

Annexes

Annexe 1 : Liste des ETFs sélectionnés

TICKER	FUND NAME	ASSET CLASS	LAUNCH DATE	GEOGRAPHY	UNDERLYING INDEX	WEIGHTING SCHEME	EXPENSE RATIO	AUM
XTL	SPDR S&P Telecom ETF	Equity	01/26/11	U.S.	S&P Telecom Select Industry	Equal	0,35%	\$60,65M
FCG	First Trust Natural Gas ETF	Equity	05-08-07	U.S.	ISE-REVERE Natural Gas Index	Equal	0,60%	\$77,38M
RCD	Invesco S&P500 Equal Weight Consumer Discretionary ETF	Equity	11-01-06	U.S.	S&P500 Equal Weighted / Consumer Discretionary -SEC	Equal	0,40%	\$88,59M
XHS	SPDR S&P Health Care Services ETF	Equity	09/28/11	U.S.	S&P Health Care Services Select Industry	Equal	0,35%	\$90,00M
EWMC	Invesco S&P MidCap 400 Equal Weight ETF	Equity	12-08-10	U.S.	S&P MidCap 400 Equal Weight Index	Equal	0,40%	\$100,96 M
SYLD	Cambria Shareholder Yield ETF	Equity	05/14/13	U.S.	Cambria Shareholder Yield Index	Equal	0,59%	\$106,19 M
RTM	Invesco S&P500 Equal Weight Materials ETF	Equity	11-01-06	U.S.	S&P500 Equal Weighted / Materials -SEC	Equal	0,40%	\$134,05 M
XTN	SPDR S&P Transportation ETF	Equity	01/26/11	U.S.	S&P Transportation Select Industry	Equal	0,35%	\$147,31 M
BFOR	ALPS Barron's 400 ETF	Equity	06-04-13	U.S.	Barron's 400 Index	Equal	0,66%	\$152,68 M
RYE	Invesco S&P500 Equal Weight Energy ETF	Equity	11-01-06	U.S.	S&P500 Equal Weighted / Energy -SEC	Equal	0,40%	\$156,65 M
EQL	ALPS Equal Sector Weight ETF	Equity	07-07-09	U.S.	NYSE Select Sector Equal Weight Index	Equal	0,48%	\$158,63 M

<u>RYJ</u>	Invesco Raymond James SB-1 Equity ETF	Equity	05/19/06	U.S.	Raymond James SB-1 Index	Equal	0,81%	\$159,63 M
<u>XES</u>	SPDR S&P Oil & Gas Equipment & Services ETF	Equity	06/19/06	U.S.	S&P Oil & Gas Equipment & Services Select Industry Index	Equal	0,35%	\$170,70 M
<u>RGI</u>	Invesco S&P500 Equal Weight Industrials ETF	Equity	11-01-06	U.S.	S&P500 Equal Weighted / Industrials -SEC	Equal	0,40%	\$202,65 M
<u>XPH</u>	SPDR S&P Pharmaceuticals ETF	Equity	06/19/06	U.S.	S&P Pharmaceuticals Select Industry	Equal	0,35%	\$206,85 M
<u>DEF</u>	Invesco Defensive Equity ETF	Equity	12/15/06	U.S.	Invesco Defensive Equity Index	Equal	0,59%	\$227,56 M
<u>XSW</u>	SPDR S&P Software & Services ETF	Equity	09/28/11	U.S.	S&P Software & Services Select Industry	Equal	0,35%	\$231,89 M
<u>XSD</u>	SPDR S&P Semiconductor ETF	Equity	01/31/06	U.S.	S&P Semiconductors Select Industry	Equal	0,35%	\$270,49 M
<u>EUSA</u>	iShares MSCI U.S.A. Equal Weighted ETF	Equity	05-05-10	U.S.	MSCI USA Equal Weighted Index	Equal	0,15%	\$274,12 M
<u>RYF</u>	Invesco S&P500 Equal Weight Financials ETF	Equity	11-01-06	U.S.	S&P500 Equal Weighted / Financials -SEC	Equal	0,40%	\$283,95 M
<u>RYU</u>	Invesco S&P500 Equal Weight Utilities ETF	Equity	11-01-06	U.S.	S&P500 Equal Weighted/ Utilities & Telecommunications	Equal	0,40%	\$351,22 M
<u>XRT</u>	SPDR S&P Retail ETF	Equity	06/19/06	U.S.	S&P Retail Select Industry	Equal	0,35%	\$387,54 M
<u>XNTK</u>	SPDR NYSE Technology ETF	Equity	09/25/00	U.S.	NYSE Technology Index	Equal	0,35%	\$413,68 M
<u>XME</u>	SPDR S&P Metals & Mining ETF	Equity	06/19/06	U.S.	S&P Metals and Mining Select Industry	Equal	0,35%	\$425,59 M
<u>RHS</u>	Invesco S&P500 Equal Weight Consumer Staples ETF	Equity	11-01-06	U.S.	S&P500 Equal Weighted / Consumer Staples -SEC	Equal	0,40%	\$485,28 M
<u>XHE</u>	SPDR S&P Health Care Equipment ETF	Equity	01/26/11	U.S.	S&P Healthcare Equipment Select Industry	Equal	0,35%	\$595,11 M

