europe Limited (Program Two)

➤ **TATEL - Tate & Lyle PLC**

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ **TC1d - Tele Columbus AG**

Hudson River Trading Europe Limited (Program Three)

➤ **TCAPL - TP ICAP PLC**

Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ **TCGI - Thomas Cook Group PLC**

Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ **TCHp - Technicolor SA**

Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ **TDTa - Think AEX UCITS ETF**

Hudson River Trading Europe Limited (Program Three)

➤ **TECNz - Tecan Group AG**

BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

➤ **TEDI - Ted Baker PLC**

XTX Markets Limited (Program Three)

#### ➤ TEFe - Telefonica SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ TEGd - TAG Immobilien AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ TEL2Bs - Tele2 AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ TELIAh - Telia Co AB

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Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ TELIAs - Telia Co AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ TELo - Telenor ASA

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Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ TEMNz - Temenos AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ TEMl - Templeton Emerging Markets Investment Trust PLC

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Citadel Securities (Europe) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)

## ➤ TENm - Tenaris SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TEPl - Telecom Plus PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ TEPp - Teleperformance

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)

## ➤ TESBb - Tessengerlo Group SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ TFGa - Tetragon Financial Group Ltd

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Hudson River Trading Europe Limited (Program Three)

## ➤ TFIIm - TREVI - Finanziaria Industriale SpA

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Hudson River Trading Europe Limited (Program Two)

## ➤ TFIp - Television Francaise 1

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TGSo - TGS NOPEC Geophysical Co ASA

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Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TGYMm - Technogym SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Qube Fund Ltd (Program One)

## ➤ THEPp - Thermador Groupe

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ THULEs - Thule Group AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ TIK1Vh - Tikkurila Oyj

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Hudson River Trading Europe Limited (Program Three)

## ➤ TIMd - Zeal Network SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ TINCb - TINC Comm VA

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ TIPm - Tamburi Investment Partners SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)

## ➤ TISm - Tiscali SpA

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Hudson River Trading Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ TITRm - Telecom Italia SpA/Milano

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Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)



## ➤ TITm - Telecom Italia SpA/Milano

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Squarepoint Master Fund Ltd (Program One)  
 UTR8 BV (Program Two and Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ TKAd - thyssenkrupp AG

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ TKAv - Telekom Austria AG

Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ TKOp - Tikehau Capital SCA

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ TKTTp - Tarkett SA

Citadel Securities GCS (Ireland) Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 XTX Markets Limited (Program Three)

## ➤ TKWYa - Takeaway.com NV

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ TL5e - Mediaset Espana Comunicacion SA

BNP Paribas Arbitrage SNC (Program One and Three)  
 Hudson River Trading Europe Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ TLGOe - Talgo SA

Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

## ➤ TLGd - TLG Immobilien AG

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XTX Markets Limited (Program Three)

## ➤ TLWI - Tullow Oil PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TLXd - Talanx AG

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TMPLI - Temple Bar Investment Trust PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ TNETb - Telenet Group Holding NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TNGp - Transgene SA

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Hudson River Trading Europe Limited (Program Three)

## ➤ TNXTm - Tinexta Spa

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ TOBII - Tobii AB

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Hudson River Trading Europe Limited (Program Three)

## ➤ TODm - Tod's SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Qube Fund Ltd (Program One)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TOKMAh - Tokmanni Group Corp

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Hudson River Trading Europe Limited (Program Three)

## ➤ TOM2a - TomTom NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TOMo - Tomra Systems ASA

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TOPc - Topdanmark A/S

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Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TPED - PVA TePla AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ TPKI - Travis Perkins PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TPXEp - Amundi Japan Topix UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ TPXHm - Amundi Japan Topix UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ TPZe - Telepizza Group SA

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Hudson River Trading Europe Limited (Program Three)

## ➤ TRELBS - Trelleborg AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TREe - Tecnicas Reunidas SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ TRIGI - Renewables Infrastructure Group Ltd/The

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Hudson River Trading Europe Limited (Program Three)

## ➤ TRIp - Trigano SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ TRMDAc - TORM PLC

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Hudson River Trading Europe Limited (Program Three)

## ➤ TRNm - Terna Rete Elettrica Nazionale SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TRYGc - Tryg A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TRYI - TR Property Investment Trust PLC - Ordinary Shares

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ TSCOl - Tesco PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TTId - Tom Tailor Holding SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ TTKd - Takkt AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ TTR1d - Technotrans SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ TUBb - Financiere de Tubize SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ TUBe - Tubacex SA

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Hudson River Trading Europe Limited (Program Three)

