



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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ภาคผนวก ก

แสดงอัตราผลตอบแทนของหลักทรัพย์เฉลี่ยรายสัปดาห์โดยคิดเป็นร้อยละ

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ภาคผนวก ก

ข้อมูลดัชนีตลาดหลักทรัพย์ และราคาปิดของหลักทรัพย์ในกลุ่มพาณิชย์

DATE	SET	BIGC	MAKRO	SPC	MINOR
20/12/1998	341.92				6.25
27/12/1998	356.16	7.1	71.5	3.6	
3/1/1999	355.81	7.4	71	3.7	
10/1/1999	399.42999	7.7	83.5	4.1	6.5
17/1/1999	381.82001	7.7	78	4.25	6.125
24/1/1999	376.48001	8.2	77	4.25	7
31/1/1999	363	11.5	73	4.2	6.5
7/2/1999	337.95999	10	70	4.2	6.5
14/2/1999	347.42999	10	70.5		
21/2/1999	336.57001	11.5	70	4.2	7
28/2/1999	340.94	11.25	69.5	3.9	9.125
7/3/1999	336.20999	10.5	70	3.9	8.625
14/3/1999	345.79001	10	72	3.85	8.625
21/3/1999	367.69	11.5	70	3.95	8.875
28/3/1999	366.91	10.5	66.5	4.1	9.125
4/4/1999	357.10001	13	65	4.1	9
11/4/1999	371.95001	13	62	4	8.75
18/4/1999	402.54001	13	67.5	4.175	9
25/4/1999	401.07001	15.75	66.5	4.5	10
2/5/1999	459.35001	18	68		9.75
9/5/1999	488.35001	19	81.5	5.8	7.5
16/5/1999	474.89999	19	77.5	5.2	7.25
23/5/1999	479.32999	18.25	80	5.2	7.375

DATE	SET	BIGC	MAKRO	SPC	MINOR
30/5/1999	453.60001	17	77.5	4.9	7.625
6/6/1999	476.47	18.75	76	5.45	7.75
13/6/1999	507.06	18	73.5	5	8
20/6/1999	518.81	17	71.5	5.1	8.5
27/6/1999	543.84998	16.75	71.5	5.6	9
4/7/1999	533.33002	17.25	66	5.5	8.75
11/7/1999	509.57999	18.75	72	6	10.5
18/7/1999	488.51001	21	69	6	9.75
25/7/1999	475.73001	22.25	71.5	5.4	9.125
1/8/1999	456.81	24.25	71.5	5.5	9.25
8/8/1999	437.04001	21.25	69	5.6	8.75
15/8/1999	423.78	21.5	68	5.4	8.25
22/8/1999	440.51001	22.5	68	5	9
29/8/1999	457.54001	22.75	72	6	9.125
5/9/1999	431.12	23.75	74.5	5	8.875
12/9/1999	430.91	23.25	73.5	4.9	8.875
19/9/1999	438.16	21.75	70.5	4.9	8.625
26/9/1999	382.01001	17.75	66	4.65	8.75
3/10/1999	407.23001	19	72	4.9	8.75
10/10/1999	393.01999	18.75	69		8.75
17/10/1999	385.39999	18.5	68	4.675	9
24/10/1999	377.16	18.25	66	4.6	9.25
31/10/1999	395.54999	20	64.5	4.725	9
7/11/1999	418.47	20	68	4.75	9.625
14/11/1999	432.01999	21.5	70	4.725	10.5
21/11/1999	411.54999	22	66.5	4.15	9.375
28/11/1999	412.31	21	64	4.25	8.75
5/12/1999	414.42001	22.75	61	4.25	9.125

DATE	SET	BIGC	MAKRO	SPC	MINOR
12/12/1999	419.76999	23	57	4.4	9.125
19/12/1999	439.32001	24.5	53.5	4.075	9
26/12/1999	461.29001	24.75	49.5	4.2	9.625
2/1/2000	481.92001	25.25	53	4.325	10
9/1/2000	453.31	22.75	47.25	4.25	10.5
16/1/2000	474.37	22.5	49	4.175	10.25
23/1/2000	478.92001	22.5	51.5	4.575	10.5
30/1/2000	477.45001	22.75	51.5	4.6	10.375
6/2/2000	470.34	21.75	49	4.625	10.25
13/2/2000	456.12	19.75	48	4	11
20/2/2000	408.35001	16.75	41.25	4.275	10.75
27/2/2000	406.66	17.25	49	4.275	10.75
5/3/2000	383.13	16.25	48.5	4.4	11.125
12/3/2000	402.39999	16.5	47	5	11.5
19/3/2000	399.73999	16.5	46.5		13.625
26/3/2000	404.16	17	43		13.125
2/4/2000	400.32001	16.75	44.75	4.65	13.5
9/4/2000	403.45001	17.25	44.25	4.65	14.125
16/4/2000	414.45001	17.75	49		15.375
23/4/2000	395.06	17	47	4.5	15
30/4/2000	390.39999	16.5	46.5	4.4	15.125
7/5/2000	379.97	16	45.5		10.125
14/5/2000	345.67001	15	45	4.3	9.375
21/5/2000	343.39999	15.5	44.75	4.35	8.875
28/5/2000	313.07999	14.5	41.75	4.3	8.375
4/6/2000	339.28	15.25	44.5	4.3	8.875
11/6/2000	341.35001	15	42.75	4.1	8.75
18/6/2000	344.48999	17.25	44	4.375	8.625

DATE	SET	BIGC	MAKRO	SPC	MINOR
25/6/2000	333.31	17.25	43.25	4.125	8.625
2/7/2000	325.69	17	46.5	4.4	8.5
9/7/2000	322.87	17.25	47.75	4.15	9.125
16/7/2000	315.57999	15.75	46.5	4	8.75
23/7/2000	305.66	15.5	46	3.8	8.5
30/7/2000	291.60001	15.25	45	3.8	8.625
6/8/2000	311.42001	16.25	47.25	4	8.375
13/8/2000	316.60001	16.75	47.75	3.975	8.375
20/8/2000	319.22	16.5	48		8.5
27/8/2000	306.84	17	48.25		8.25
3/9/2000	310.73001	17	54	3.9	8.5
10/9/2000	297.07001	17.5	54.5		8
17/9/2000	293.29999	16.25	51.5	3.875	8.125
24/9/2000	274.14001	15.5	49.5	4	8
1/10/2000	277.29001	15.25	50	4.4	8.25
8/10/2000	267.67999	14.75	46.5	4.55	8.25
15/10/2000	254.25999	14	48.75		8.25
22/10/2000	276.60001	15	51	4.4	8.375
29/10/2000	274.34	14.75	52	4.45	7.875
5/11/2000	287.84	15	52	4.925	8
12/11/2000	293.23001	15.25	54.5	4.925	8.125
19/11/2000	294.70999	15.5	56	5.15	7.875
26/11/2000	285.42001	15	55	5.2	7.5
3/12/2000	273.85999	14.5	52.5	5.2	7.375
10/12/2000	273.69	14.75	54	5.2	7.5
17/12/2000	273.17001	14.75	53.5	5.3	7.5
24/12/2000	267.09	14.5	50	5.2	7.5
31/12/2000	269.19	14.75	52	5.8	7.25