<u>RYH</u>	Invesco S&P500 Equal Weight Health Care ETF	Equity	11-01-06	U.S.	S&P500 Equal Weighted / Health Care -SEC	Equal	0,40%	\$734,98 M
<u>FVD</u>	First Trust Value Line Dividend Index Fund	Equity	08/19/03	U.S.	Value Line Dividend (TR)	Equal	0,70%	\$6,33B
<u>XHB</u>	SPDR S&P Homebuilders ETF	Equity	01/31/06	U.S.	S&P Homebuilders Select Industry	Equal	0,35%	\$744,25 M
<u>KIE</u>	SPDR S&P Insurance ETF	Equity	11-08-05	U.S.	S&P Insurance Select Industry	Equal	0,35%	\$945,29 M
<u>XAR</u>	SPDR S&P Aerospace & Defense ETF	Equity	09/28/11	U.S.	S&P Aerospace & Defense Select Industry	Equal	0,35%	\$1,48B
<u>XOP</u>	SPDR S&P Oil & Gas Exploration & Production ETF	Equity	06/19/06	U.S.	S&P Oil & Gas Exploration & Production Select Industry	Equal	0,35%	\$1,57B
<u>RYT</u>	Invesco S&P500 Equal Weight Technology ETF	Equity	11-01-06	U.S.	S&P500 Equal Weighted / Information Technology -SEC	Equal	0,40%	\$1,66B
<u>SDOG</u>	ALPS Sector Dividend Dogs ETF	Equity	06/29/12	U.S.	S-Network Sector Dividend Dogs Index	Equal	0,40%	\$1,82B
<u>KBE</u>	SPDR S&P Bank ETF	Equity	11-08-05	U.S.	S&P Banks Select Industry	Equal	0,35%	\$1,89B
<u>KRE</u>	SPDR S&P Regional Banking ETF	Equity	06/19/06	U.S.	S&P Regional Banks Select Industry	Equal	0,35%	\$2,19B
<u>MOAT</u>	VanEck Vectors Morningstar Wide Moat ETF	Equity	04/25/12	U.S.	Morningstar Wide Moat Focus Index	Equal	0,49%	\$2,24B
<u>FTCS</u>	First Trust Capital Strength ETF	Equity	07-06-06	U.S.	The NASDAQ Capital Strength Index	Equal	0,60%	\$2,39B
<u>FBT</u>	First Trust NYSE Arca Biotechnology Index Fund	Equity	06/19/06	U.S.	NYSE Arca Biotechnology (TR)	Equal	0,57%	\$2,76B
<u>XBI</u>	SPDR S&P Biotech ETF	Equity	01/31/06	U.S.	S&P Biotechnology Select Industry Index	Equal	0,35%	\$4,06B
<u>NOBL</u>	ProShares S&P500 Dividend Aristocrats ETF	Equity	10-09-13	U.S.	S&P500 Dividend Aristocrats	Equal	0,35%	\$4,81B
<u>RSP</u>	Invesco S&P500 Equal Weight ETF	Equity	04/24/03	U.S.	S&P500 Equal Weight Index	Equal	0,20%	\$15,84B

