

Appendices

July 31, 2024

1 List of Component Stocks

30 Staple Companies	Letter	Ticker
Aboitiz Equity Ventures Inc.	A	AEV
Aboitiz Power Corp.	B	AP
Alliance Global Group Inc.	C	AGI
Ayala Corp.	D	AC
Ayala Land Inc.	E	ALI
Bank of the Philippine Islands	F	BPI
BDO Unibank, Inc.	G	BDO
Bloomerry Resorts Corporation	H	BLOOM
DMCI Holdings Inc.	I	DMC
First Gen Corporation	J	FGEN
Globe Telecom Inc.	K	GLO
GT Capital Holdings, Inc.	L	GTCAP
International Container Terminal Services, Inc.	M	ICT
JG Summit Holdings Inc.	N	JGS
Jollibee Foods Corp.	O	JFC
LT Group, Inc.	P	LTG
Manila Electric Co.	Q	MER
Megaworld Corp.	R	MEG
Metro Pacific Investments Corporation	S	MPI
Metropolitan Bank & Trust Co.	T	MBT
Petron Corp.	U	PCOR
PLDT, Inc.	V	TEL
Puregold Price Club Inc.	W	PGOLD
Robinsons Land Corp.	X	RLC
San Miguel Corp.	Y	SMC
Security Bank Corp. (Philippines)	Z	SECB
Semirara Mining & Power Corp.	α	SCC
SM Investments Corporation	β	SM
SM Prime Holdings, Inc.	θ	SMPH
Universal Robina Corp.	ϵ	URC

Table 1: Assigned Letter and Company Ticker

2 Feasibility Test

2.1 Benchmark Computation

Each benchmark was computed as the average year-on-year growth rate of the annual averages of daily stock market indices in the Philippine stock market. To account for each group's standardized

period of consideration, we adjusted the benchmark calculations by matching the time horizon within which historical data was collected with a group's standardized period.

2.1.1 Group 1

Benchmark: 7.59%

Standardized Period: December 18, 2006 to June 30, 2023

Annual Averages	
2006	2,366.1
2007	3,424.6
2008	2,631.2
2009	2,477.5
2010	3,519.3
2011	4,185.7
2012	5,171.6
2013	6,478.9
2014	6,792.7
2015	7,435.9
2016	7,295.7
2017	7,843.0
2018	7,740.6
2019	7,907.9
2020	6,348.9
2021	6,853.7
2022	6,669.3
2023	6,483.5

Table 2: Annual Averages over the period 2006-2023

2.1.2 Group 2

Benchmark: 2.62%

Standardized Period: April 20, 2012 to June 30, 2023

Annual Averages	
2012	5,171.6
2013	6,478.9
2014	6,792.7
2015	7,435.9
2016	7,295.7
2017	7,843.0
2018	7,740.6
2019	7,907.9
2020	6,348.9
2021	6,853.7
2022	6,669.3
2023	6,483.5

Table 4: Annual Averages over the period 2012-2023

YoY Growth Rates (%)	
2007	44.74
2008	-23.17
2009	-5.84
2010	42.05
2011	18.93
2012	23.55
2013	25.28
2014	4.84
2015	9.47
2016	-1.88
2017	7.50
2018	-1.31
2019	2.16
2020	-19.71
2021	7.95
2022	-2.69
2023	-2.79

Table 3: YoY Growth rates (%) over the period 2006-2023

YoY Growth Rates (%)	
2013	25.28
2014	4.84
2015	9.47
2016	-1.88
2017	7.50
2018	-1.31
2019	2.16
2020	-19.71
2021	7.95
2022	-2.69
2023	-2.79

Table 5: YoY Growth rates (%) over the period 2012-2023

2.1.3 Group 3

Benchmark: 5.27%

Standardized Period: July 16, 2007 to June 30, 2023

Annual Averages	
2007	3424.59
2008	2631.22
2009	2477.53
2010	3519.30
2011	4185.67
2012	5171.60
2013	6478.93
2014	6792.74
2015	7435.87
2016	7295.73
2017	7843.03
2018	7740.64
2019	7907.89
2020	6348.86
2021	6853.68
2022	6669.30
2023	6483.50

