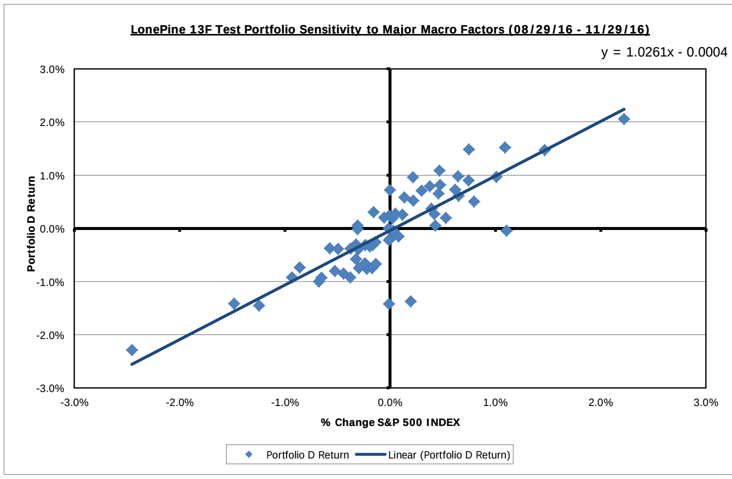
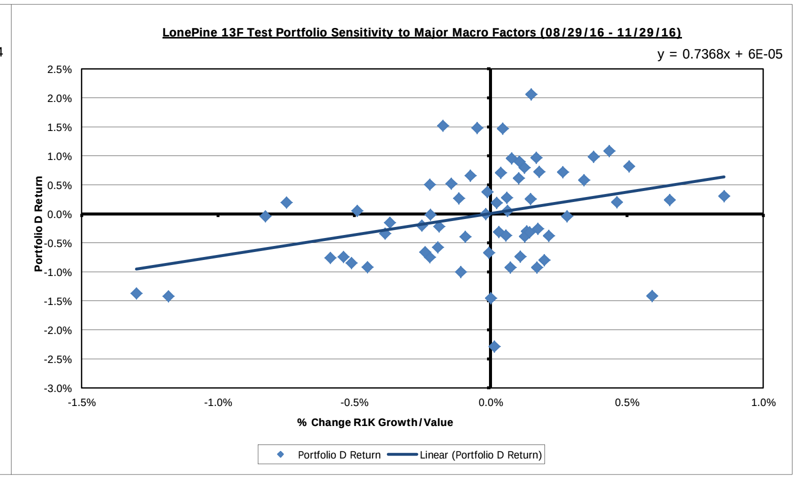
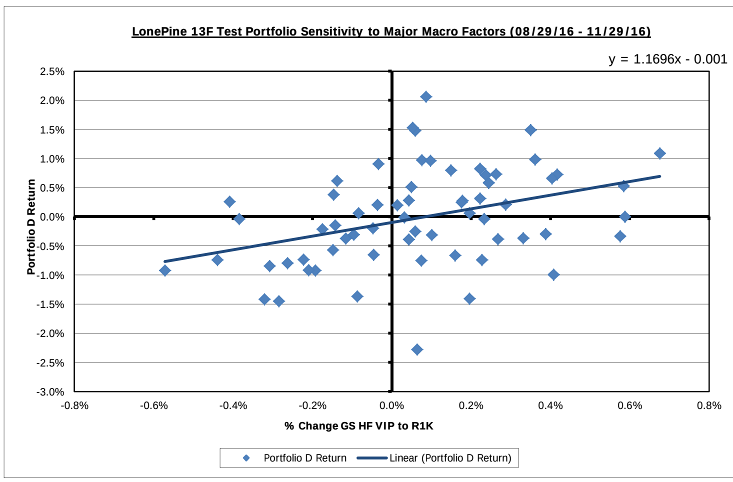
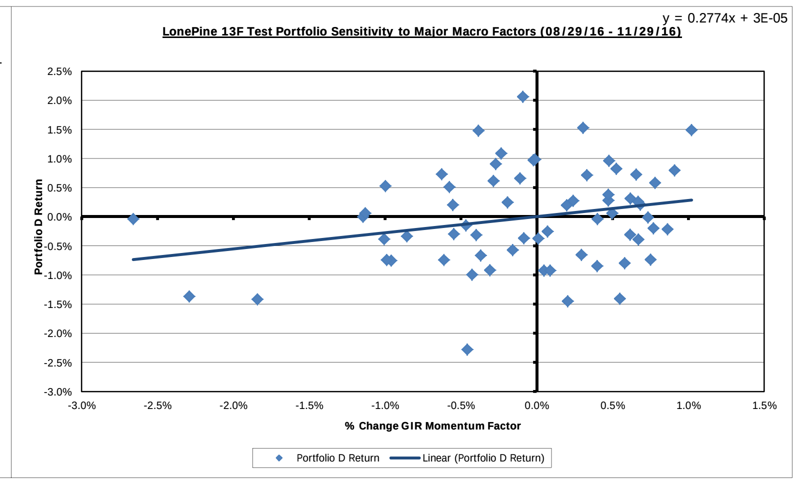
LonePine 13F Test Portfolio Sensitivity to Major Macro Factors (08/29/16 - 11/29/16): Correlation Matrix