<u>SPHQ</u>	Invesco S&P500 Quality ETF	Equity	12-06-05	U.S.	S&P500 Quality Index	Fundamental	0,15%	\$1,47B
<u>RPG</u>	Invesco S&P500 Pure Growth ETF	Equity	03-01-06	U.S.	S&P500 Pure Growth	Fundamental	0,35%	\$2,75B
<u>RPV</u>	Invesco S&P500 Pure Value ETF	Equity	03-01-06	U.S.	S&P500 Pure Value	Fundamental	0,35%	\$889,38 M
<u>RZG</u>	Invesco S&P SmallCap 600 Pure Growth ETF	Equity	03-01-06	U.S.	S&P Small Cap 600 Pure Growth	Fundamental	0,35%	\$216,24 M
<u>RZV</u>	Invesco S&P SmallCap 600 Pure Value ETF	Equity	03-01-06	U.S.	S&P Small Cap 600 Pure Value	Fundamental	0,35%	\$172,68 M
<u>RFV</u>	Invesco S&P MidCap 400 Pure Value ETF	Equity	03-01-06	U.S.	S&P Mid Cap 400 Pure Value	Fundamental	0,35%	\$131,04 M
<u>FNDB</u>	Schwab Fundamental U.S. Broad Market Index ETF	Equity	08-08-13	U.S.	Russell RAFI US	Fundamental	0,25%	\$277,87 M
<u>VLUE</u>	iShares Edge MSCI U.S.A. Value Factor ETF	Equity	04/16/13	U.S.	MSCI USA Enhanced Value Index	Fundamental	0,15%	\$3,21B
<u>QUAL</u>	iShares Edge MSCI U.S.A. Quality Factor ETF	Equity	07/18/13	U.S.	MSCI USA Sector Neutral Quality Index	Fundamental	0,15%	\$10,84B
<u>FNDX</u>	Schwab Fundamental U.S. Large Company Index ETF	Equity	08/15/13	U.S.	Russell RAFI U.S. Large Company Index	Fundamental	0,25%	\$4,99B
<u>FNDA</u>	Schwab Fundamental U.S. Small Company Index ETF	Equity	08/15/13	U.S.	Russell RAFI U.S. Small Company Index	Fundamental	0,25%	\$3,22B
<u>PRFZ</u>	Invesco FTSE RAFI U.S. 1500 Small-Mid ETF	Equity	09/20/06	U.S.	FTSE RAFI US 1500	Fundamental	0,39%	\$1,99B
<u>PRF</u>	Invesco FTSE RAFI U.S. 1000 ETF	Equity	12/19/05	U.S.	FTSE RAFI US 1000	Fundamental	0,39%	\$5,42B