DATE	SET	BIGC	MAKRO	SPC	MINOR
7/1/2001	286.76001	14.75	54.5	5.8	6.875
14/1/2001	311.25	15	55	5.7	6.875
21/1/2001	316.85999	14.75	55	5.5	6.625
28/1/2001	332.13	14.5	54.5	5.1	6.25
4/2/2001	334.10001	15	55		6.375
11/2/2001	324.72	15	57.5		6.75
18/2/2001	316	15	59	5	6.5
25/2/2001	324.23999	15	59	5.5	6.375
4/3/2001	306.04999	15.5	58.5		6.5
11/3/2001	307	16	58		6.375
18/3/2001	293	15.75	57.5	5.5	6.375
25/3/2001	290.25	15.5	55.5		6.125
1/4/2001	291.94	16	62.5	5.7	6
8/4/2001	282.01999	15.75	59		5.75
15/4/2001	291.28	16.25	59	5.75	5.625
22/4/2001	292.57999	16	55	5.75	5.625
29/4/2001	297.20999	15.75	56.5	5.8	5.625
6/5/2001	306.48001	15.75	56		5.875
13/5/2001	310.92999	15.5	52.5	5.7	5.875
20/5/2001	300.64001	16	51	5.8	5.875
27/5/2001	311.10999	15.75	52	5.75	6.625
3/6/2001	312.06	15.75	51.5	6	6.75
10/6/2001	312.29001	16.25	51.5		7.125
17/6/2001	323.97	16	50.5	5.8	7.125
24/6/2001	318.67001	16	50	6	7.375
1/7/2001	322.54999	15.75	50	6	7.5
8/7/2001	324.88	16.5	51	6.05	7.875
15/7/2001	314.31	16.5	48.25	6.25	7.125

DATE	SET	BIGC	MAKRO	SPC	MINOR
22/7/2001	312.26999	16.5	48.75	6.05	7
29/7/2001	301.09	16.25	48	6.1	6.875
5/8/2001	315.95001	16.75	49.25	6.1	7
12/8/2001	315.87	18.75	52	6.05	7.25
19/8/2001	323.25	19.75	48.5	6.3	7
26/8/2001	332.17001	20.25	46	6	7.125
2/9/2001	335.57001	22	44.75	6.3	7
9/9/2001	342.32001	21.75	47.5		6.625
16/9/2001	288.10001	19.75	43	5.95	4.7
23/9/2001	274.60001	20.75	42.25	5.5	4.75
30/9/2001	277.04001	19.75	39.75	6.1	4.85
7/10/2001	280.88	20	41.5	6.2	5
14/10/2001	284.97	20	41.25	6.3	5.875
21/10/2001	284.72	19.75	41.75	6.3	5.875
28/10/2001	280.60001	20.25	41.75		5.375
4/11/2001	274.22	19.5	38.75	6.2	5
11/11/2001	268.10999	19	37.25	6.2	5.45
18/11/2001	275.54001	19	39.5	6.2	5
25/11/2001	296.76999	18.9	41	6.3	5.4
2/12/2001	302.62	20.2	41		5.15
9/12/2001	304.04999	20.2	40.25	6.2	5.15
16/12/2001	294	20	39.75	6	5.4
23/12/2001	296.69	20.1	40.75	6.4	5.3
30/12/2001	303.85001	19.6	39.5	6.75	5.35
6/1/2002	315.73001	19.9	39.75		5.25
13/1/2002	322.54999	19.9	39.75		5.3
20/1/2002	317.51999	21	39.5		5.3
27/1/2002	338.98999	21.8	39.75		5.5

DATE	SET	BIGC	MAKRO	SPC	MINOR
3/2/2002	336.64999	22.1	44	6.8	5.35
10/2/2002	353.59	22.5	43.25		5.85
17/2/2002	373.01999	22.9	42.5	6.7	6.05
24/2/2002	351.32001	22.2	41	6.5	6
3/3/2002	380.64999	25.75	41		5.95
10/3/2002	390.64999	24.5	42		6.1
17/3/2002	377.39001	23.1	39.75		6.2
24/3/2002	389.31	24.7	37.5	6	6.95
31/3/2002	373.95001	24.8	37.5	6	7.65
7/4/2002	369.98999	24.6	36.25	6.2	7.55
14/4/2002	379.63	25.75	38	6.3	7.6
21/4/2002	386.51001	24.2	40.5		7.75
28/4/2002	376.44	24.4	42	6.7	7.55
5/5/2002	374.04999	24.5	42		7
12/5/2002	382.09	25.25	45		6.95
19/5/2002	378.23001	22.7	44.75		7.05
26/5/2002	392.09	21.9	45.25		7.25
2/6/2002	407.95999	21.5	47.5	6.35	7.5
9/6/2002	417.32999	22	46.75	6.2	7.75
16/6/2002	422.44	22	51.5	6.2	7.9
23/6/2002	395.45999	19.7	43.75	5.75	7.45
30/6/2002	389.10001	20.9	44	5.7	7.45
7/7/2002	401.10001	22	45.25		7.35
14/7/2002	400.66	21.7	45.25	5.7	7.4
21/7/2002	394.26999	20.5	45		7.95
28/7/2002	366.47	19.4	43	5.6	7.4
4/8/2002	370.45999	19.4	45	5.5	7.2
11/8/2002	367.07001	19.5	45		7.3

DATE	SET	BIGC	MAKRO	SPC	MINOR
18/8/2002	373.03	21.2	45.75	5.5	7.45
25/8/2002	367.01001	20.8	46.25		7.9
1/9/2002	361.16	20.4	48.75	5	7.75
8/9/2002	353.54999	19.7	47.75	5.1	7.6
15/9/2002	357.14999	19.9	47.75		7.55
22/9/2002	351.51999	19.8	47.75	5.5	7.5
29/9/2002	338.72	18.8	47		7.25
6/10/2002	340.92001	19	45.75	5.8	7.35
13/10/2002	330.41	19	46		7.25
20/10/2002	342.45999	18.8	43		7.5
27/10/2002	348.45999	19.7	43.5		7.25
3/11/2002	357.67999	20.2	45	5.7	7.4
10/11/2002	355	19.8	42	5.65	7.35
17/11/2002	356.23999	20.1	36.25	5.7	7.5
24/11/2002	362.59	19.8	35.25		7.3
1/12/2002	364.89999	19.8	35.75	5.6	7.45
8/12/2002	365.09	19.6	35.5	6.3	7.5
15/12/2002	356.20001	19.5	33.75	6	7.4
22/12/2002	350.01001	17.6	31.5	6.1	7.5
29/12/2002	356.48001	16.5	32	6.3	7.35
5/1/2003	357.23001	17.2	32.5	6.3	7.5
12/1/2003	360.37	16.3	32.5		7.45
19/1/2003	367.16	17.4	34	6.3	7.5
26/1/2003	376.29999	16.9	34.5	6.5	8
2/2/2003	370.01001	16.6	34.5		7.8
9/2/2003	378.95001	16.3	34		7.65
16/2/2003	368.70999	15.2	33.5		7.9
23/2/2003	359.53	14.7	35		7.9

