Cryptocurrencies as diversification in times of crisis
Onlineappendix

Table A1: overview of safe haven and hedge capabilities in the whole set

combination	rel.	WSH	SSH	WH	SH
BTC*DJI	x				
BTC*ES50	x				
BTC*EUR	x	x		x	
BTC*GOLD	x				
BTC*JPY	x				
BTC*MSCI	x				
BTC*NI225		x			
BTC*OIL	x			x	
BTC*SP500	x				
ETH*DJI	x				
ETH*ES50	x				
ETH*EUR		x			
ETH*GOLD		x			
ETH*JPY		x			
ETH*MSCI	x				
ETH*NI225		x			
ETH*OIL		x			
ETH*SP500	x				
XRP*DJI	x				
XRP*ES50					
XRP*EUR		x			
XRP*GOLD		x			
XRP*JPY		x			
XRP*MSCI					
XRP*NI225		x			
XRP*OIL	x				
XRP*SP500	x				
USDT*DJI	x	x		x	
USDT*ES50	x	x		x	

Table A1 : continued from previous page

combination	rel.	WSH	SSH	WH	SH
USDT*EUR	x				
USDT*GOLD		x			
USDT*JPY	x	x		x	
USDT*MSCI		x			
USDT*NI225		x			
USDT*OIL		x			
USDT*SP500	x	x		x	
BNB*DJI	x				
BNB*ES50	x				
BNB*EUR		x			
BNB*GOLD	x				
BNB*JPY		x			
BNB*MSCI	x				
BNB*NI225		x			
BNB*OIL	x				
BNB*SP500					
XMR*DJI	x				
XMR*ES50	x				
XMR*EUR		x			
XMR*GOLD					
XMR*JPY		x			
XMR*MSCI	x				
XMR*NI225	x	x		x	
XMR*OIL		x			
XMR*SP500	x				
EOS*DJI	x				
EOS*ES50	x				
EOS*EUR	x	x		x	
EOS*GOLD		x			
EOS*JPY		x			
EOS*MSCI	x				
EOS*NI225		x			
EOS*OIL	x				

Table A1 : continued from previous page

combination	rel.	WSH	SSH	WH	SH
EOS*SP500	x				
ADA*DJI	x				
ADA*ES50	x				
ADA*EUR		x			
ADA*GOLD	x				
ADA*JPY		x			
ADA*MSCI	x				
ADA*NI225	x				
ADA*OIL	x				
ADA*SP500	x				
LINK*DJI	x				
LINK*ES50	x				
LINK*EUR		x			
LINK*GOLD		x			
LINK*JPY	x	x		x	
LINK*MSCI	x				
LINK*NI225	x	x		x	
LINK*OIL		x			
LINK*SP500	x				

Abbreviations: rel. = a non-linear relationship, WSH = weak safe haven, SSH = strong safe haven, WH = weak hedge, SH = strong hedge; x indicates a classification at a 10% significance level

Table A2: overview of safe haven and hedge capabilities before COVID-19

combination	rel.	WSH	SSH	WH	SH
BTC*DJI		x			
BTC*ES50		x			
BTC*EUR	x	x		x	
BTC*GOLD	x	x		x	
BTC*JPY	x				
BTC*MSCI		x			
BTC*NI225	x	x		x	
BTC*OIL	x				
BTC*SP500		x			
ETH*DJI		x			
ETH*ES50		x			
ETH*EUR	x				
ETH*GOLD		x			
ETH*JPY		x			
ETH*MSCI		x			
ETH*NI225		x			
ETH*OIL		x			
ETH*SP500		x			
XRP*DJI					
XRP*ES50		x			
XRP*EUR		x			
XRP*GOLD		x			
XRP*JPY		x			
XRP*MSCI					
XRP*NI225		x			
XRP*OIL	x				
XRP*SP500					
USDT*DJI		x			
USDT*ES50		x			
USDT*EUR		x			
USDT*GOLD		x			
USDT*JPY		x			