## ➤ TUI1d - TUI AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TUI - TUI AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ TWEKAa - TKH Group NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TWI - Taylor Wimpey PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ TXTm - TXT e-solutions SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ TYMNI - Tyman PLC

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Hudson River Trading Europe Limited (Program Three)

## ➤ UAI - U & I Group PLC

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Citadel Securities (Europe) Limited (Program Three)

## ➤ UBIm - Unione di Banche Italiane SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)  
Intermonte Sim SPA (Program Two)  
Optiver V.O.F. (Program Two and Three)  
Qube Fund Ltd (Program One)  
Societe Generale London Branch (Program Three)  
Squarepoint Master Fund Ltd (Program One)  
UTR8 BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ UBIP - Ubisoft Entertainment SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ UBSGz - UBS Group AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe Limited (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ UBZNz - u-blox Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ UCBb - UCB SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ UCGm - UniCredit SpA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Squarepoint Master Fund Ltd (Program One)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ UDGL - UDG Healthcare PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 XTX Markets Limited (Program Three)

#### ➤ UGp - Peugeot SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Optiver V.O.F. (Program Two and Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

### ➤ UHRNz - Swatch Group AG/The

Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 ORA Traders BV (Program Three)  
 Societe Generale London Branch (Program Three)

### ➤ UHRz - Swatch Group AG/The

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

### ➤ UKCML - UK Commercial Property REIT Ltd

Hudson River Trading Europe Limited (Program Three)

### ➤ ULEI - Ultra Electronics Holdings PLC

Citadel Securities (Europe) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

### ➤ ULVRI - Unilever PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 UTR8 BV (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

### ➤ UMlb - Umicore SA

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

### ➤ UN01d - Uniper SE

BNP Paribas Arbitrage SNC (Program One and Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)



#### ➤ UNAA - Unilever NV

BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Tower Research Capital Europe BV (Program Two)  
 UTR8 BV (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ UNIAA - Unilever NV

Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Three)

#### ➤ UNIRm - Unieuro SpA

Hudson River Trading Europe Limited (Program Two)

#### ➤ UNle - Unicaja Banco SA

Hudson River Trading Europe Limited (Program Three)

#### ➤ UNIm - Unipol Gruppo SpA

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Squarepoint Master Fund Ltd (Program One)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ UPMh - UPM-Kymmene OYJ

BNP Paribas Arbitrage SNC (Program One and Three)  
 Optiver V.O.F. (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ UPONOh - Uponor OYJ

Hudson River Trading Europe Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

#### ➤ UQAv - UNIQA Insurance Group AG

XTX Markets Limited (Program Three)

## ➤ URWa - Unibail-Rodamco-Westfield

BNP Paribas Arbitrage SNC (Program One and Three)  
 BRED Banque Populaire (Program Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)

## ➤ USTp - Lyxor Nasdaq-100 UCITS ETF

Hudson River Trading Europe Limited (Program Three)

## ➤ USm - UnipolSai Assicurazioni SpA

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 Hudson River Trading Europe Limited (Program Two)  
 Intermonte Sim SPA (Program Two)  
 Optiver V.O.F. (Program Two and Three)  
 Qube Fund Ltd (Program One)  
 Societe Generale London Branch (Program Three)  
 Squarepoint Master Fund Ltd (Program One)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ UTDId - United Internet AG

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ UTGl - UNITE Group PLC/The

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 XTX Markets Limited (Program Three)

## ➤ UUl - United Utilities Group PLC

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ V3Vd - VITA 34 AG

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ V6Cd - Viscom AG

Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ VACNz - VAT Group AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)

#### ➤ VACp - Pierre & Vacances SA

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ VALMTh - Valmet OYJ

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ VALNz - Valora Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ VANb - Van de Velde NV

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ VAOd - Vapiano SE

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Hudson River Trading Europe Limited (Program Three)

#### ➤ VASTNa - Vastned Retail NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

#### ➤ VBKd - VERBIO Vereinigte BioEnergie AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ VCTI - Victrex PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ VCTp - Vicat SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ [VECl - Vectura Group PLC](#)

Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

➤ [VEILL - Dragon Capital - Vietnam Enterprise Investments Ltd](#)

Hudson River Trading Europe Limited (Program Three)

➤ [VEIo - Veidekke ASA](#)

Hudson River Trading Europe Limited (Program Three)

➤ [VERXa - Vanguard FTSE Developed Europe ex UK UCITS ETF](#)

Hudson River Trading Europe Limited (Program Three)

➤ [VERv - Verbund AG](#)

Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

➤ [VETOp - Vetoquinol SA](#)

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

➤ [VETz - Vetropack Holding AG](#)

Citadel Securities (Europe) Limited (Program Three)

➤ [VEURa - Vanguard FTSE Developed Europe UCITS ETF](#)

Hudson River Trading Europe Limited (Program Three)

➤ [VGPb - VGP NV](#)

Citadel Securities GCS (Ireland) Limited (Program Three)

➤ [VIB3d - Villeroy & Boch AG](#)

Citadel Securities GCS (Ireland) Limited (Program Three)

➤ [VIDe - Vidrala SA](#)

Hudson River Trading Europe Limited (Program Three)

## ➤ VIEp - Veolia Environnement SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VIFNz - Vifor Pharma AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

## ➤ VIGv - Vienna Insurance Group AG Wiener Versicherung Gruppe

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VIHd - VIB Vermoegen AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ VIRPp - Virbac SA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VISe - Viscofan SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Hudson River Trading Europe Limited (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VITRs - Vitrolife AB

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Hudson River Trading Europe Limited (Program Three)

#### ➤ VIVp - Vivendi SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Two and Three)  
Societe Generale London Branch (Program Three)  
UTR8 BV (Program Two and Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ VKp - Vallourec SA

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ VLAp - Valneva SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

#### ➤ VLKa - Van Lanschot Kempen NV

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Citadel Securities GCS (Ireland) Limited (Program Three)

#### ➤ VNAd - Vonovia SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ VNEs - Veoneer Inc

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Hudson River Trading Europe Limited (Program Three)

#### ➤ VODI - Vodafone Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VOEv - voestalpine AG

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Optiver V.O.F. (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VOLVAs - Volvo AB

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VOLVBs - Volvo AB

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VONNz - Vontobel Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ VOSd - Vossloh AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ VOW3d - Volkswagen AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
BRED Banque Populaire (Program Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VOWd - Volkswagen AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VPBNz - VP Bank AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ VPKa - Koninklijke Vopak NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VSVSI - Vesuvius PLC

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Citadel Securities (Europe) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VTCL - Vitec Group PLC/The

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Citadel Securities (Europe) Limited (Program Three)

## ➤ VUKEL - Vanguard FTSE 100 UCITS ETF

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Optiver V.O.F. (Program Three)

## ➤ VUSAI - Vanguard S&P 500 UCITS ETF

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Hudson River Trading Europe Limited (Program Three)  
Optiver V.O.F. (Program Three)

## ➤ VUSDI - Vanguard S&P 500 UCITS ETF

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Optiver V.O.F. (Program Three)

## ➤ VWSc - Vestas Wind Systems A/S

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ VZNz - VZ Holding AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ WACd - Wacker Neuson SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ WAFd - Siltronic AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)  
XTX Markets Limited (Program Three)



## ➤ WALLBs - Wallenstam AB

Hudson River Trading Europe Limited (Program Three)  
 XTX Markets Limited (Program Three)

## ➤ WALWlo - Wallenius Wilhelmsen ASA

Hudson River Trading Europe Limited (Program Three)

## ➤ WAVEp - Wavestone

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ WCHd - Wacker Chemie AG

Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Societe Generale London Branch (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ WDId - Wirecard AG

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Jump Trading Europe B.V. (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ WDPb - Warehouses De Pauw CVA

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities GCS (Ireland) Limited (Program Three)  
 XTX Markets Limited (Program Three)

## ➤ WEHBb - Wereldhave Belgium Comm VA

Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ WEIRl - Weir Group PLC/The

BNP Paribas Arbitrage SNC (Program One and Three)  
 Citadel Securities (Europe) Limited (Program Three)  
 IMC Trading BV (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)  
 XTX Markets Limited (Program Three)

## ➤ WESa - Wessanen

Citadel Securities GCS (Ireland) Limited (Program Three)  
 Virtu Financial Ireland Ltd (Program Two)

#### ➤ WGL - John Wood Group PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Optiver V.O.F. (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ WHAa - Wereldhave NV

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Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ WIEv - Wienerberger AG

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ WIHLs - Wihlborgs Fastigheter AB

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Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ WIZZl - Wizz Air Holdings Plc

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XTX Markets Limited (Program Three)

#### ➤ WKBNz - Walliser Kantonalbank

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Citadel Securities (Europe) Limited (Program Three)

#### ➤ WKLa - Wolters Kluwer NV

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe BV (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

#### ➤ WKPl - Workspace Group PLC

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Citadel Securities (Europe) Limited (Program Three)  
XTX Markets Limited (Program Three)