DATE	SET	BIGC	MAKRO	SPC	MINOR
2/3/2003	361.32001	14.5	35.75	6.55	7.8
9/3/2003	358.48001	14.3	34.75	7.5	7.95
16/3/2003	358.23999	13.4	34.5	6.5	8.2
23/3/2003	363.62	13.1	35	6	8.25
30/3/2003	369.53	12.8	36.25	5.95	8.3
6/4/2003	371.92999	13.6	32		8.2
13/4/2003	383.35999	15	32.5	5.9	8.95
20/4/2003	384.5	15.1	32.5	5.9	9.05
27/4/2003	368.53	13.5	31.25	5.75	9
4/5/2003	375.23999	13.7	31.25		9
11/5/2003	384.32001	14.6	32.25	5.9	8.3
18/5/2003	383	14.3	31.75	6	8.2
25/5/2003	395.51999	14	31.75	6.2	8.3
1/6/2003	403.82001	14.2	31.75	6	8.6
8/6/2003	418.20999	14.8	32.75	5.95	8.7
15/6/2003	427.97	15.3	35	6.45	8.9
22/6/2003	452.66	16.2	35	6.3	9
29/6/2003	457.51001	17.5	35	6.9	9.3
6/7/2003	495.72	18.2	37.5	8	10.8
13/7/2003	484.39001	17.9	38.25	7.7	11.3
20/7/2003	493.04001	18.2	38	8	11.2
27/7/2003	484.85999	17.9	38	9	11.2
3/8/2003	491.54001	18.5	38.5	8.9	11.4
10/8/2003	503.20001	18.8	38.5	9.2	12.3
17/8/2003	519.03998	18.9	37	9.45	12.4
24/8/2003	534.81	18.8	34.5	9.5	12.7
31/8/2003	537.71002	18.7	34	9.2	13
7/9/2003	557.81	18.4	32.5	10	14.3

DATE	SET	BIGC	MAKRO	SPC	MINOR
14/9/2003	568.37	18	33.5	10.5	13.9
21/9/2003	567.21002	18.1	33.75	10.4	13.7
28/9/2003	580.87	17.9	34	10.4	13.9
5/10/2003	558.34003	17.6	34.25	10.4	13.8
12/10/2003	582.15002	17.8	34.25	10.5	13.8
19/10/2003	588.59998	17.6	34.5	10.5	14
26/10/2003	609.25	17.4	35.25	12.5	13.8
2/11/2003	639.45001	17.6	37.75	11	14.2
9/11/2003	671	17.8	37.25	12	14.4
16/11/2003	657.38	18.3	42.75	12.4	15.6
23/11/2003	613.42999	17.5	38	12.7	15.1
30/11/2003	646.03003	18.3	44	13	15.1
7/12/2003	659.28998	18.7	45	11.5	15
14/12/2003	674.45001	18.7	44.5	12.5	15.1
21/12/2003	709.15002	18.6	44.75	11.8	14.4
28/12/2003	734.89001	18.4	45	12	14.1

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ภาคผนวก ข

ข้อมูลอัตราผลตอบแทนของตลาดหลักทรัพย์
และอัตราผลตอบแทนของหลักทรัพย์กลุ่มพาณิชย์

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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ภาคผนวก ข

ข้อมูลอัตราผลตอบแทนของตลาดหลักทรัพย์ และอัตราผลตอบแทนของหลักทรัพย์
กลุ่มพาณิชย์

หน่วย: ร้อยละต่อปีค่า

DATE	SET	Ri(BIGC)	Ri(MAKRO)	Ri(SPC)	Ri(MINOR)
3/1/1999	-0.09827	4.225352	-0.699300699	2.777778	
10/1/1999	12.25935	4.054054	17.6056338	10.81081	4
17/1/1999	-4.40878	0	-6.586826347	3.658537	-5.76923
24/1/1999	-1.39856	6.493506	-1.282051282	0	14.28571
31/1/1999	-3.58054	40.2439	-5.194805195	-1.176471	-7.14286
7/2/1999	-6.89807	-13.0435	-4.109589041		0
14/2/1999	2.802107	0	0.714285714	0	
21/2/1999	-3.1258	15	-0.709219858	0	7.692308
28/2/1999	1.29839	-2.17391	-0.714285714	-7.142857	30.35714
7/3/1999	-1.38734	-6.66667	0.71942446	0	-5.47945
14/3/1999	2.849416	-4.7619	2.857142857	-1.282051	0
21/3/1999	6.333321	15	-2.777777778	2.597403	2.898551
28/3/1999	-0.21214	-8.69565	-5	3.797468	2.816901
4/4/1999	-2.67368	23.80952	-2.255639098	0	-1.36986
11/4/1999	4.158499	0	-4.615384615	-2.439024	-2.77778
18/4/1999	8.224223	0	8.870967742	4.375	2.857143
25/4/1999	-0.36518	21.15385	-1.481481481	7.784431	11.11111
2/5/1999	14.53113	14.28571	2.255639098	28.88889	-2.5
9/5/1999	6.313269	5.555556	19.85294118	-10.34483	-23.0769
16/5/1999	-2.75418	0	-4.90797546	0	-3.33333
23/5/1999	0.932828	-3.94737	3.225806452	-5.769231	1.724138
30/5/1999	-5.36791	-6.84932	-3.125	11.22449	3.389831

หน่วย: ร้อยละต่อปีค่า

DATE	SET	Ri(BIGC)	Ri(MAKRO)	Ri(SPC)	Ri(MINOR)
6/6/1999	5.041885	10.29412	-1.935483871	-8.256881	1.639344
13/6/1999	6.420131	-4	-3.289473684	2	3.225806
20/6/1999	2.31728	-5.55556	-2.721088435	9.803922	6.25
27/6/1999	4.826426	-1.47059	0	-1.785714	5.882353
4/7/1999	-1.93435	2.985075	-7.692307692	9.090909	-2.77778
11/7/1999	-4.45316	8.695652	9.090909091	0	20
18/7/1999	-4.13477	12	-4.166666667	-10	-7.14286
25/7/1999	-2.61612	5.952381	3.623188406	1.851852	-6.41026
1/8/1999	-3.97705	8.988764	0	1.818182	1.369863
8/8/1999	-4.32784	-12.3711	-3.496503497	-3.571429	-5.40541
15/8/1999	-3.03405	1.176471	-1.449275362	-7.407407	-5.71429
22/8/1999	3.947805	4.651163	0	20	9.090909
29/8/1999	3.865973	1.111111	5.882352941	-16.66667	1.388889
5/9/1999	-5.77436	4.395604	3.472222222	-2	-2.73973
12/9/1999	-0.04871	-2.10526	-1.342281879	0	0
19/9/1999	1.682486	-6.45161	-4.081632653	-5.102041	-2.8169
26/9/1999	-12.815	-18.3908	-6.382978723		1.449275
3/10/1999	6.601921	7.042254	9.090909091	5.376344	0
10/10/1999	-3.48943	-1.31579	-4.166666667	-4.591837	0
17/10/1999	-1.93883	-1.33333	-1.449275362	-1.604278	2.857143
24/10/1999	-2.13804	-1.35135	-2.941176471	2.717391	2.777778
31/10/1999	4.875912	9.589041	-2.272727273	0.529101	-2.7027
7/11/1999	5.794466	0	5.426356589	-0.526316	6.944444
14/11/1999	3.237984	7.5	2.941176471	-12.16931	9.090909
21/11/1999	-4.73821	2.325581	-5	2.409639	-10.7143
28/11/1999	0.18467	-4.54545	-3.759398496	0	-6.66667
5/12/1999	0.511753	8.333333	-4.6875	3.529412	4.285714