Table A2 : continued from previous page

combination	rel.	WSH	SSH	WH	SH
USDT*MSCI		x			
USDT*NI225		x			
USDT*OIL		x			
USDT*SP500		x			
BNB*DJI		x			
BNB*ES50		x			
BNB*EUR		x			
BNB*GOLD	x				
BNB*JPY		x			
BNB*MSCI		x			
BNB*NI225		x			
BNB*OIL		x			
BNB*SP500		x			
XMR*DJI		x			
XMR*ES50		x			
XMR*EUR		x			
XMR*GOLD		x			
XMR*JPY		x			
XMR*MSCI	x				
XMR*NI225		x			
XMR*OIL		x			
XMR*SP500		x			
EOS*DJI		x			
EOS*ES50		x			
EOS*EUR		x			
EOS*GOLD	x				
EOS*JPY	x				
EOS*MSCI		x			
EOS*NI225		x			
EOS*OIL		x			
EOS*SP500		x			
ADA*DJI	x				
ADA*ES50		x			

Table A2 : continued from previous page

combination	rel.	WSH	SSH	WH	SH
ADA*EUR		x			
ADA*GOLD		x			
ADA*JPY		x			
ADA*MSCI	x				
ADA*NI225	x				
ADA*OIL		x			
ADA*SP500		x			
LINK*DJI		x			
LINK*ES50		x			
LINK*EUR		x			
LINK*GOLD		x			
LINK*JPY		x			
LINK*MSCI		x			
LINK*NI225		x			
LINK*OIL	x	x		x	
LINK*SP500	x				

Abbreviations: rel. = a non-linear relationship, WSH = weak safe haven, SSH = strong safe haven, WH = weak hedge, SH = strong hedge; x indicates a classification at a 10% significance level

Table A3: overview of safe haven and hedge capabilities during COVID-19

combination	rel.	WSH	SSH	WH	SH
BTC*DJI	x				
BTC*ES50	x				
BTC*EUR		x			
BTC*GOLD		x			
BTC*JPY		x			
BTC*MSCI	x				
BTC*NI225	x			x	
BTC*OIL		x			
BTC*SP500		x			
ETH*DJI	x				
ETH*ES50	x				
ETH*EUR		x			
ETH*GOLD		x			
ETH*JPY					
ETH*MSCI	x				
ETH*NI225	x			x	
ETH*OIL		x			
ETH*SP500	x				
XRP*DJI	x				
XRP*ES50	x				
XRP*EUR		x			
XRP*GOLD		x			
XRP*JPY		x			
XRP*MSCI	x				
XRP*NI225	x				
XRP*OIL		x			
XRP*SP500	x				
USDT*DJI	x	x		x	
USDT*ES50	-	-	-	-	-
USDT*EUR	x			x	
USDT*GOLD	-	-	-	-	-
USDT*JPY	x				

Table A3 : continued from previous page

combination	rel.	WSH	SSH	WH	SH
USDT*MSCI	x	x		x	
USDT*NI225	x				
USDT*OIL		x			
USDT*SP500	-	-	-	-	-
BNB*DJI	x				
BNB*ES50	x				
BNB*EUR		x			
BNB*GOLD		x			
BNB*JPY		x			
BNB*MSCI	x				
BNB*NI225	x				
BNB*OIL		x			
BNB*SP500	x				
XMR*DJI	x				
XMR*ES50	x				
XMR*EUR	x			x	
XMR*GOLD					
XMR*JPY		x			
XMR*MSCI	x				
XMR*NI225	x				
XMR*OIL	x			x	
XMR*SP500	x				
EOS*DJI	x				
EOS*ES50	x				
EOS*EUR		x			
EOS*GOLD					
EOS*JPY		x			
EOS*MSCI	x				
EOS*NI225		x			
EOS*OIL		x			
EOS*SP500	x				
ADA*DJI	x				
ADA*ES50	x				

Table A3 : continued from previous page

combination	rel.	WSH	SSH	WH	SH
ADA*EUR		x			
ADA*GOLD		x			
ADA*JPY					
ADA*MSCI	x				
ADA*NI225		x			
ADA*OIL		x			
ADA*SP500	x				
LINK*DJI	x				
LINK*ES50	x				
LINK*EUR	x				
LINK*GOLD	x				
LINK*JPY					
LINK*MSCI	x				
LINK*NI225	x				
LINK*OIL		x			
LINK*SP500	x				

Abbreviations: rel. = a non-linear relationship, WSH = weak safe haven, SSH = strong safe haven, WH = weak hedge, SH = strong hedge; x indicates a classification at a 10% significance level; for three USDT combinations (i.e.ES50, GOLD, SP500) in the COVID-19 subset the model did not converge, this is indicated by "-" in the corresponding row