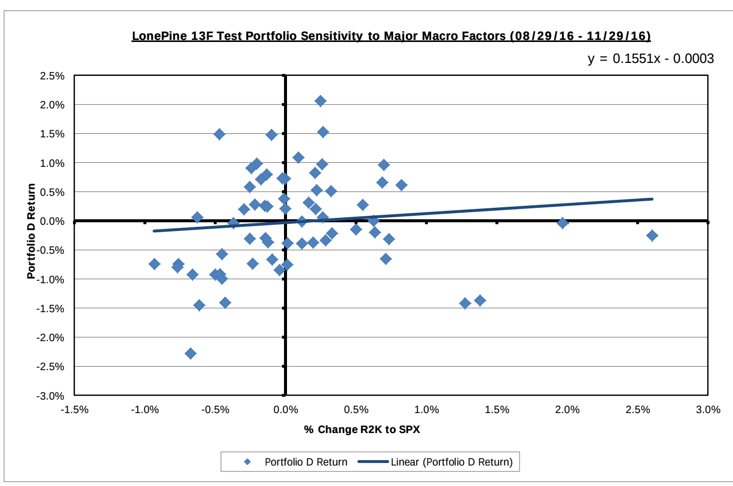
	Annualized Vol	13%	11%	6%	4%	12%	10%	20%	31%	6%	40%	17%
	-	Portfolio D Return	SPX Index	.R1KGV Index	.HFVIPR1K Index	GSMEFMOM Index	.R2KSPX Index	USSWIT10 Index	GT10 Govt	DXY Curncy	USCRWTIC Index	LMEX Index
	Portfolio D Return	1.0	0.8	0.3	0.4	0.3	0.1	0.2	(0.3)	(0.2)	0.3	0.1
S&P 500 INDEX	SPX Index	0.8	1.0	(0.1)	0.2	(0.1)	0.4	0.4	(0.0)	(0.0)	0.4	0.3
R1K Growth/Value	.R1KGV Index	0.3	(0.1)	1.0	0.2	0.6	(0.3)	(0.3)	(0.5)	(0.1)	(0.2)	(0.4)
GS HF VIP to R1K	.HFVIPR1K Index	0.4	0.2	0.2	1.0	(0.1)	0.1	0.2	0.1	0.0	0.1	(0.1)
GIR Momentum Factor	GSMEFMOM Index	0.3	(0.1)	0.6	(0.1)	1.0	(0.4)	(0.5)	(0.6)	(0.3)	(0.2)	(0.2)
R2K to SPX	.R2KSPX Index	0.1	0.4	(0.3)	0.1	(0.4)	1.0	0.4	0.3	0.3	(0.0)	0.2
USD INFL ZERO CPN 10Y	USSWIT10 Index	0.2	0.4	(0.3)	0.2	(0.5)	0.4	1.0	0.5	0.2	0.2	0.3
US TREASURY N/B	GT10 Govt	(0.3)	(0.0)	(0.5)	0.1	(0.6)	0.3	0.5	1.0	0.6	(0.1)	0.2
DOLLAR INDEX SPOT	DXY Curncy	(0.2)	(0.0)	(0.1)	0.0	(0.3)	0.3	0.2	0.6	1.0	(0.0)	0.0
Bloomberg West Texas Intermedi	USCRWTIC Index	0.3	0.4	(0.2)	0.1	(0.2)	(0.0)	0.2	(0.1)	(0.0)	1.0	0.2
LMEX LONDON METALS INDEX	LMEX Index	0.1	0.3	(0.4)	(0.1)	(0.2)	0.2	0.3	0.2	0.0	0.2	1.0