หน่วย: ร้อยละต่อปีคาท

DATE	SET	Ri(BIGC)	Ri(MAKRO)	Ri(SPC)	Ri(MINOR)
12/12/1999	1.290956	1.098901	-6.557377049	-7.386364	0
19/12/1999	4.657317	6.521739	-6.140350877	3.067485	-1.36986
26/12/1999	5.00091	1.020408	-7.476635514	2.97619	6.944444
2/1/2000	4.472241	2.020202	7.070707071	-1.734104	3.896104
9/1/2000	-5.93667	-9.90099	-10.8490566	-1.764706	5
16/1/2000	4.645827	-1.0989	3.703703704	9.580838	-2.38095
23/1/2000	0.959169	0	5.102040816	0.546448	2.439024
30/1/2000	-0.30694	1.111111	0	0.543478	-1.19048
6/2/2000	-1.48916	-4.3956	-4.854368932	-13.51351	-1.20482
13/2/2000	-3.02334	-9.1954	-2.040816327	6.875	7.317073
20/2/2000	-10.4731	-15.1899	-14.0625	0	-2.27273
27/2/2000	-0.41386	2.985075	18.78787879	2.923977	0
5/3/2000	-5.78616	-5.7971	-1.020408163		3.488372
12/3/2000	5.029622	1.538462	-3.092783505	13.63636	3.370787
19/3/2000	-0.66103	0	-1.063829787		18.47826
26/3/2000	1.105721	3.030303	-7.52688172		-3.66972
2/4/2000	-0.95012	-1.47059	4.069767442	-7	2.857143
9/4/2000	0.781874	2.985075	-1.117318436	0	4.62963
16/4/2000	2.726484	2.898551	10.73446328		8.849558
23/4/2000	-4.67849	-4.22535	-4.081632653	-3.225806	-2.43902
30/4/2000	-1.17957	-2.94118	-1.063829787	-2.222222	0.833333
7/5/2000	-2.67162	-3.0303	-2.150537634		-33.0579
14/5/2000	-9.02703	-6.25	-1.098901099	-2.272727	-7.40741
21/5/2000	-0.6567	3.333333	-0.555555556	1.162791	-5.33333
28/5/2000	-8.82935	-6.45161	-6.703910615	-1.149425	-5.6338
4/6/2000	8.368472	5.172414	6.586826347	0	5.970149
11/6/2000	0.610118	-1.63934	-3.93258427	-4.651163	-1.40845

หน่วย: ร้อยละต่อสัปดาห์

DATE	SET	Ri(BIGC)	Ri(MAKRO)	Ri(SPC)	Ri(MINOR)
18/6/2000	0.919871	15	2.923976608	6.707317	-1.42857
25/6/2000	-3.24537	0	-1.704545455	-5.714286	0
2/7/2000	-2.28616	-1.44928	7.514450867	6.666667	-1.44928
9/7/2000	-0.86585	1.470588	2.688172043	-5.681818	7.352941
16/7/2000	-2.25788	-8.69565	-2.617801047	-3.614458	-4.10959
23/7/2000	-3.14342	-1.5873	-1.075268817	-5	-2.85714
30/7/2000	-4.59988	-1.6129	-2.173913043	0	1.470588
6/8/2000	6.796982	6.557377	5	5.263158	-2.89855
13/8/2000	1.663348	3.076923	1.058201058	-0.625	0
20/8/2000	0.827539	-1.49254	0.523560209		1.492537
27/8/2000	-3.8782	3.030303	0.520833333		-2.94118
3/9/2000	1.267765	0	11.91709845	-1.886792	3.030303
10/9/2000	-4.3961	2.941176	0.925925926		-5.88235
17/9/2000	-1.26907	-7.14286	-5.504587156	-0.641026	1.5625
24/9/2000	-6.53255	-4.61538	-3.883495146	3.225806	-1.53846
1/10/2000	1.149048	-1.6129	1.01010101	10	3.125
8/10/2000	-3.46569	-3.27869	-7	3.409091	0
15/10/2000	-5.01345	-5.08475	4.838709677		0
22/10/2000	8.78629	7.142857	4.615384615	-3.296703	1.515152
29/10/2000	-0.81707	-1.66667	1.960784314	1.136364	-5.97015
5/11/2000	4.920901	1.694915	0	10.67416	1.587302
12/11/2000	1.872572	1.666667	4.807692308	0	1.5625
19/11/2000	0.504716	1.639344	2.752293578	4.568528	-3.07692
26/11/2000	-3.15224	-3.22581	-1.785714286	0.970874	-4.7619
3/12/2000	-4.05018	-3.33333	-4.545454545	0	-1.66667
10/12/2000	-0.06207	1.724138	2.857142857	0	1.694915
17/12/2000	-0.18999	0	-0.925925926	1.923077	0

หน่วย: ร้อยละต่อปีค่า

DATE	SET	Ri(BIGC)	Ri(MAKRO)	Ri(SPC)	Ri(MINOR)
24/12/2000	-2.22572	-1.69492	-6.542056075	-1.886792	0
31/12/2000	0.786252	1.724138	4	11.53846	-3.33333
7/1/2001	6.526992	0	4.807692308	0	-5.17241
14/1/2001	8.540239	1.694915	0.917431193	-1.724138	0
21/1/2001	1.802406	-1.66667	0	-3.508772	-3.63636
28/1/2001	4.819166	-1.69492	-0.909090909	-7.272727	-5.66038
4/2/2001	0.593144	3.448276	0.917431193		2
11/2/2001	-2.80755	0	4.545454545		5.882353
18/2/2001	-2.68539	0	2.608695652	-1.960784	-3.7037
25/2/2001	2.607592	0	0	10	-1.92308
4/3/2001	-5.61004	3.333333	-0.847457627		1.960784
11/3/2001	0.31041	3.225806	-0.854700855		-1.92308
18/3/2001	-4.56026	-1.5625	-0.862068966	0	0
25/3/2001	-0.93857	-1.5873	-3.47826087		-3.92157
1/4/2001	0.582257	3.225806	12.61261261	3.636364	-2.04082
8/4/2001	-3.39796	-1.5625	-5.6		-4.16667
15/4/2001	3.283459	3.174603	0	0.877193	-2.17391
22/4/2001	0.446303	-1.53846	-6.779661017	0	0
29/4/2001	1.582473	-1.5625	2.727272727	0.869565	0
6/5/2001	3.119014	0	-0.884955752		4.444444
13/5/2001	1.451964	-1.5873	-6.25	-1.724138	0
20/5/2001	-3.30942	3.225806	-2.857142857	1.754386	0
27/5/2001	3.482564	-1.5625	1.960784314	-0.862069	12.76596
3/6/2001	0.305361	0	-0.961538462	4.347826	1.886792
10/6/2001	0.073707	3.174603	0		5.555556
17/6/2001	3.74011	-1.53846	-1.941747573	-3.333333	0
24/6/2001	-1.63595	0	-0.99009901	3.448276	3.508772

หน่วย: ร้อยละต่อสัปดาห์

DATE	SET	Ri(BIGC)	Ri(MAKRO)	Ri(SPC)	Ri(MINOR)
1/7/2001	1.217554	-1.5625	0	0	1.694915
8/7/2001	0.722372	4.761905	2	0.833333	5
15/7/2001	-3.25351	0	-5.392156863	3.305785	-9.52381
22/7/2001	-0.64904	0	1.03626943	-3.2	-1.75439
29/7/2001	-3.58023	-1.51515	-1.538461538	0.826446	-1.78571
5/8/2001	4.935405	3.076923	2.604166667	0	1.818182
12/8/2001	-0.02532	11.9403	5.583756345	-0.819672	3.571429
19/8/2001	2.336404	5.333333	-6.730769231	4.132231	-3.44828
26/8/2001	2.759477	2.531646	-5.154639175	-4.761905	1.785714
2/9/2001	1.023572	8.641975	-2.717391304	5	-1.75439
9/9/2001	2.011503	-1.13636	6.145251397		-5.35714
16/9/2001	-15.839	-9.1954	-9.473684211	-5.555556	-29.0566
23/9/2001	-4.68587	5.063291	-1.744186047	-7.563025	1.06383
30/9/2001	0.888565	-4.81928	-5.917159763	10.90909	2.105263
7/10/2001	1.386078	1.265823	4.402515723	1.639344	3.092784
14/10/2001	1.456138	0	-0.602409639	1.612903	17.5
21/10/2001	-0.08773	-1.25	1.212121212	0	0
28/10/2001	-1.44703	2.531646	0		-8.51064
4/11/2001	-2.2737	-3.7037	-7.185628743	-1.587302	-6.97674
11/11/2001	-2.22814	-2.5641	-3.870967742	0	9
18/11/2001	2.771258	0	6.040268456	0	-8.25688
25/11/2001	7.704863	-0.52632	3.797468354	1.612903	8
2/12/2001	1.971227	6.878307	0		-4.62963
9/12/2001	0.472537	0	-1.829268293	-1.587302	0
16/12/2001	-3.30537	-0.9901	-1.242236025	-3.225806	4.854369
23/12/2001	0.914966	0.5	2.51572327	6.666667	-1.85185
30/12/2001	2.413297	-2.48756	-3.067484663	5.46875	0.943396