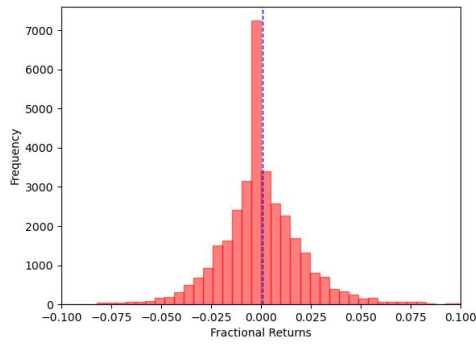
Table 6: Annual Averages over the period 2007-2023

YoY Growth Rates (%)	
2008	-23.17
2009	-5.84
2010	42.05
2011	18.93
2012	23.55
2013	25.28
2014	4.84
2015	9.47
2016	-1.88
2017	7.50
2018	-1.31
2019	2.16
2020	-19.71
2021	7.95
2022	-2.69
2023	-2.79

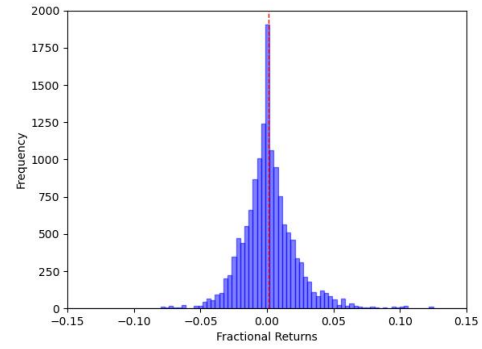
Table 7: YoY Growth rates (%) over the period 2007-2023