Source : ETF.com

Annexe 2 : Détail des statistiques descriptives

		R	R(a)	R-B	R-B (a)	σ (Weekly - 5Y)	Var.	σ - $\sigma(B)$	R(a) - Rf	β (Weekly - 5Y)	β ajusté
	EQUAL										
1	XTL US Equity	0,155	0,029	-0,215	-0,047	0,024	0,001	0,007	0,009	1,096	1,064
2	FCG US Equity	-0,846	-0,312	-1,215	-1,736	0,053	0,003	0,036	-0,333	1,637	1,425
3	RCD US Equity	0,135	0,026	-0,234	-0,052	0,020	0,000	0,003	0,005	0,986	0,991
4	XHS US Equity	0,389	0,068	0,020	0,004	0,023	0,001	0,006	0,047	0,929	0,953
5	EWMC US Equity	0,200	0,037	-0,169	-0,036	0,020	0,000	0,003	0,017	1,046	1,031
6	SYLD US Equity	0,117	0,022	-0,252	-0,056	0,019	0,000	0,002	0,002	1,006	1,004
7	RTM US Equity	0,201	0,037	-0,168	-0,036	0,023	0,001	0,006	0,017	1,150	1,100
8	XTN US Equity	0,333	0,059	-0,036	-0,007	0,027	0,001	0,010	0,039	1,257	1,172
9	BFOR US Equity	0,201	0,037	-0,169	-0,036	0,020	0,000	0,003	0,017	1,099	1,066
10	RYE US Equity	-0,446	-0,111	-0,815	-0,287	0,036	0,001	0,019	-0,132	1,417	1,278
11	EQL US Equity	0,253	0,046	-0,116	-0,024	0,015	0,000	-0,001	0,026	0,872	0,915
12	RYJ US Equity	0,111	0,021	-0,258	-0,058	0,022	0,000	0,005	0,001	1,165	1,110
13	XES US Equity	-0,786	-0,265	-1,155	-1,689	0,049	0,002	0,032	-0,286	1,790	1,527
14	RGI US Equity	0,277	0,050	-0,092	-0,019	0,021	0,000	0,004	0,030	1,093	1,062
15	XPH US Equity	-0,156	-0,033	-0,525	-0,138	0,031	0,001	0,015	-0,054	1,170	1,113
16	DEF US Equity	0,286	0,052	-0,083	-0,017	0,015	0,000	-0,002	0,031	0,768	0,845
17	XSW US Equity	0,664	0,107	0,295	0,053	0,025	0,001	0,008	0,087	1,174	1,116
18	XSD US Equity	1,160	0,166	0,791	0,124	0,031	0,001	0,014	0,146	1,402	1,268
19	EUSA US Equity	0,270	0,049	-0,099	-0,021	0,017	0,000	0,001	0,029	0,978	0,985
20	RYF US Equity	0,323	0,058	-0,046	-0,009	0,020	0,000	0,003	0,037	1,021	1,014
21	RYU US Equity	0,380	0,067	0,011	0,002	0,018	0,000	0,001	0,046	0,366	0,577
22	XRT US Equity	-0,052	-0,011	-0,421	-0,104	0,024	0,001	0,007	-0,031	0,921	0,947
23	XNTK US Equity	0,342	0,061	-0,027	-0,005	0,028	0,001	0,012	0,040	1,321	1,214
24	XME US Equity	-0,348	-0,082	-0,717	-0,223	0,044	0,002	0,027	-0,102	1,625	1,417
25	RHS US Equity	0,295	0,053	-0,074	-0,015	0,015	0,000	-0,002	0,033	0,552	0,701
26	XHE US Equity	0,807	0,126	0,438	0,075	0,023	0,001	0,006	0,105	1,011	1,008
27	RYH US Equity	0,605	0,099	0,236	0,043	0,020	0,000	0,003	0,079	0,996	0,997
28	XHB US Equity	-0,002	0,000	-0,371	-0,089	0,024	0,001	0,007	-0,021	1,056	1,037
29	KIE US Equity	0,352	0,062	-0,018	-0,004	0,017	0,000	0,001	0,042	0,821	0,881
30	XAR US Equity	0,606	0,099	0,236	0,043	0,023	0,001	0,006	0,079	1,071	1,047
31	XOP US Equity	-0,602	-0,168	-0,971	-0,507	0,046	0,002	0,029	-0,189	1,697	1,464
32	RYT US Equity	0,847	0,131	0,478	0,081	0,022	0,000	0,005	0,110	1,211	1,140
33	SDOG US Equity	0,148	0,028	-0,221	-0,049	0,018	0,000	0,002	0,008	0,972	0,981