Table A4: ETH returns factor loadings

Dependent variable: ETH returns in %-terms															
	Whole Set					**Before COVID-19**					**During COVID-19**				
	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor
ALPHA	0.34	0.34	0.36	0.35	0.36	0.34	0.34	0.33	0.35	0.35	0.63	0.55	0.65	0.54	0.62
	(0.23)	(0.23)	(0.23)	(0.23)	(0.23)	(0.25)	(0.25)	(0.25)	(0.25)	(0.25)	(0.46)	(0.48)	(0.46)	(0.46)	(0.43)
Mkt.RF	0.91**	0.82	0.98*	0.88	0.98*	-0.21	-0.34	-0.04	-0.37	-0.15	1.81***	1.92**	1.89**	1.86**	1.84**
	(0.45)	(0.52)	(0.52)	(0.59)	(0.58)	(0.48)	(0.53)	(0.53)	(0.63)	(0.63)	(0.59)	(0.80)	(0.77)	(0.91)	(0.88)
SMB		-0.43	-0.28	-0.38	-0.27		-0.61	-0.43	-0.65	-0.48		0.21	0.17	0.01	0.01
		(0.72)	(0.72)	(0.77)	(0.77)		(0.89)	(0.89)	(0.92)	(0.92)		(1.08)	(1.05)	(1.20)	(1.18)
HML		0.11	1.64**	-0.28	1.62*		-0.20	1.08	-1.00	0.65		-0.43	0.53	-0.48	0.40
		(0.43)	(0.65)	(0.76)	(0.88)		(0.69)	(0.72)	(1.18)	(1.18)		(0.61)	(1.22)	(1.37)	(1.58)
MOM			1.65***		1.64***			1.59***		1.58***			0.79		0.67
			(0.54)		(0.53)			(0.57)		(0.57)			(0.92)		(0.95)
RMW				-0.44	-0.15				-1.47	1-.36				-1.73	-1.33
				(1.16)	(1.17)				(1.45)	(1.43)				(2.13)	(2.20)
CMA				0.82	0.02				0.83	0.03				-0.77	-0.80
				(1.41)	(1.36)				(1.71)	(1.71)				(2.15)	(2.14)
Obs.	1,300	1,300	1,300	1,300	1,300	1,147	1,147	1,147	1,147	1,147	153	153	153	153	153
R^2	0.011	0.011	0.020	0.012	0.020	0.000	0.001	0.007	0.002	0.008	0.313	0.315	0.321	0.321	0.325
Adj. R^2	0.010	0.009	0.017	0.008	0.015	-0.001	-0.002	0.003	-0.002	0.002	0.308	0.302	0.303	0.298	0.298

Note: *p<0.1; **p<0.05; ***p<0.01; In all estimations standard errors accounting for heteroskedasticity (HC0) are applied.

Table A5: XRP returns factor loadings

Dependent variable: XRP returns in %-terms															
	Whole Set					**Before COVID-19**					**During COVID-19**				
	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor
ALPHA	0.18	0.18	0.18	0.18	0.18	0.20	0.19	0.19	0.20	0.20	0.18	0.16	0.28	0.17	0.26
	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)	(0.20)	(0.20)	(0.20)	(0.20)	(0.20)	(0.38)	(0.39)	(0.55)	(0.38)	(0.36)
Mkt.RF	0.86***	0.95***	0.98***	0.98***	1.00***	0.38	0.48*	0.51*	0.45	0.47	1.37***	1.39**	1.36**	1.36**	1.34**
	(0.27)	(0.31)	(0.31)	(0.35)	(0.35)	(0.26)	(0.29)	(0.30)	(0.32)	(0.32)	(0.41)	(0.57)	(0.55)	(0.65)	(0.62)
SMB		0.40	0.43	0.42	0.44		0.56	0.59	0.53	0.55		0.06	0.01	-0.14	-0.15
		(0.53)	(0.53)	(0.56)	(0.56)		(0.63)	(0.63)	(0.64)	(0.64)		(0.82)	(0.79)	(0.92)	(0.90)
HML		-0.17	0.28	-0.63	-0.12		-0.49	-0.23	-1.32	-1.05		-0.09	1.05	-0.38	0.64
		(0.33)	(0.52)	(0.59)	(0.74)		(0.49)	(0.63)	(0.81)	(0.96)		(0.47)	(0.94)	(1.01)	(1.22)
MOM			0.49		0.44			0.33		0.25			0.95		0.77
			(0.37)		(0.37)			(0.42)		(0.43)			(0.67)		(0.70)
RMW				-0.72	-0.61				-1.21	-1.16				-2.42	-1.97
				(0.92)	(0.92)				(1.03)	(1.02)				(1.63)	(1.70)
CMA				0.63	0.41				0.93	0.79				-0.32	-0.36
				(1.06)	(1.07)				(1.24)	(1.28)				(1.60)	(1.59)
Obs.	1,824	1,824	1,824	1,824	1,824	1,671	1,671	1,671	1,671	1,671	153	153	153	153	153
R^2	0.009	0.009	0.010	0.009	0.010	0.001	0.002	0.002	0.003	0.003	0.280	0.281	0.294	0.295	0.303
Adj. R^2	0.008	0.007	0.008	0.007	0.007	0.000	0.000	0.000	0.000	-0.001	0.276	0.266	0.275	0.271	0.275