หน่วย: ร้อยละต่อปีค่า

DATE	SET	Ri(BIGC)	Ri(MAKRO)	Ri(SPC)	Ri(MINOR)
6/1/2002	3.909824	1.530612	0.632911392		-1.86916
13/1/2002	2.160067	0	0		0.952381
20/1/2002	-1.55945	5.527638	-0.628930818		0
27/1/2002	6.761779	3.809524	0.632911392		3.773585
3/2/2002	-0.69029	1.376147	10.6918239	0.740741	-2.72727
10/2/2002	5.031935	1.809955	-1.704545455		9.345794
17/2/2002	5.495062	1.777778	-1.734104046	-1.470588	3.418803
24/2/2002	-5.81738	-3.05677	-3.529411765	-2.985075	-0.82645
3/3/2002	8.348508	15.99099	0		-0.83333
10/3/2002	2.627085	-4.85437	2.43902439		2.521008
17/3/2002	-3.39434	-5.71429	-5.357142857		1.639344
24/3/2002	3.158534	6.926407	-5.660377358	-7.692308	12.09677
31/3/2002	-3.94544	0.404858	0	0	10.07194
7/4/2002	-1.05897	-0.80645	-3.333333333	3.333333	-1.30719
14/4/2002	2.605479	4.674797	4.827586207	1.612903	0.662252
21/4/2002	1.812294	-6.01942	6.578947368		1.973684
28/4/2002	-2.60537	0.826446	3.703703704	6.349206	-2.58065
5/5/2002	-0.6349	0.409836	0		-7.28477
12/5/2002	2.149448	3.061224	7.142857143		-0.71429
19/5/2002	-1.01023	-10.099	-0.555555556		1.438849
26/5/2002	3.664434	-3.52423	1.117318436		2.836879
2/6/2002	4.047538	-1.82648	4.972375691	-5.223881	3.448276
9/6/2002	2.296794	2.325581	-1.578947368	-2.362205	3.333333
16/6/2002	1.224453	0	10.16042781	0	1.935484
23/6/2002	-6.38671	-10.4545	-15.04854369	-7.258065	-5.6962
30/6/2002	-1.60825	6.091371	0.571428571	-0.869565	0
7/7/2002	3.08404	5.263158	2.840909091		-1.34228

หน่วย: ร้อยละต่อสัปดาห์

DATE	SET	Ri(BIGC)	Ri(MAKRO)	Ri(SPC)	Ri(MINOR)
14/7/2002	-0.1097	-1.36364	0	0	0.680272
21/7/2002	-1.59487	-5.52995	-0.552486188		7.432432
28/7/2002	-7.051	-5.36585	-4.444444444	-1.754386	-6.91824
4/8/2002	1.088763	0	4.651162791	-1.785714	-2.7027
11/8/2002	-0.91507	0.515464	0		1.388889
18/8/2002	1.623666	8.717949	1.666666667	0	2.054795
25/8/2002	-1.61381	-1.88679	1.092896175		6.040268
1/9/2002	-1.59396	-1.92308	5.405405405	-9.090909	-1.89873
8/9/2002	-2.1071	-3.43137	-2.051282051	2	-1.93548
15/9/2002	1.018244	1.015228	0		-0.65789
22/9/2002	-1.57637	-0.50251	0	7.843137	-0.66225
29/9/2002	-3.64133	-5.05051	-1.570680628		-3.33333
6/10/2002	0.649507	1.06383	-2.659574468	5.454545	1.37931
13/10/2002	-3.08284	0	0.546448087		-1.36054
20/10/2002	3.646981	-1.05263	-6.52173913		3.448276
27/10/2002	1.752029	4.787234	1.162790698		-3.33333
3/11/2002	2.645928	2.538071	3.448275862	-1.724138	2.068966
10/11/2002	-0.74927	-1.9802	-6.666666667		-0.67568
17/11/2002	0.349293	1.515152	-13.69047619	-0.877193	2.040816
24/11/2002	1.782509	-1.49254	-2.75862069	0.884956	-2.66667
1/12/2002	0.63708	0	1.418439716	-1.754386	2.054795
8/12/2002	0.052072	-1.0101	-0.699300699	12.5	0.671141
15/12/2002	-2.43501	-0.5102	-4.929577465	-4.761905	-1.33333
22/12/2002	-1.73779	-9.74359	-6.666666667	1.666667	1.351351
29/12/2002	1.848519	-6.25	1.587301587	3.278689	-2
5/1/2003	0.21039	4.242424	1.5625	0	2.040816
12/1/2003	0.878983	-5.23256	0		-0.66667

หน่วย: ร้อยละต่อสัปดาห์

DATE	SET	Ri(BIGC)	Ri(MAKRO)	Ri(SPC)	Ri(MINOR)
19/1/2003	1.884175	6.748466	4.615384615	0	0.671141
26/1/2003	2.489375	-2.87356	1.470588235	3.174603	6.666667
2/2/2003	-1.67153	-1.77515	0		-2.5
9/2/2003	2.416151	-1.80723	-1.449275362		-1.92308
16/2/2003	-2.70221	-6.74847	-1.470588235		3.267974
23/2/2003	-2.48976	-3.28947	4.47761194		0
2/3/2003	0.497875	-1.36054	2.142857143	0.769231	-1.26582
9/3/2003	-0.78601	-1.37931	-2.797202797	14.50382	1.923077
16/3/2003	-0.06695	-6.29371	-0.71942446	-13.33333	3.144654
23/3/2003	1.501789	-2.23881	1.449275362	-7.692308	0.609756
30/3/2003	1.625323	-2.29008	3.571428571	-0.833333	0.606061
6/4/2003	0.649471	6.25	-11.72413793		-1.20482
13/4/2003	3.073159	10.29412	1.5625	-0.840336	9.146341
20/4/2003	0.297373	0.666667	0	0	1.117318
27/4/2003	-4.15345	-10.596	-3.846153846	-2.542373	-0.55249
4/5/2003	1.820745	1.481481	0		0
11/5/2003	2.41979	6.569343	3.2	2.608696	-7.77778
18/5/2003	-0.34347	-2.05479	-1.550387597	1.694915	-1.20482
25/5/2003	3.268927	-2.0979	0	3.333333	1.219512
1/6/2003	2.098508	1.428571	0	-3.225806	3.614458
8/6/2003	3.563464	4.225352	3.149606299	-0.833333	1.162791
15/6/2003	2.333758	3.378378	6.870229008	8.403361	2.298851
22/6/2003	5.769096	5.882353	0	-2.325581	1.123596
29/6/2003	1.071447	8.024691	0	9.52381	3.333333
6/7/2003	8.351728	4	7.142857143	15.94203	16.12903
13/7/2003	-2.28556	-1.64835	2	-3.75	4.62963
20/7/2003	1.785751	1.675978	-0.653594771	3.896104	-0.88496