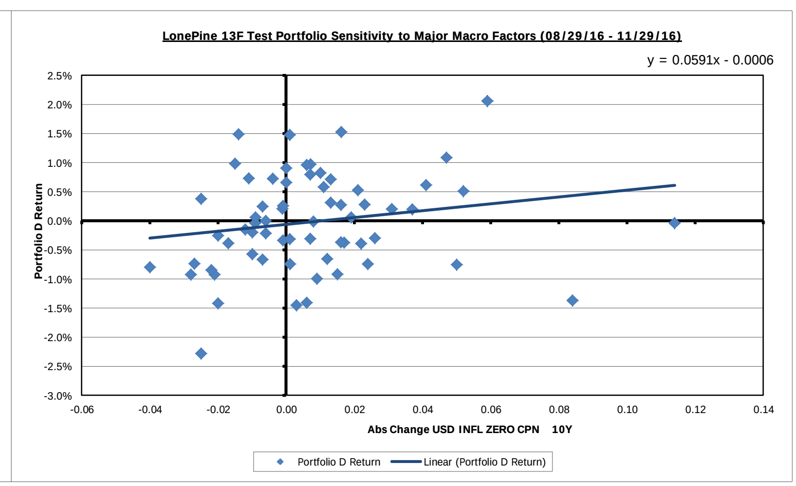




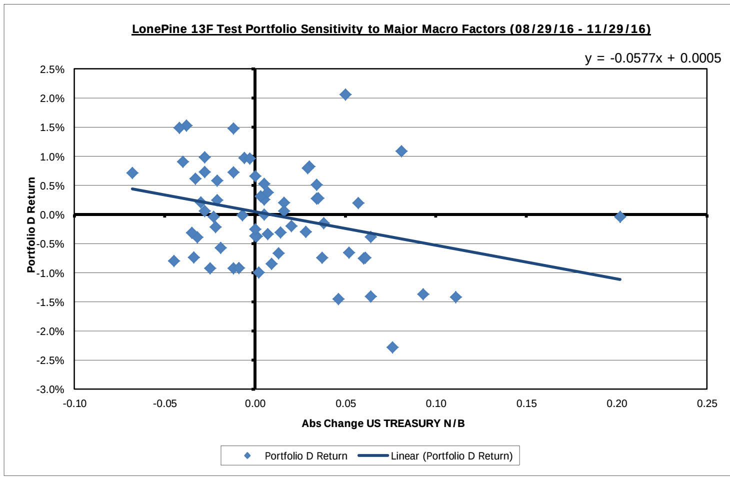


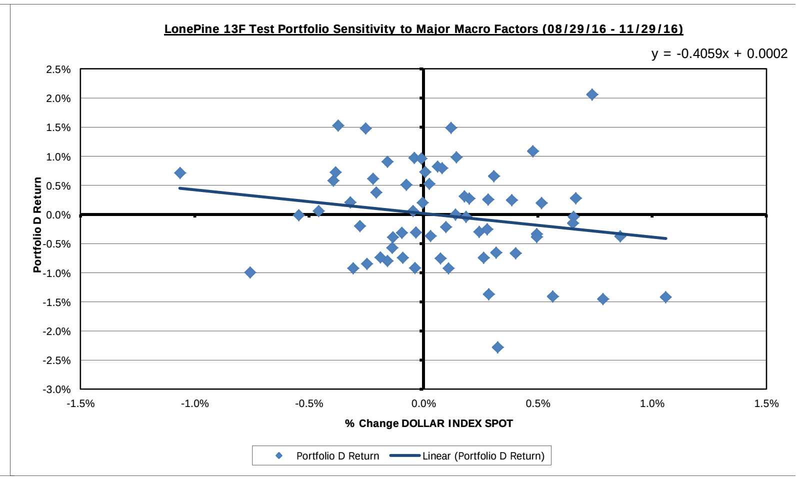


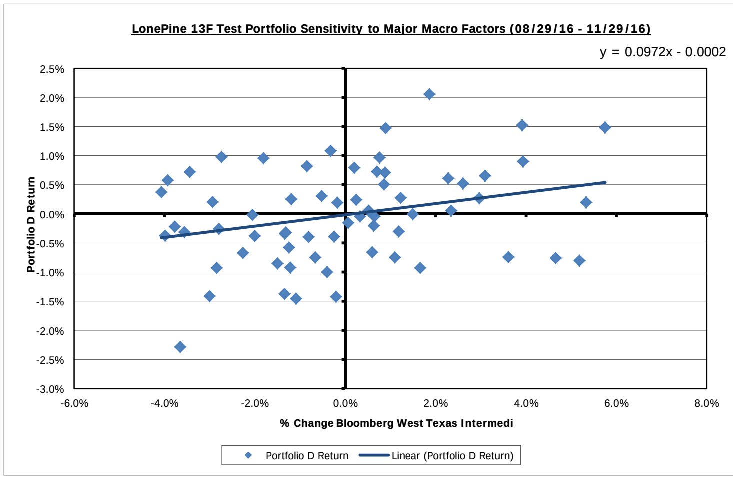