34	KBE US Equity	0,142	0,027	-0,227	-0,050	0,027	0,001	0,011	0,007	1,148	1,099
35	KRE US Equity	0,167	0,031	-0,202	-0,044	0,028	0,001	0,012	0,011	1,133	1,088
36	MOAT US Equity	0,447	0,077	0,078	0,015	0,017	0,000	0,000	0,056	0,914	0,943
37	FTCS US Equity	0,441	0,076	0,072	0,014	0,016	0,000	-0,001	0,055	0,911	0,941
38	FBT US Equity	0,786	0,123	0,416	0,072	0,037	0,001	0,020	0,103	1,422	1,281
39	XBI US Equity	0,679	0,109	0,310	0,055	0,045	0,002	0,028	0,089	1,551	1,367
40	NOBL US Equity	0,373	0,065	0,004	0,001	0,015	0,000	-0,002	0,045	0,833	0,889
41	FVD US Equity	0,363	0,064	-0,006	-0,001	0,013	0,000	-0,003	0,044	0,701	0,801
42	RSP US Equity	0,294	0,053	-0,075	-0,016	0,017	0,000	0,000	0,032	0,995	0,997
		R	R(a)	R-B	R-B (a)	σ (Weekly - 5Y)	Var.	$\sigma - \sigma(B)$	R(a) - Rf	β (Weekly - 5Y)	β ajusté
	FUNDAMENTAL										
43	SPHQ US Equity	0,375	0,066	0,006	0,001	0,016	0,000	-0,001	0,045	0,907	0,938
44	RPG US Equity	0,417	0,072	0,048	0,009	0,021	0,000	0,004	0,052	1,156	1,104
45	RPV US Equity	0,166	0,031	-0,203	-0,044	0,021	0,000	0,004	0,011	1,093	1,062
46	RFV US Equity	0,142	0,027	-0,227	-0,050	0,025	0,001	0,008	0,007	1,202	1,135
47	RZG US Equity	0,310	0,055	-0,059	-0,012	0,024	0,001	0,008	0,035	1,211	1,141
48	RZV US Equity	-0,050	-0,010	-0,419	-0,103	0,028	0,001	0,011	-0,031	1,212	1,141
49	FNDB US Equity	0,245	0,045	-0,124	-0,026	0,017	0,000	0,000	0,024	0,961	0,974
50	VLUE US Equity	0,245	0,045	-0,124	-0,026	0,019	0,000	0,002	0,024	1,074	1,049
51	QUAL US Equity	0,369	0,065	0,000	0,000	0,017	0,000	0,000	0,044	0,969	0,979
52	FNDX US Equity	0,261	0,048	-0,108	-0,023	0,017	0,000	0,000	0,027	0,955	0,970
53	FNDA US Equity	0,183	0,034	-0,186	-0,040	0,020	0,000	0,003	0,014	1,059	1,039
54	PRFZ US Equity	0,174	0,033	-0,195	-0,042	0,022	0,000	0,005	0,012	1,090	1,060
55	PRF US Equity	0,240	0,044	-0,129	-0,027	0,017	0,000	0,000	0,024	0,971	0,981

Sources : Bloomberg, finance.yahoo.com

Annexe 3 : Synthèse des résultats des tests de normalité Shapiro-Wilk et Anderson-Darling

Variable\Test	Shapiro-Wilk	Anderson-Darling
	p-value	p-value
EQUAL		
XTL US Equity	0,052	0,038
FCG US Equity	< 0,0001	< 0,0001
RCD US Equity	0,080	0,250
XHS US Equity	< 0,0001	< 0,0001
EWMC US Equity	< 0,0001	0,000
SYLD US Equity	< 0,0001	< 0,0001
RTM US Equity	< 0,0001	< 0,0001
XTN US Equity	0,001	0,000
BFOR US Equity	< 0,0001	< 0,0001
RYE US Equity	0,010	0,005
EQL US Equity	< 0,0001	< 0,0001
RYJ US Equity	< 0,0001	< 0,0001
XES US Equity	0,070	0,113
RGI US Equity	0,000	< 0,0001
XPH US Equity	< 0,0001	0,001
DEF US Equity	< 0,0001	< 0,0001
XSW US Equity	< 0,0001	< 0,0001
XSD US Equity	< 0,0001	< 0,0001
EUSA US Equity	< 0,0001	< 0,0001
RYF US Equity	< 0,0001	< 0,0001
RYU US Equity	0,026	0,100
XRT US Equity	0,456	0,279
XNTK US Equity	< 0,0001	< 0,0001
XME US Equity	0,000	0,003
RHS US Equity	< 0,0001	0,000
XHE US Equity	< 0,0001	< 0,0001
RYH US Equity	< 0,0001	< 0,0001
XHB US Equity	0,003	0,010
KIE US Equity	0,001	0,002
XAR US Equity	0,001	0,001
XOP US Equity	0,001	0,002
RYT US Equity	< 0,0001	< 0,0001
SDOG US Equity	< 0,0001	< 0,0001