Note: *p<0.1; **p<0.05; ***p<0.01; In all estimations standard errors accounting for heteroskedasticity (HC0) are applied.

Table A6: USDT returns factor loadings

Dependent variable: USDT returns in %-terms															
	Whole Set					**Before COVID-19**					**During COVID-19**				
	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor
ALPHA	-0.01	-0.01	-0.01	-0.01	-0.01	-0.017	-0.02	-0.02	-0.02	-0.02	0.00	0.02	0.02	0.02	0.02
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)	(0.08)	(0.08)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)
Mkt.RF	-0.10	-0.08	-0.09	-0.12	-0.12	-0.07	-0.07	-0.08	-0.10	-0.10	-0.12	-0.07	-0.07	-0.07	-0.07
	(0.06)	(0.06)	(0.07)	(0.08)	(0.08)	(0.11)	(0.11)	(0.12)	(0.15)	(0.15)	(0.07)	(0.09)	(0.09)	(0.11)	(0.11)
SMB		0.09	0.09	0.07	0.06		-0.01	-0.02	-0.02	-0.02		0.27	0.27	0.25	0.25
		(0.11)	(0.11)	(0.11)	(0.11)		(0.07)	(0.06)	(0.07)	(0.07)		(0.24)	(0.24)	(0.25)	(0.25)
HML		0.09	0.05	0.24	0.22		0.10	0.05	0.38	0.34		0.07	0.12	-0.01	0.01
		(0.07)	(0.10)	(0.16)	(0.19)		(0.12)	(0.16)	(0.28)	(0.32)		(0.07)	(0.10)	(0.21)	(0.24)
MOM			-0.04		-0.018			-0.06		-0.03			0.04		0.02
			(0.06)		(0.06)			(0.08)		(0.08)			(0.09)		(0.10)
RMW				0.08	0.08				0.23	0.23				-0.30	0.29
				(0.20)	(0.20)				(0.32)	(0.32)				(0.35)	(0.37)
CMA				-0.36*	-0.35*				-0.45	-0.43				0.00	0.00
				(0.21)	(0.20)				(0.30)	(0.29)				(0.36)	(0.36)
Obs.	1,414	1,414	1,414	1,414	1,414	1,261	1,261	1,261	1,261	1,261	153	153	153	153	153
R^2	0.002	0.002	0.002	0.003	0.003	0.000	0.001	0.001	0.001	0.002	0.100	0.167	0.168	0.174	0.174
Adj. R^2	0.001	0.000	-0.001	-0.001	-0.002	0.000	-0.002	-0.002	-0.002	-0.003	0.095	0.150	0.145	0.146	0.140

Note: *p<0.1; **p<0.05; ***p<0.01; In all estimations standard errors accounting for heteroskedasticity (HC0) are applied.