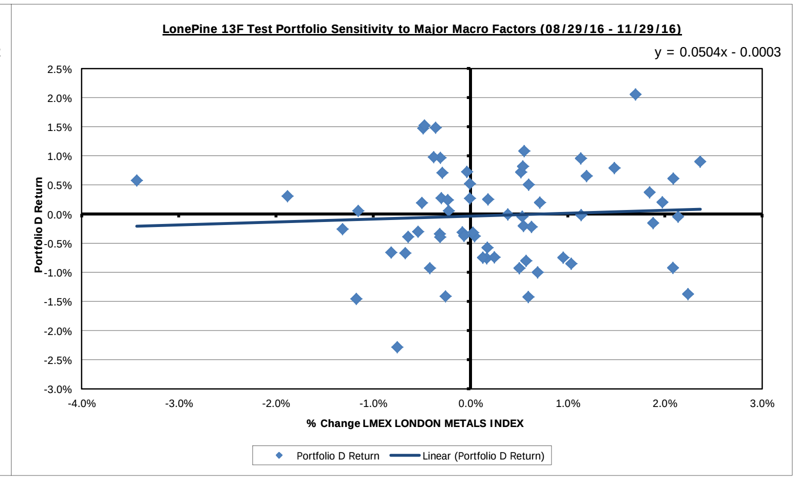


LonePine 13F Test Portfolio Sensitivity to Major Macro Factors (08/29/16 - 11/29/16): Correlation Matrix