KBE US Equity	0,001	0,000
KRE US Equity	0,006	0,003
MOAT US Equity	< 0,0001	< 0,0001
FTCS US Equity	< 0,0001	< 0,0001
FBT US Equity	< 0,0001	< 0,0001
XBI US Equity	0,000	0,000
NOBL US Equity	< 0,0001	< 0,0001
FVD US Equity	< 0,0001	< 0,0001
RSP US Equity	< 0,0001	< 0,0001
FUNDAMENTAL		
SPHQ US Equity	< 0,0001	< 0,0001
RPG US Equity	< 0,0001	< 0,0001
RPV US Equity	< 0,0001	< 0,0001
RFV US Equity	0,001	0,002
RZG US Equity	0,001	0,010
RZV US Equity	0,073	0,258
FNDB US Equity	< 0,0001	< 0,0001
VLUE US Equity	< 0,0001	< 0,0001
QUAL US Equity	< 0,0001	< 0,0001
FNDX US Equity	< 0,0001	< 0,0001
FNDA US Equity	0,000	0,002
PRFZ US Equity	0,003	0,012
PRF US Equity	< 0,0001	< 0,0001
BENCHMARK		
S&P500	< 0,0001	< 0,0001

Sources : Bloomberg, XLSTAT

Annexe 4 : Détail de la performance ajustée au risque de l'ensemble des fonds étudiés

		Sharpe	Sortino	Alpha Jensen
	EQUAL			
1	XTL US Equity	0,367	0,539	-0,039
2	FCG US Equity	-6,327	-9,130	-0,396
3	RCD US Equity	0,269	0,406	-0,039
4	XHS US Equity	2,072	2,446	0,005
5	EWMC US Equity	0,840	1,116	-0,029
6	SYLD US Equity	0,106	0,135	-0,043
7	RTM US Equity	0,729	0,980	-0,032
8	XTN US Equity	1,442	1,959	-0,013
9	BFOR US Equity	0,827	1,056	-0,031
10	RYE US Equity	-3,700	-5,287	-0,189
11	EQL US Equity	1,677	2,021	-0,015
12	RYJ US Equity	0,037	0,047	-0,049
13	XES US Equity	-5,819	-9,002	-0,354
14	RGI US Equity	1,434	1,882	-0,018
15	XPH US Equity	-1,708	-2,276	-0,103
16	DEF US Equity	2,039	2,439	-0,006
17	XSW US Equity	3,528	4,526	0,037
18	XSD US Equity	4,725	6,058	0,090
19	EUSA US Equity	1,641	1,921	-0,015
20	RYF US Equity	1,832	2,368	-0,008
21	RYU US Equity	2,610	3,763	0,021
22	XRT US Equity	-1,279	-1,999	-0,073
23	XNTK US Equity	1,412	1,311	-0,014
24	XME US Equity	-2,325	-3,899	-0,165
25	RHS US Equity	2,239	2,939	0,002
26	XHE US Equity	4,537	5,316	0,060
27	RYH US Equity	3,959	4,824	0,034
28	XHB US Equity	-0,865	-1,187	-0,067
29	KIE US Equity	2,392	3,236	0,003
30	XAR US Equity	3,492	4,854	0,032
31	XOP US Equity	-4,105	-5,976	-0,254
32	RYT US Equity	4,956	5,926	0,059

33	SDOG US Equity	0,414	0,546	-0,036
34	KBE US Equity	0,239	0,332	-0,042
35	KRE US Equity	0,387	0,553	-0,037
36	MOAT US Equity	3,249	3,890	0,014
37	FTCS US Equity	3,481	4,145	0,014
38	FBT US Equity	2,773	3,824	0,046
39	XBI US Equity	1,961	2,713	0,028
40	NOBL US Equity	2,992	3,840	0,006
41	FVD US Equity	3,240	4,103	0,008
42	RSP US Equity	1,879	2,281	-0,012
		Sharpe	Sortino	Alpha Jensen
	FUNDAMENTAL			
43	SPHQ US Equity	2,834	3,340	0,004
44	RPG US Equity	2,503	2,868	0,003
45	RPV US Equity	0,525	0,674	-0,036
46	RFV US Equity	0,269	0,373	-0,044
47	RZG US Equity	1,433	1,959	-0,016
48	RZV US Equity	-1,103	-1,690	-0,081
49	FNDB US Equity	1,462	1,776	-0,019
50	VLUE US Equity	1,276	1,593	-0,022
51	QUAL US Equity	2,659	3,171	0,001
52	FNDX US Equity	1,641	2,009	-0,016
53	FNDA US Equity	0,680	0,926	-0,032
54	PRFZ US Equity	0,566	0,801	-0,035
55	PRF US Equity	1,393	1,711	-0,020

Sources : Bloomberg, finance.yahoo.com, XLSTAT