Table A7: BNB returns factor loadings

Dependent variable: BNB returns in %-terms															
	Whole Set					**Before COVID-19**					**During COVID-19**				
	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor
ALPHA	0.62*	0.62*	0.65*	0.62*	0.64*	0.73*	0.72*	0.72*	0.71*	0.71*	0.25	0.19	0.30	0.21	0.29
	(0.34)	(0.34)	(0.34)	(0.34)	(0.34)	(0.41)	(0.40)	(0.40)	(0.40)	(0.40)	(0.45)	(0.47)	(0.45)	(0.45)	(0.42)
Mkt.RF	1.54***	1.69***	1.77***	1.65***	1.71***	1.07	1.17	1.49*	1.13	1.48*	1.73***	1.84**	1.81**	1.87**	1.84**
	(0.48)	(0.56)	(0.57)	(0.62)	(0.61)	(0.67)	(0.73)	(0.81)	(0.77)	(0.83)	(0.58)	(0.79)	(0.76)	(0.89)	(0.86)
SMB		0.58	0.69	0.57			1.02	1.30	1.18	0.71	1.59	0.26	0.22	0.11	0.10
		(0.81)	(0.82)	(0.84)			(1.37)	(1.37)	(1.33)	(0.84)	(1.32)	(0.95)	(0.92)	(1.08)	(1.06)
HML		-0.29	1.23	-0.20			-0.76	1.02	0.12	1.72	2.71	-0.38	0.69	-1.05	-0.17
		(0.42)	(0.99)	(0.87)			(0.75)	(1.40)	(1.41)	(1.52)	(2.51)	(0.57)	(1.24)	(1.24)	(1.52)
MOM			1.51*		1.60*			2.04		2.31			0.88		0.67
			(0.82)		(0.88)			(1.36)		(1.46)			(0.90)		(0.92)
RMW				-0.08	0.63				0.99	1.81				-2.94	-2.55
				(1.47)	(1.54)				(1.87)	(1.94)				(2.15)	(2.23)
CMA				-0.45	(-0.91)				-1.42	-2.18				0.52	0.48
				(1.82)	(1.90)				(2.53)	(2.77)				(2.08)	(2.08)
Obs.	788	788	788	788	788	635	635	635	635	635	153	153	153	153	153
R^2	0.031	0.032	0.036	0.032	0.037	0.005	0.006	0.011	0.007	0.012	0.303	0.306	0.314	0.318	0.323
Adj. R^2	0.030	0.028	0.031	0.026	0.029	0.003	0.001	0.004	-0.001	0.003	0.299	0.292	0.295	0.295	0.295

Note: *p<0.1; **p<0.05; ***p<0.01; In all estimations standard errors accounting for heteroskedasticity (HC0) are applied.

Table A8: XMR returns factor loadings

Dependent variable: XMR returns in %-terms															
	Whole Set					**Before COVID-19**					**During COVID-19**				
	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor
ALPHA	0.22	0.23	0.23	0.24	0.25	0.21	0.22	0.22	0.24	0.24	0.41	0.35	0.41	0.40	0.42
	(0.20)	(0.20)	(0.20)	(0.20)	(0.20)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.43)	(0.45)	(0.43)	(0.43)	(0.40)
Mkt.RF	0.99***	1.00**	1.06**	1.04**	1.07**	0.44	0.49	0.57	0.39	0.45	1.53***	1.66**	1.64**	1.76**	1.75**
	(0.35)	(0.41)	(0.42)	(0.46)	(0.46)	(0.34)	(0.39)	(0.40)	(0.43)	(0.44)	(0.53)	(0.73)	(0.71)	(0.81)	(0.79)
SMB		0.16	0.22	0.16	0.20		0.19	0.25	0.13	0.17		0.39	0.37	0.30	0.30
		(0.57)	(0.58)	(0.61)	(0.61)		(0.72)	(0.72)	(0.72)	(0.73)		(0.92)	(0.90)	(1.05)	(1.04)
HML		0.39	0.98	-0.45	0.19		0.53	0.93	-0.33	0.13		-0.33	0.18	-1.48	-1.30
		(0.39)	(0.66)	(0.66)	(0.87)		(0.58)	(0.77)	(0.96)	(1.13)		(0.53)	(1.13)	(1.15)	(1.33)
MOM			0.64		0.56			0.48		0.45			0.42		0.13
			(0.48)		(0.48)			(0.53)		(0.54)			(0.84)		(0.84)
RMW				-1.68*	-1.59*				-1.90*	-1.86*				-3.61**	-3.53**
				(0.95)	(0.96)				(1.11)	(1.11)				(1.63)	(1.62)
CMA				1.07	0.81				0.61	0.39				1.63	1.63
				(1.20)	(1.18)				(1.42)	(1.43)				(1.91)	(1.90)
Obs.	1,616	1,616	1,616	1,616	1,616	1,463	1,463	1,463	1,463	1,463	153	153	153	153	153
R^2	0.012	0.013	0.014	0.015	0.016	0.001	0.002	0.002	0.003	0.004	0.266	0.269	0.271	0.291	0.292
Adj. R^2	0.012	0.011	0.012	0.012	0.012	0.001	0.000	0.000	0.000	0.000	0.262	0.255	0.252	0.267	0.262

Note: *p<0.1; **p<0.05; ***p<0.01; In all estimations standard errors accounting for heteroskedasticity (HC0) are applied.