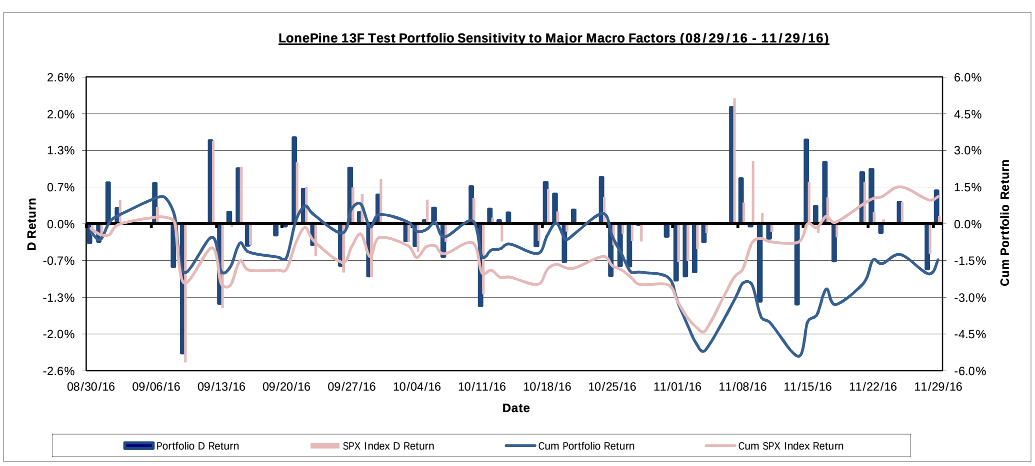






Latest 5d Change	Latest 1m Change	Latest 3m Change	Asset	Latest 5d z-Score	Latest 1m z-Score	Latest 3m z-Score
1.0%	0.5%	-1.5%	Portfolio D Return	0.5	0.1	(0.2)
0.3%	3.7%	1.1%	SPX Index	0.2	1.1	0.2
0.2%	-2.0%	-2.3%	.R1KGV Index	0.3	(1.1)	(0.7)
-0.2%	0.5%	4.4%	.HFVIPR1K Index	(0.4)	0.4	2.0
1.8%	-2.2%	-5.3%	GSMEFMOM Index	1.1	(0.6)	(0.9)
0.2%	7.9%	5.5%	.R2KSPX Index	0.1	2.7	1.1
(0.06)	0.18	0.48	USSWIT10 Index	(1.0)	1.4	2.2
(0.02)	0.44	0.73	GT10 Govt	(0.2)	2.1	2.0
-0.1%	2.6%	5.6%	DXY Curncy	(0.1)	1.4	1.8
-4.8%	-7.1%	-3.7%	USCRWTIC Index	(0.9)	(0.6)	(0.2)
1.9%	10.9%	17.0%	LMEX Index	0.8	2.2	2.0

Isolated Single Factor Change	Expected Portfolio Return	Asset
1.0%	1.0%	SPX Index
0.5%	0.4%	.R1KGV Index
0.5%	0.6%	.HFVIPR1K Index
1.0%	0.3%	GSMEFMOM Index
1.0%	0.2%	.R2KSPX Index
0.05	0.3%	USSWIT10 Index
0.1	-0.6%	GT10 Govt
0.5%	-0.2%	DXY Curncy
4.0%	0.4%	USCRWTIC Index
1.5%	0.1%	LMEX Index



LonePine 13F Test Portfolio Sensitivity to Major Macro Factors (08/29/16 - 11/29/16)

Stock Return Correlation to Major Macro Factors

Note: using excess returns, as opposed to returns, can produce significantly different results esp. if vol of returns and/or spread returns are low.