#### ➤ WL6d - Heidelberg Pharma AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ WLDp - Lyxor MSCI World UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ WLNp - Worldline SA/France

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities GCS (Ireland) Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ WMHL - William Hill PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ WPCTI - Woodford Patient Capital Trust PLC/The Fund

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Hudson River Trading Europe Limited (Program Three)

## ➤ WPPI - WPP PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Tower Research Capital Europe Limited (Program Two)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ WRT1Vh - Wartsila OYJ Abp

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BNP Paribas Arbitrage SNC (Program One and Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ WSUd - Washtec AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ WTANI - Witan Investment Trust PLC

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ WTBL - Whitbread PLC

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ WUWd - Wuestenrot & Wuerttembergische AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ WWHL - Worldwide Healthcare Trust PLC/Fund

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ X1Gp - Amundi Govt Bond Lowest Rated Euromts Investment Grade UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ XACTOs - XACT OMXS30

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Hudson River Trading Europe Limited (Program Three)

## ➤ XBRMIm - Lyxor FTSE MIB Daily -2x Inverse Xbear UCITS ETF

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Hudson River Trading Europe Limited (Program Two)

## ➤ XD5Em - Xtrackers MSCI EMU UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ XDAXm - Xtrackers DAX UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ XDDXd - Xtrackers DAX Income UCITS ETF

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ORA Traders BV (Program Three)

## ➤ XESCM - Xtrackers Euro Stoxx 50 UCITS ETF

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Hudson River Trading Europe Limited (Program Three)

## ➤ XFABp - X-Fab Silicon Foundries SE

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

➤ [XILp - Xilam Animation SA](#)

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

➤ [XIORb - Xior Student Housing NV](#)

Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

➤ [XLDXm - Xtrackers LevDAX Daily Swap UCITS ETF](#)

Hudson River Trading Europe Limited (Program Three)

➤ [XLKSI - Invesco Technology S&P US Select Sector UCITS ETF](#)

Hudson River Trading Europe Limited (Program Three)

➤ [XMEUs - Xtrackers MSCI Europe UCITS ETF](#)

Optiver V.O.F. (Program Three)

➤ [XMK9d - Xtrackers MSCI Japan UCITS ETF](#)

Hudson River Trading Europe Limited (Program Three)

➤ [XMLDI - Xtrackers MSCI EM Latin America Swap UCITS ETF](#)

FlowTraders B.V. (Program Three)

➤ [XMWOm - Xtrackers MSCI World Swap UCITS ETF](#)

Hudson River Trading Europe Limited (Program Three)

➤ [XPRm - Exprivia SpA](#)

Citadel Securities GCS (Ireland) Limited (Program Three)

➤ [XSPUI - Xtrackers S&P 500 Swap UCITS ETF](#)

Hudson River Trading Europe Limited (Program Three)

➤ [XXLo - XXL ASA](#)

Hudson River Trading Europe Limited (Program Three)  
XTX Markets Limited (Program Three)

## ➤ YARo - Yara International ASA

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Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ YITh - YIT OYJ

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Virtu Financial Ireland Ltd (Program Two)

## ➤ YPSNz - Ypsomed Holding AG

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Citadel Securities (Europe) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Three)

## ➤ YSNd - Secunet Security Networks AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ YZAi - Aryzta AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ZAGv - Zumtobel Group AG

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Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ZALd - Zalando SE

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BNP Paribas Arbitrage SNC (Program One and Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)

## ➤ ZEALc - Zealand Pharma A/S

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Hudson River Trading Europe Limited (Program Three)

## ➤ ZGz - Zuger Kantonalbank AG

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Citadel Securities (Europe) Limited (Program Three)

## ➤ ZIL2d - ElringKlinger AG

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)

## ➤ ZO1d - zooplus AG

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Citadel Securities GCS (Ireland) Limited (Program Three)

## ➤ ZOTe - Zardoya Otis SA

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Hudson River Trading Europe Limited (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ZURNz - Zurich Insurance Group AG

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BNP Paribas Arbitrage SNC (Program One and Three)  
Citadel Securities (Europe) Limited (Program Three)  
IMC Trading BV (Program Three)  
Societe Generale London Branch (Program Three)  
Virtu Financial Ireland Ltd (Program Two)  
XTX Markets Limited (Program Three)

## ➤ ZVm - Zignago Vetro SpA

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Citadel Securities GCS (Ireland) Limited (Program Three)  
Hudson River Trading Europe Limited (Program Two)