2.2 Trading One Random Sequence per Week

2.2.1 Group 1



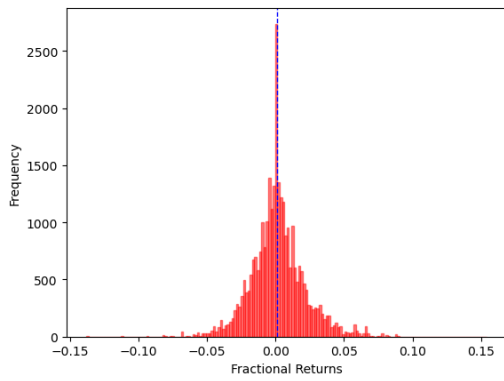
(a) Day-4 Returns



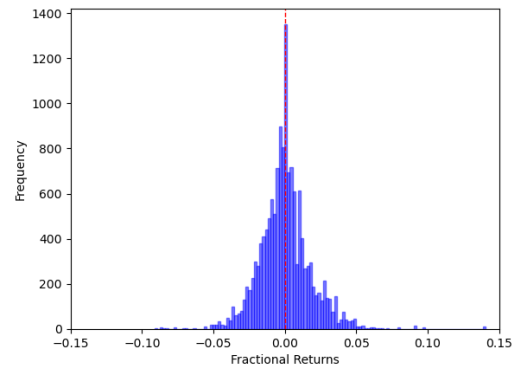
(b) Day-5 Returns

Figure 1: Histograms of Day-4 and Day-5 Fractional Returns in Group 1

2.2.2 Group 2



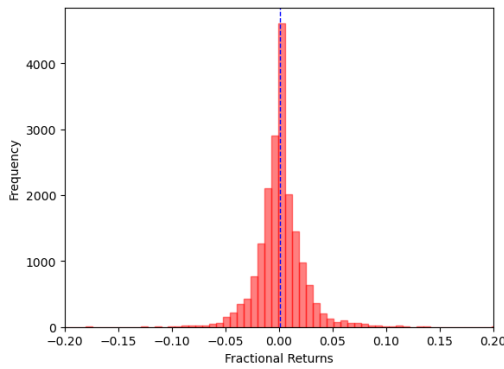
(a) Day-4 Returns



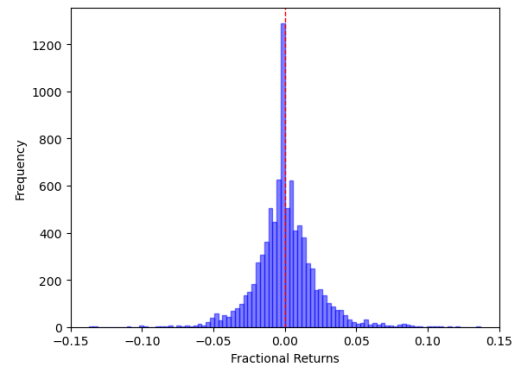
(b) Day-5 Returns

Figure 2: Histograms of Day-4 and Day-5 Fractional Returns in Group 2

2.2.3 Group 3



(a) Day-4 Returns

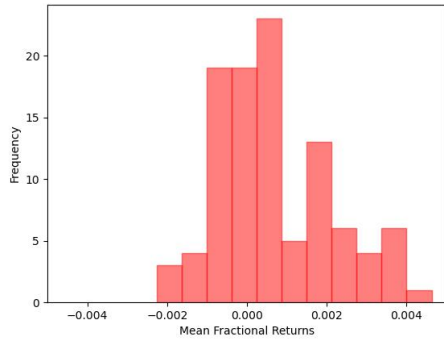


(b) Day-5 Returns

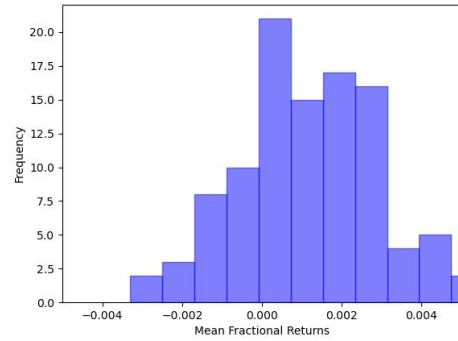
Figure 3: Histograms of Day-4 and Day-5 Fractional Returns in Group 3

2.3 Trading Multiple Sequences per Week

2.3.1 Group 1



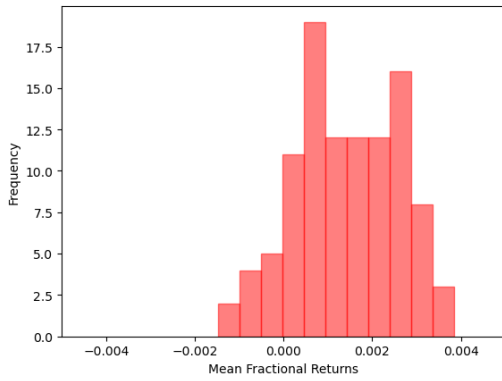
(a) Day-4 Average Returns



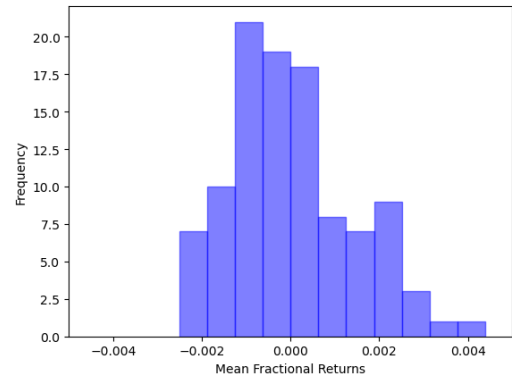
(b) Day-5 Average Returns

Figure 4: Histograms of Day-4 and Day-5 Average Fractional Returns in Group 1

2.3.2 Group 2



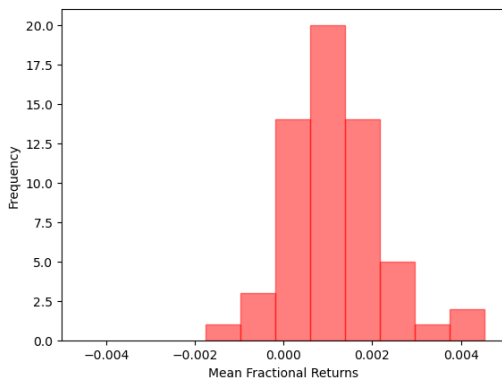
(a) Day-4 Average Returns



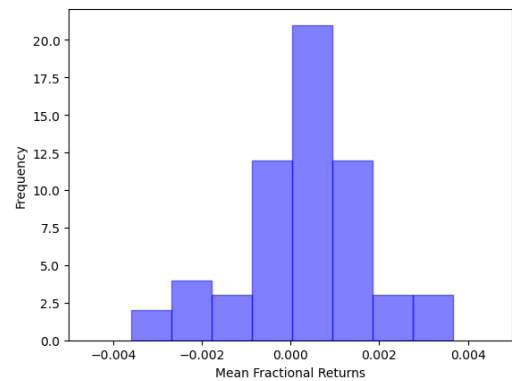
(b) Day-5 Average Returns

Figure 5: Histograms of Day-4 and Day-5 Average Fractional Returns in Group 2

2.3.3 Group 3



(a) Day-4 Average Returns



(b) Day-5 Average Returns

Figure 6: Histograms of Day-4 and Day-5 Average Fractional Returns in Group 3

3 Table of Values

Group 1		Overall Average Fractional Returns (<i>scaled</i>)	
		<i>Day 4</i>	<i>Day 5</i>
	<i>per transaction</i>	0.000573	0.000856
	<i>per week</i>	0.001429	
	<i>per annum</i>	0.07431	
		Weighted Average of Average Fractional Returns per Sequence (<i>scaled</i>)	
		<i>Day 4</i>	<i>Day 5</i>
	<i>per transaction</i>	0.000573	0.000856
	<i>per week</i>	0.001429	
	<i>per annum</i>	0.07429	