						yields	*yields*			
Correl wrt SPX Index -->	*1.0*	*(0.1)*	*0.2*	*(0.1)*	*0.4*	*0.4*	*(0.0)*	*(0.0)*	*0.4*	*0.3*
Item	**SPX Index**	**.R1KGV Index**	**.HFVIPR1K Index**	**GSMEFMOM Index**	**.R2KSPX Index**	**USSWIT10 Index**	**GT10 Govt**	**DXY Curncy**	**USCRWTIC Index**	**LMEX Index**
1	ALGN US 0.7	MSFT US 0.5	FLT US 0.4	MNST US 0.4	HLT US 0.5	VMC US 0.5	ICE US 0.3	HLT US 0.1	LNG US 0.6	VMC US 0.3
2	V US 0.6	GOOG US 0.5	BABA US 0.4	EQIX US 0.4	VMC US 0.4	SHPG US 0.4	VMC US 0.3	ADS GR 0.1	WMB US 0.5	HLT US 0.3
3	MSFT US 0.6	ATVI US 0.4	GOOG US 0.4	STZ US 0.4	SHPG US 0.3	KMI US 0.4	SHPG US 0.3	ICE US 0.1	KMI US 0.4	KMI US 0.2
4	GOOG US 0.6	EA US 0.4	FB US 0.4	ATVI US 0.4	MHK US 0.3	ICE US 0.4	BME LN 0.2	YUM US 0.1	GOOG US 0.4	LNG US 0.2
5	WMB US 0.6	MNST US 0.4	V US 0.4	ADBE US 0.3	CHTR US 0.3	WMB US 0.4	KMI US 0.1	COMM US 0.1	FB US 0.4	PCLN US 0.2
6	ADBE US 0.6	FB US 0.4	CHTR US 0.4	AVGO US 0.3	ALGN US 0.3	V US 0.3	COMM US 0.1	VMC US 0.1	AMZN US 0.3	ICE US 0.2
7	HLT US 0.6	AVGO US 0.4	WMB US 0.3	EA US 0.3	WMB US 0.3	FLT US 0.3	WMB US 0.0	BME LN 0.1	FLT US 0.3	SHPG US 0.2
8	AMZN US 0.6	STZ US 0.4	MSFT US 0.3	GOOG US 0.3	KMI US 0.2	MHK US 0.2	330 HK 0.0	SHPG US 0.1	EBAY US 0.3	ALGN US 0.2
9	KMI US 0.6	NKE US 0.4	ADS GR 0.3	BABA US 0.3	COMM US 0.2	EBAY US 0.2	HLT US 0.0	FLT US 0.0	MNST US 0.3	TDG US 0.2
10	YUM US 0.5	AMZN US 0.3	EXPE US 0.3	TDG US 0.3	DLTR US 0.2	CHTR US 0.2	TOWR IJ 0.0	HCA US 0.0	PCLN US 0.3	WMB US 0.2
11	PCLN US 0.5	BABA US 0.3	PCLN US 0.3	AMZN US 0.3	FLT US 0.2	DLTR US 0.2	FLT US 0.0	330 HK 0.0	BABA US 0.3	FLT US 0.1
12	CHTR US 0.5	V US 0.3	TDG US 0.3	MSFT US 0.2	BME LN 0.2	LNG US 0.2	ADS GR 0.0	MHK US 0.0	TV US 0.3	DLTR US 0.1
13	BABA US 0.5	ADBE US 0.3	ATVI US 0.2	PCLN US 0.2	EBAY US 0.2	BME LN 0.2	HDB US 0.0	NKE US 0.0	V US 0.3	EBAY US 0.1
14	FB US 0.5	PCLN US 0.3	AMZN US 0.2	EXPE US 0.2	YUM US 0.1	PCLN US 0.2	MHK US 0.0	ALGN US 0.0	STZ US 0.2	LULU US 0.1
15	MHK US 0.5	TDG US 0.3	ALGN US 0.2	FB US 0.2	HDB US 0.1	ALGN US 0.2	YUM US 0.0	KMI US 0.0	EQIX US 0.2	COMM US 0.1
16	LNG US 0.5	CHTR US 0.3	330 HK 0.2	TV US 0.2	ICE US 0.1	YUM US 0.1	LNG US 0.0	MSFT US 0.0	ADBE US 0.2	CHTR US 0.1
17	AVGO US 0.5	ADS GR 0.2	NKE US 0.2	ULTA US 0.2	ULTA US 0.1	TDG US 0.1	NKE US 0.0	TOWR IJ 0.0	HCA US 0.2	FB US 0.1
18	VMC US 0.5	EQIX US 0.2	EBAY US 0.2	CHTR US 0.2	ADS GR 0.1	FB US 0.1	ALGN US -0.1	LNG US -0.1	ADS GR 0.2	YUM US 0.1
19	ADS GR 0.5	EXPE US 0.2	EA US 0.2	V US 0.2	NKE US 0.1	330 HK 0.1	DLTR US -0.1	AMZN US -0.1	MSFT US 0.2	EXPE US 0.0
20	FLT US 0.5	TV US 0.2	HDB US 0.2	HCA US 0.2	LNG US 0.1	HLT US 0.1	ULTA US -0.1	DLTR US -0.1	EXPE US 0.2	MNST US 0.0