Table A9: EOS returns factor loadings

Dependent variable: EOS returns in %-terms															
	Whole Set					**Before COVID-19**					**During COVID-19**				
	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor
ALPHA	-0.08	-0.04	-0.03	-0.03	-0.03	-0.09	-0.06	-0.06	-0.06	-0.06	0.11	0.07	0.18	0.08	0.16
	(0.30)	(0.30)	(0.30)	(0.30)	(0.30)	(0.34)	(0.35)	(0.35)	(0.35)	(0.35)	(0.48)	(0.50)	(0.48)	(0.48)	(0.46)
Mkt.RF	1.26***	1.33**	1.36**	1.26**	1.29**	0.48	0.86	0.84	0.72	0.73	1.56***	1.64**	1.61**	1.63*	1.61*
	(0.45)	(0.53)	(0.55)	(0.59)	(0.60)	(0.57)	(0.66)	(0.71)	(0.71)	(0.77)	(0.55)	(0.75)	(0.72)	(0.85)	(0.82)
SMB		0.50	0.54	0.41	0.46		1.10	1.09	1.30	1.32		0.21	0.17	0.01	0.01
		(0.78)	(0.79)	(0.79)	(0.81)		(1.22)	(1.23)	(1.19)	(1.21)		(0.96)	(0.93)	(1.08)	(1.07)
HML		0.51	1.10	0.62	1.35		1.02	0.92	2.58	2.70		-0.22	0.82	-0.72	0.12
		(0.48)	(0.96)	(0.90)	(1.25)		(0.98)	(1.38)	(1.59)	(1.95)		(0.57)	(1.25)	(1.25)	(1.55)
MOM			0.59		0.60			-0.11		0.10			0.86		0.64
			(0.71)		(0.74)			(1.01)		(1.04)			(0.90)		(0.92)
RMW				-0.44	-0.17				0.95	0.98				-2.88	-2.51
				(1.61)	(1.67)				(2.17)	(2.23)				(1.99)	(2.03)
CMA				-0.64	-0.81				-2.81	-2.85				0.03	0.00
				(1.72)	(1.70)				(2.54)	(2.53)				(2.01)	(2.01)
Obs.	804	804	804	804	804	651	651	651	651	651	153	153	153	153	153
R^2	0.027	0.029	0.030	0.029	0.030	0.001	0.004	0.004	0.007	0.007	0.238	0.239	0.246	0.251	0.255
Adj. R^2	0.026	0.025	0.025	0.023	0.022	0.000	0.000	-0.002	-0.001	-0.003	0.233	0.224	0.226	0.226	0.224

Note: *p<0.1; **p<0.05; ***p<0.01; In all estimations standard errors accounting for heteroskedasticity (HC0) are applied.