Table 9: Fractional Return Values of Group 1

Group 1		Overall Average Fractional Returns (<i>scaled</i>)	
		<i>Day 4</i>	<i>Day 5</i>
	<i>Probability of Gain</i>	0.547649	0.535206
	<i>Probability of Loss</i>	0.452351	0.464794
	<i>Average Gain</i>	0.012996	0.012982
	<i>Average Loss</i>	-0.014469	-0.014469
		Weighted Average of Average Fractional Returns per Sequence (<i>scaled</i>)	
		<i>Day 4</i>	<i>Day 5</i>
	<i>Probability of Gain</i>	0.621359	0.757282
	<i>Probability of Loss</i>	0.378641	0.242718
	<i>Average Gain</i>	0.001327	0.001414
	<i>Average Loss</i>	-0.000578	-0.000824

Table 10: Other Relevant Values in Group 1

4 Python Scripts

The data files, codes and results of this study can be accessed through this link:
<https://bit.ly/AMFThesisCodesRepository>

Group 2		Overall Average Fractional Returns (<i>scaled</i>)	
		<i>Day 4</i>	<i>Day 5</i>
	<i>per transaction</i>	0.001335	4.45×10^{-6}
	<i>per week</i>	0.00134	
	<i>per annum</i>	0.06964	
		Weighted Average of Average Fractional Returns per Sequence (<i>scaled</i>)	
		<i>Day 4</i>	<i>Day 5</i>
	<i>per transaction</i>	0.001333	4.73×10^{-6}
	<i>per week</i>	0.00134	
	<i>per annum</i>	0.06957	

Table 11: Fractional Return Values of Group 2

Group 2		Overall Average Fractional Returns (<i>scaled</i>)	
		<i>Day 4</i>	<i>Day 5</i>
	<i>Probability of Gain</i>	0.548403	0.505833
	<i>Probability of Loss</i>	0.451597	0.494167
	<i>Average Gain</i>	0.01343	0.01073
	<i>Average Loss</i>	-0.01335	-0.01097
		Weighted Average of Average Fractional Returns per Sequence (<i>scaled</i>)	
		<i>Day 4</i>	<i>Day 5</i>
	<i>Probability of Gain</i>	0.875	0.451923
	<i>Probability of Loss</i>	0.125	0.54808
	<i>Average Gain</i>	0.00159	0.00102
	<i>Average Loss</i>	-0.00050	-0.00083

Table 12: Other Relevant Values in Group 2

Group 3		Overall Average Fractional Returns (<i>scaled</i>)	
		<i>Day 4</i>	<i>Day 5</i>
	<i>per transaction</i>	0.001108	0.000274
	<i>per week</i>	0.001382	
	<i>per annum</i>	0.071888	
		Weighted Average of Average Fractional Returns per Sequence (<i>scaled</i>)	
		<i>Day 4</i>	<i>Day 5</i>
	<i>per transaction</i>	0.001108	0.00016
	<i>per week</i>	0.001237	
	<i>per annum</i>	0.064304	

Table 13: Fractional Return Values of Group 3

Group 3		Overall Average Fractional Returns (<i>scaled</i>)	
		<i>Day 4</i>	<i>Day 5</i>
	<i>Probability of Gain</i>	0.5607	0.5314
	<i>Probability of Loss</i>	0.4393	0.4685
	<i>Average Gain</i>	0.013075	0.010826
	<i>Average Loss</i>	-0.014160	-0.011761
		Weighted Average of Average Fractional Returns per Sequence (<i>scaled</i>)	
		<i>Day 4</i>	<i>Day 5</i>
	<i>Probability of Gain</i>	0.9	0.667
	<i>Probability of Loss</i>	0.1	0.3333
	<i>Average Gain</i>	0.001265	0.000908
	<i>Average Loss</i>	-0.000579	-0.000920

Table 14: Other Relevant Values in Group 3