หน่วย: ร้อยละต่อสัปดาห์

DATE	SET	Ri(BIGC)	Ri(MAKRO)	Ri(SPC)	Ri(MINOR)
27/7/2003	-1.6591	-1.64835	0	12.5	0
3/8/2003	1.377721	3.351955	1.315789474	-1.111111	1.785714
10/8/2003	2.372137	1.621622	0	3.370787	7.894737
17/8/2003	3.147848	0.531915	-3.896103896	2.717391	0.813008
24/8/2003	3.038305	-0.5291	-6.756756757	0.529101	2.419355
31/8/2003	0.542252	-0.53191	-1.449275362	-3.157895	2.362205
7/9/2003	3.738071	-1.60428	-4.411764706	8.695652	10
14/9/2003	1.893118	-2.17391	3.076923077	5	-2.7972
21/9/2003	-0.20409	0.555556	0.746268657	-0.952381	-1.43885
28/9/2003	2.408276	-1.10497	0.740740741	0	1.459854
5/10/2003	-3.87866	-1.67598	0.735294118	0	-0.71942
12/10/2003	4.264425	1.136364	0	0.961538	0
19/10/2003	1.107955	-1.1236	0.729927007	0	1.449275
26/10/2003	3.508328	-1.13636	2.173913043	19.04762	-1.42857
2/11/2003	4.956916	1.149425	7.092198582	-12	2.898551
9/11/2003	4.933926	1.136364	-1.324503311	9.090909	1.408451
16/11/2003	-2.02981	2.808989	14.76510067	3.333333	8.333333
23/11/2003	-6.68563	-4.37158	-11.11111111	2.419355	-3.20513
30/11/2003	5.314386	4.571429	15.78947368	2.362205	0
7/12/2003	2.052528	2.185792	2.272727273	-11.53846	-0.66225
14/12/2003	2.299448	0	-1.111111111	8.695652	0.666667
21/12/2003	5.144934	-0.53476	0.561797753	-5.6	-4.63576
28/12/2003	3.629696	-1.07527	0.558659218	1.694915	-2.08333



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ภาคผนวก ค

การทดสอบ Unit Root ของตัวแปรต่าง ๆ ในสมการ

รูปแบบสมการ: NONE ของ SET

ADF Test Statistic	-15.52663	1% Critical Value*	-2.5735
		5% Critical Value	-1.9408
		10% Critical Value	-1.6163

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(SET)

Method: Least Squares

Date: 05/05/04 Time: 23:59

Sample(adjusted): 2 262

Included observations: 261 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SET(-1)	-0.961706	0.061939	-15.52663	0.0000
R-squared	0.481117	Mean dependent var	-0.002050	
Adjusted R-squared	0.481117	S.D. dependent var	5.405038	
S.E. of regression	3.893440	Akaike info criterion	5.560287	
Sum squared resid	3941.307	Schwarz criterion	5.573944	
Log likelihood	-724.6175	Durbin-Watson stat	2.007003	

รูปแบบสมการ: INTERCEPT ของ SET

ADF Test Statistic	-15.62127	1% Critical Value*	-3.4570
		5% Critical Value	-2.8727
		10% Critical Value	-2.5727

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(SET)

Method: Least Squares

Date: 05/06/04 Time: 00:01

Sample(adjusted): 2 262

Included observations: 261 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SET(-1)	-0.969744	0.062078	-15.62127	0.0000
C	0.342495	0.241540	1.417964	0.1574
R-squared	0.485114	Mean dependent var	-0.002050	
Adjusted R-squared	0.483126	S.D. dependent var	5.405038	
S.E. of regression	3.885895	Akaike info criterion	5.560217	
Sum squared resid	3910.946	Schwarz criterion	5.587531	
Log likelihood	-723.6083	F-statistic	244.0240	
Durbin-Watson stat	2.004259	Prob(F-statistic)	0.000000	

รูปแบบสมการ: INTERCEPT and TREND ของ SET

ADF Test Statistic	-15.74459	1% Critical Value*	-3.9965
		5% Critical Value	-3.4283
		10% Critical Value	-3.1373

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(SET)

Method: Least Squares

Date: 05/06/04 Time: 00:02

Sample(adjusted): 2 262

Included observations: 261 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SET(-1)	-0.978380	0.062141	-15.74459	0.0000
C	-0.315900	0.481285	-0.656368	0.5122
@TREND(1)	0.005049	0.003196	1.580067	0.1153
R-squared	0.490049	Mean dependent var	-0.002050	
Adjusted R-squared	0.486096	S.D. dependent var	5.405038	
S.E. of regression	3.874716	Akaike info criterion	5.558250	
Sum squared resid	3873.464	Schwarz criterion	5.599221	
Log likelihood	-722.3516	F-statistic	123.9653	
Durbin-Watson stat	2.004050	Prob(F-statistic)	0.000000	

รูปแบบสมการ: NONE ของหลักทรัพย์ BIGC

ADF Test Statistic	-16.43337	1% Critical Value*	-2.5735
		5% Critical Value	-1.9408
		10% Critical Value	-1.6163

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(BIGC)

Method: Least Squares

Date: 05/05/04 Time: 22:42

Sample(adjusted): 2 261

Included observations: 260 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BIGC(-1)	-1.019967	0.062067	-16.43337	0.0000
R-squared	0.510446	Mean dependent var	-0.020387	
Adjusted R-squared	0.510446	S.D. dependent var	8.408167	
S.E. of regression	5.883039	Akaike info criterion	6.385863	
Sum squared resid	8964.029	Schwarz criterion	6.399558	
Log likelihood	-829.1622	Durbin-Watson stat	2.001151	

รูปแบบสมการ: INTERCEPT ของหลักทรัพย์ BIGC

ADF Test Statistic	-16.53125	1% Critical Value*	-3.4571
		5% Critical Value	-2.8728
		10% Critical Value	-2.5727

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(BIGC)

Method: Least Squares

Date: 05/05/04 Time: 22:45

Sample(adjusted): 2 261

Included observations: 260 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BIGC(-1)	-1.028139	0.062194	-16.53125	0.0000
C	0.528716	0.365596	1.446175	0.1493
R-squared	0.514382	Mean dependent var	-0.020387	
Adjusted R-squared	0.512500	S.D. dependent var	8.408167	
S.E. of regression	5.870683	Akaike info criterion	6.385481	
Sum squared resid	8891.948	Schwarz criterion	6.412871	
Log likelihood	-828.1126	F-statistic	273.2821	
Durbin-Watson stat	2.000711	Prob(F-statistic)	0.000000	

รูปแบบสมการ: INTERCEPT and TREND ของหลักทรัพย์ BIGC

ADF Test Statistic	-28.54894	1% Critical Value*	-2.5735
		5% Critical Value	-1.9408
		10% Critical Value	-1.6163

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(BIGC,2)

Method: Least Squares

Date: 05/05/04 Time: 22:49

Sample(adjusted): 3 261

Included observations: 259 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(BIGC(-1))	-1.519131	0.053211	-28.54894	0.0000
R-squared	0.759562	Mean dependent var	-0.001426	
Adjusted R-squared	0.759562	S.D. dependent var	14.68429	
S.E. of regression	7.200363	Akaike info criterion	6.789993	
Sum squared resid	13376.07	Schwarz criterion	6.803726	
Log likelihood	-878.3041	Durbin-Watson stat	2.416310	