Table A10: ADA returns factor loadings

Dependent variable: ADA returns in %-terms															
	Whole Set					**Before COVID-19**					**During COVID-19**				
	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor
ALPHA	0.18	0.19	0.22	0.20	0.22	0.00	0.02	0.02	0.03	0.03	0.93*	0.91*	0.99*	0.91*	0.96*
	(0.33)	(0.34)	(0.34)	(0.34)	(0.34)	(0.40)	(0.41)	(0.41)	(0.40)	(0.40)	(0.51)	(0.53)	(0.52)	(0.51)	(0.50)
Mkt.RF	1.60***	1.72***	1.77***	1.56***	1.60***	1.07*	1.24*	1.40*	1.00	1.21	1.81***	1.92***	1.89***	1.89**	1.87**
	(0.42)	(0.50)	(0.52)	(0.58)	(0.58)	(0.58)	(0.73)	(0.80)	(0.81)	(0.87)	(0.53)	(0.72)	(0.70)	(0.82)	(0.79)
SMB		0.56	0.61	0.43	0.50		0.89	1.01	1.12	1.35		0.38	0.35	0.16	0.16
		(0.80)	(0.82)	(0.82)	(0.84)		(1.15)	(1.22)	(1.10)	(1.18)		(1.05)	(1.03)	(1.18)	(1.17)
HML		-0.01	0.83	0.55	1.66		-0.04	0.81	1.96	3.57*		-0.16	0.59	-0.54	-0.02
		(0.45)	(0.96)	(0.95)	(1.28)		(0.96)	(1.52)	(1.66)	(2.02)		(0.62)	(1.23)	(1.32)	(1.58)
MOM			0.82		0.91			0.95		1.34			0.62		0.40
			(0.77)		(0.80)			(1.22)		(1.21)			(0.91)		(0.94)
RMW				-0.62	-0.24				0.43	0.86				-2.75	-2.52
				(1.58)	(1.62)				(2.18)	(2.20)				(2.11)	(2.16)
CMA				-1.87	-2.18				-3.96	-4.56*				-0.34	-0.36
				(1.85)	(1.82)				(2.60)	(2.53)				(2.40)	(2.39)
Obs.	739	739	739	739	739	586	586	586	586	586	153	153	153	153	153
R^2	0.038	0.039	0.040	0.040	0.042	0.005	0.006	0.007	0.009	0.011	0.272	0.273	0.276	0.283	0.284
Adj. R^2	0.037	0.035	0.035	0.034	0.034	0.004	0.001	0.000	0.001	0.001	0.267	0.258	0.256	0.259	0.255

Note: *p<0.1; **p<0.05; ***p<0.01; In all estimations standard errors accounting for heteroskedasticity (HC0) are applied.

Table A11: LINK returns factor loadings

Dependent variable: LINK returns in %-terms															
	Whole Set					**Before COVID-19**					**During COVID-19**				
	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor	CAPM	3-factor	4-factor	5-factor	6-factor
ALPHA	0.45	0.48	0.54	0.51	0.55*	0.34	0.36	0.37	0.39	0.39	0.95*	0.96	1.10*	0.96*	1.09**
	(0.32)	(0.33)	(0.33)	(0.33)	(0.33)	(0.38)	(0.38)	(0.38)	(0.39)	(0.38)	(0.54)	(0.58)	(0.56)	(0.57)	(0.55)
Mkt.RF	1.74***	1.76***	1.87***	1.80**	1.87***	1.03	1.14	1.59*	1.07	1.46	2.01***	2.15**	2.11**	2.13**	2.09**
	(0.54)	(0.65)	(0.65)	(0.72)	(0.71)	(0.67)	(0.76)	(0.82)	(0.85)	(0.89)	(0.68)	(0.93)	(0.89)	(1.05)	(1.01)
SMB		0.23	0.35	0.10	0.25		0.01	0.35	-0.23	0.19		0.60	0.55	0.44	0.44
		(0.88)	(0.89)	(0.93)	(0.94)		(1.35)	(1.37)	(1.34)	(1.37)		(1.18)	(1.14)	(1.35)	(1.32)
HML		0.48	2.52**	-0.38	1.88		0.74	3.19**	-0.69	2.31		-0.05	1.31	-0.41	0.92
		(0.54)	(1.17)	(0.97)	(1.50)		(1.05)	(1.52)	(1.56)	(2.08)		(0.76)	(1.58)	(1.53)	(2.02)
MOM			2.00**		1.86**			2.73**		2.54**			1.13		1.00
			(0.88)		(0.90)			(1.11)		(1.14)			(1.16)		(1.20)
RMW				-2.51*	-1.72				-2.96	-2.09				-2.06	-1.47
				(1.48)	(1.54)				(1.99)	(2.03)				(2.12)	(2.21)
CMA				0.88	0.28				1.23	0.22				-0.18	-0.23
				(2.06)	(2.06)				(2.78)	(2.78)				(3.10)	(3.06)
Obs.	747	747	747	747	747	594	594	594	594	594	153	153	153	153	153
R^2	0.047	0.048	0.058	0.052	0.059	0.005	0.006	0.016	0.010	0.018	0.290	0.292	0.302	0.297	0.304
Adj. R^2	0.046	0.045	0.053	0.045	0.052	0.004	0.001	0.009	0.001	0.008	0.285	0.278	0.283	0.273	0.275

Note: *p<0.1; **p<0.05; ***p<0.01; In all estimations standard errors accounting for heteroskedasticity (HC0) are applied.