21	ICE US 0.5	LULU US 0.1	ADBE US 0.2	YUM US 0.1	LULU US 0.1	BABA US 0.1	LULU US -0.1	WMB US -0.1	ALGN US 0.2	AMZN US 0.0
22	SHPG US 0.5	330 HK 0.1	MHK US 0.2	DLTR US 0.1	V US 0.0	HDB US 0.1	EBAY US -0.1	EA US -0.1	BME LN 0.2	GOOG US 0.0
23	STZ US 0.4	HCA US 0.1	STZ US 0.2	ALGN US 0.1	EQIX US 0.0	ADS GR 0.1	V US -0.1	TV US -0.1	TDG US 0.2	MHK US 0.0
24	MNST US 0.4	ULTA US 0.1	KMI US 0.2	FLT US 0.0	ADBE US 0.0	ULTA US 0.1	CHTR US -0.2	ULTA US -0.1	AVGO US 0.1	TV US 0.0
25	TDG US 0.4	MHK US 0.1	SHPG US 0.1	330 HK 0.0	TDG US 0.0	NKE US 0.1	PCLN US -0.2	HDB US -0.1	ULTA US 0.1	NKE US 0.0
26	EQIX US 0.4	YUM US 0.1	LULU US 0.1	ADS GR 0.0	MSFT US 0.0	MSFT US 0.1	EA US -0.3	EBAY US -0.1	VMC US 0.1	AVGO US 0.0
27	NKE US 0.4	EBAY US 0.1	LNG US 0.1	EBAY US 0.0	BABA US 0.0	LULU US 0.1	MSFT US -0.3	STZ US -0.1	YUM US 0.1	V US 0.0
28	TV US 0.4	DLTR US 0.1	BME LN 0.1	NKE US 0.0	AMZN US -0.1	GOOG US 0.0	EXPE US -0.3	V US -0.1	ATVI US 0.1	EQIX US -0.1
29	EBAY US 0.4	ALGN US 0.1	AVGO US 0.1	BME LN 0.0	TOWR IJ -0.1	AMZN US 0.0	ADBE US -0.3	LULU US -0.1	330 HK 0.1	ULTA US -0.1
30	EA US 0.4	FLT US 0.0	HCA US 0.1	HDB US 0.0	TV US -0.1	COMM US 0.0	HCA US -0.3	AVGO US -0.2	SHPG US 0.1	BABA US -0.1
31	DLTR US 0.3	HLT US 0.0	HLT US 0.1	TOWR IJ 0.0	EA US -0.1	TOWR IJ 0.0	AMZN US -0.3	EQIX US -0.2	EA US 0.0	TOWR IJ -0.1
32	HDB US 0.3	BME LN 0.0	MNST US 0.1	HLT US 0.0	FB US -0.1	ADBE US 0.0	AVGO US -0.4	GOOG US -0.2	COMM US 0.0	STZ US -0.1
33	EXPE US 0.3	HDB US 0.0	TV US 0.1	COMM US -0.1	PCLN US -0.1	EXPE US -0.1	GOOG US -0.4	PCLN US -0.2	MHK US 0.0	ADBE US -0.1
34	ULTA US 0.3	TOWR IJ -0.1	VMC US 0.0	MHK US -0.1	AVGO US -0.1	MNST US -0.1	FB US -0.4	FB US -0.2	ICE US 0.0	HCA US -0.1
35	COMM US 0.3	SHPG US -0.1	EQIX US 0.0	LNG US -0.1	MNST US -0.1	STZ US -0.1	ATVI US -0.4	EXPE US -0.2	DLTR US 0.0	ADS GR -0.1
36	HCA US 0.3	ICE US -0.2	ICE US 0.0	LULU US -0.1	GOOG US -0.1	AVGO US -0.1	TDG US -0.4	ADBE US -0.2	HLT US -0.1	MSFT US -0.1
37	ATVI US 0.3	COMM US -0.2	COMM US 0.0	ICE US -0.2	330 HK -0.2	TV US -0.2	EQIX US -0.4	ATVI US -0.3	NKE US -0.1	BME LN -0.1
38	LULU US 0.2	WMB US -0.3	DLTR US 0.0	WMB US -0.2	EXPE US -0.2	EQIX US -0.2	BABA US -0.4	MNST US -0.3	TOWR IJ -0.1	HDB US -0.2
39	BME LN 0.2	LNG US -0.3	ULTA US 0.0	KMI US -0.3	ATVI US -0.2	EA US -0.2	TV US -0.4	CHTR US -0.3	HDB US -0.1	330 HK -0.2
40	330 HK 0.0	VMC US -0.3	YUM US 0.0	VMC US -0.3	STZ US -0.2	ATVI US -0.2	STZ US -0.5	BABA US -0.3	CHTR US -0.1	ATVI US -0.3
41	TOWR IJ -0.1	KMI US -0.4	TOWR IJ -0.1	SHPG US -0.4	HCA US -0.2	HCA US -0.2	MNST US -0.5	TDG US -0.3	LULU US -0.2	EA US -0.3