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รูปแบบสมการ: NONE ของหลักทรัพย์ MAKRO

ADF Test Statistic	-19.41876	1% Critical Value*	-2.5735
		5% Critical Value	-1.9408
		10% Critical Value	-1.6163

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(MAKRO)

Method: Least Squares

Date: 05/05/04 Time: 22:18

Sample(adjusted): 2 261

Included observations: 260 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MAKRO(-1)	-1.185634	0.061056	-19.41876	0.0000
R-squared	0.592824	Mean dependent var		0.004838
Adjusted R-squared	0.592824	S.D. dependent var		7.667383
S.E. of regression	4.892586	Akaike info criterion		6.017158
Sum squared resid	6199.785	Schwarz criterion		6.030853
Log likelihood	-781.2305	Durbin-Watson stat		1.936642

รูปแบบสมการ: INTERCEPT ของหลักทรัพย์ MAKRO

ADF Test Statistic	-19.38408	1% Critical Value*	-3.4571
		5% Critical Value	-2.8728
		10% Critical Value	-2.5727

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(MAKRO)

Method: Least Squares

Date: 05/05/04 Time: 22:21

Sample(adjusted): 2 261

Included observations: 260 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MAKRO(-1)	-1.185786	0.061173	-19.38408	0.0000
C	-0.064478	0.304007	-0.212094	0.8322
R-squared	0.592895	Mean dependent var		0.004838
Adjusted R-squared	0.591317	S.D. dependent var		7.667383
S.E. of regression	4.901631	Akaike info criterion		6.024676
Sum squared resid	6198.704	Schwarz criterion		6.052065
Log likelihood	-781.2078	F-statistic		375.7425
Durbin-Watson stat	1.936667	Prob(F-statistic)		0.000000

รูปแบบสมการ: INTERCEPT and TREND ของหลักทรัพย์ MAKRO

ADF Test Statistic	-19.38856	1% Critical Value*	-3.9966
		5% Critical Value	-3.4284
		10% Critical Value	-3.1373

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(MAKRO)
 Method: Least Squares
 Date: 05/05/04 Time: 22:24
 Sample(adjusted): 2 261
 Included observations: 260 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MAKRO(-1)	-1.187885	0.061267	-19.38856	0.0000
C	-0.495816	0.610675	-0.811915	0.4176
@TREND(1)	0.003304	0.004056	0.814595	0.4161
R-squared	0.593943	Mean dependent var		0.004838
Adjusted R-squared	0.590783	S.D. dependent var		7.667383
S.E. of regression	4.904830	Akaike info criterion		6.029789
Sum squared resid	6182.741	Schwarz criterion		6.070874
Log likelihood	-780.8726	F-statistic		187.9580
Durbin-Watson stat	1.937384	Prob(F-statistic)		0.000000

รูปแบบสมการ: NONE ของหลักทรัพย์ SPC

ADF Test Statistic	-17.75713	1% Critical Value*	-2.5755
		5% Critical Value	-1.9412
		10% Critical Value	-1.6165

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(SPC)
 Method: Least Squares
 Date: 05/05/04 Time: 23:38
 Sample(adjusted): 2 209
 Included observations: 208 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPC(-1)	-1.207048	0.067975	-17.75713	0.0000
R-squared	0.603688	Mean dependent var		-0.005206
Adjusted R-squared	0.603688	S.D. dependent var		9.288383
S.E. of regression	5.847346	Akaike info criterion		6.374649
Sum squared resid	7077.632	Schwarz criterion		6.390695
Log likelihood	-661.9635	Durbin-Watson stat		1.997014

รูปแบบสมการ: INTERCEPT ของหลักทวิพจน์ SPC

ADF Test Statistic	-18.06701	1% Critical Value*	-3.4631
		5% Critical Value	-2.8755
		10% Critical Value	-2.5741

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(SPC)

Method: Least Squares

Date: 05/05/04 Time: 23:40

Sample(adjusted): 2 209

Included observations: 208 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPC(-1)	-1.225948	0.067856	-18.06701	0.0000
C	0.905296	0.404726	2.236813	0.0264
R-squared	0.613085	Mean dependent var	-0.005206	
Adjusted R-squared	0.611207	S.D. dependent var	9.288383	
S.E. of regression	5.791610	Akaike info criterion	6.360267	
Sum squared resid	6909.807	Schwarz criterion	6.392358	
Log likelihood	-659.4677	F-statistic	326.4169	
Durbin-Watson stat	2.008171	Prob(F-statistic)	0.000000	

รูปแบบสมการ: INTERCEPT and TREND ของหลักทวิพจน์ SPC

ADF Test Statistic	-18.06120	1% Critical Value*	-4.0051
		5% Critical Value	-3.4324
		10% Critical Value	-3.1397

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(SPC)

Method: Least Squares

Date: 05/05/04 Time: 23:42

Sample(adjusted): 2 209

Included observations: 208 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPC(-1)	-1.227785	0.067979	-18.06120	0.0000
C	0.395302	0.807345	0.489632	0.6249
@TREND(1)	0.004893	0.006700	0.730329	0.4660
R-squared	0.614089	Mean dependent var	-0.005206	
Adjusted R-squared	0.610324	S.D. dependent var	9.288383	
S.E. of regression	5.798181	Akaike info criterion	6.367284	
Sum squared resid	6891.875	Schwarz criterion	6.415421	
Log likelihood	-659.1975	F-statistic	163.1055	
Durbin-Watson stat	2.009871	Prob(F-statistic)	0.000000	

รูปแบบสมการ: NONE ของหลักทฤษฎี MINOR

ADF Test Statistic	-15.47574	1% Critical Value*	-2.5735
		5% Critical Value	-1.9408
		10% Critical Value	-1.6163

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(MINOR)

Method: Least Squares

Date: 05/05/04 Time: 23:11

Sample(adjusted): 2 259

Included observations: 258 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MINOR(-1)	-0.964104	0.062298	-15.47574	0.0000
R-squared	0.482371	Mean dependent var	-0.023579	
Adjusted R-squared	0.482371	S.D. dependent var	8.227166	
S.E. of regression	5.919154	Akaike info criterion	6.398133	
Sum squared resid	9004.352	Schwarz criterion	6.411904	
Log likelihood	-824.3591	Durbin-Watson stat	1.989443	

รูปแบบสมการ: INTERCEPT ของหลักทฤษฎี MINOR

ADF Test Statistic	-15.54442	1% Critical Value*	-3.4573
		5% Critical Value	-2.8728
		10% Critical Value	-2.5727

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(MINOR)

Method: Least Squares

Date: 05/05/04 Time: 23:13

Sample(adjusted): 2 259

Included observations: 258 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MINOR(-1)	-0.970805	0.062454	-15.54442	0.0000
C	0.465455	0.369432	1.259920	0.2088
R-squared	0.485561	Mean dependent var	-0.023579	
Adjusted R-squared	0.483551	S.D. dependent var	8.227166	
S.E. of regression	5.912402	Akaike info criterion	6.399703	
Sum squared resid	8948.862	Schwarz criterion	6.427245	
Log likelihood	-823.5617	F-statistic	241.6291	
Durbin-Watson stat	1.988600	Prob(F-statistic)	0.000000	

รูปแบบสมการ: INTERCEPT and TREND ของหลักทรัพย์ MINOR

ADF Test Statistic	-15.52051	1% Critical Value*	-3.9969
		5% Critical Value	-3.4285
		10% Critical Value	-3.1374

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(MINOR)