LonePine 13F Test Portfolio Sensitivity to Major Macro Factors (08/29/16 - 11/29/16)

-	*<-- Correl Bucket [Correl(Ticker,SPX Index D Return)] -->*			
Low -ve Correl	**Random**	**Low +ve Correl**	**Mod +ve Correl**	**Strong +ve Correl**
	TOWR IJ -0.13	ATVI US 0.28	FB US 0.52	
	330 HK 0.03	HCA US 0.28	BABA US 0.52	
	BME LN 0.21	COMM US 0.30	CHTR US 0.52	
	LULU US 0.23	ULTA US 0.31	PCLN US 0.53	
		EXPE US 0.33	YUM US 0.55	
		HDB US 0.34	KMI US 0.58	
		DLTR US 0.35	AMZN US 0.59	
		EA US 0.37	HLT US 0.59	
		EBAY US 0.40	ADBE US 0.59	
		TV US 0.41	WMB US 0.60	
		NKE US 0.42	GOOG US 0.62	
		EQIX US 0.44	MSFT US 0.62	
		TDG US 0.44	V US 0.62	
		MNST US 0.44	ALGN US 0.65	
		STZ US 0.45		
		SHPG US 0.46		
		ICE US 0.46		
		FLT US 0.46		
		ADS GR 0.47		
		VMC US 0.47		
		AVGO US 0.49		
		LNG US 0.49		
		MHK US 0.50		

Correl Bucket	**l(Ticker,SPX Index D Return)**	**Long**	**Short**	- **Net**	- *Beta wrt SPX Index D Return* **Risk-adj Net**
	(0.50)				
Low -ve Correl	(0.25)	0%	0%	0%	0%
Random	0.25	3%	0%	3%	1%
Low +ve Correl	0.50	60%	0%	60%	59%
Mod +ve Correl	0.75	37%	0%	37%	42%
trong +ve Correl	1.00	0%	0%	0%	0%
Total		*100%*	*0%*	*100%*	*103%*