Method: Least Squares

Date: 05/05/04 Time: 23:15

Sample(adjusted): 2 259

Included observations: 258 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MINOR(-1)	-0.971200	0.062575	-15.52051	0.0000
C	0.259248	0.739863	0.350400	0.7263
@TREND(1)	0.001594	0.004952	0.321869	0.7478
R-squared	0.485770	Mean dependent var	-0.023579	
Adjusted R-squared	0.481736	S.D. dependent var	8.227166	
S.E. of regression	5.922780	Akaike info criterion	6.407049	
Sum squared resid	8945.228	Schwarz criterion	6.448362	
Log likelihood	-823.5093	F-statistic	120.4433	
Durbin-Watson stat	1.988634	Prob(F-statistic)	0.000000	

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ผลการประมาณค่าอัตราผลตอบแทนของหลักทรัพย์แต่ละหลักทรัพย์
ด้วยวิธีเส้นพรมแดนเชิงเส้น

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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ภาคผนวก ง

ผลการประมาณค่าอัตราผลตอบแทนของหลักทรัพย์แต่ละหลักทรัพย์ด้วยวิธีเส้นพรมแดนเชิงเส้นคู่

หลักทรัพย์ BIGC

the final mle estimates are :

	coefficient	standard-error	t-ratio
beta 0	0.35137341E+00	0.35902124E+01	0.97869811E-01
beta 1	0.53176220E+00	0.87095919E-01	0.61054779E+01
sigma-squared	0.29907444E+02	0.23895151E+01	0.12516114E+02
gamma	0.66017958E-05	0.46548051E-02	0.14182754E-02

หลักทรัพย์ MAKRO

the final mle estimates are :

	coefficient	standard-error	t-ratio
beta 0	-0.22162861E+00	0.29386488E+01	-0.75418541E-01
beta 1	0.51583254E+00	0.70540759E-01	0.73125459E+01
sigma-squared	0.20610094E+02	0.17593363E+01	0.11714699E+02
gamma	0.20848360E-04	0.78494531E-02	0.26560271E-02

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หลักทรัพย์ SPC

the final mle estimates are :

	coefficient	standard-error	t-ratio
beta 0	0.61513101E+00	0.38686089E+01	0.15900574E+00
beta 1	0.38013265E+00	0.80312476E-01	0.47331706E+01
sigma-squared	0.31915529E+02	0.30733555E+01	0.10384587E+02
gamma	0.71559789E-04	0.15519027E-01	0.46111002E-02

หลักทรัพย์ MINOR

the final mle estimates are :

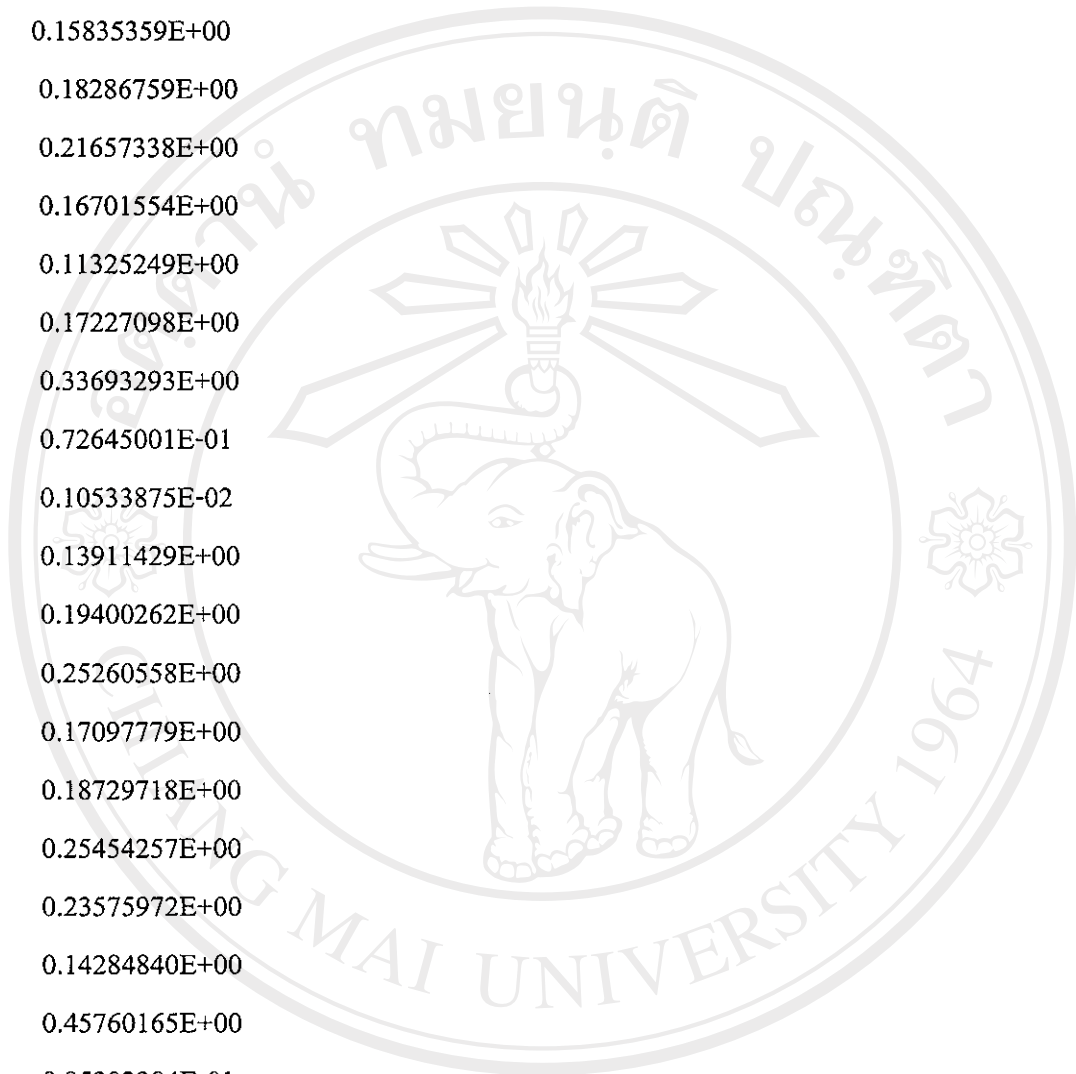
	coefficient	standard-error	t-ratio
beta 0	0.36618118E+01	0.89014496E+00	0.41137252E+01
beta 1	0.35518688E+00	0.90759885E-01	0.39134788E+01
sigma-squared	0.43403963E+02	0.70231955E+01	0.61800876E+01
gamma	0.40137364E+00	0.14873823E+00	0.26985237E+01

technical efficiency estimates :

firm eff.-est.

- 1 0.14450402E+00
- 2 0.11392834E+00
- 3 0.38221361E+00
- 4 0.92921880E-01
- 5 0.20991127E+00
- 6 0.28975504E+00

firm	eff.-est.
7	0.53127542E+00
8	0.10383105E+00
9	0.15835359E+00
10	0.18286759E+00
11	0.21657338E+00
12	0.16701554E+00
13	0.11325249E+00
14	0.17227098E+00
15	0.33693293E+00
16	0.72645001E-01
17	0.10533875E-02
18	0.13911429E+00
19	0.19400262E+00
20	0.25260558E+00
21	0.17097779E+00
22	0.18729718E+00
23	0.25454257E+00
24	0.23575972E+00
25	0.14284840E+00
26	0.45760165E+00
27	0.95302384E-01
28	0.97665657E-01
29	0.21491916E+00
30	0.11836093E+00
31	0.10829520E+00
32	0.28760650E+00
33	0.17345124E+00
34	0.16307378E+00
35	0.17347427E+00

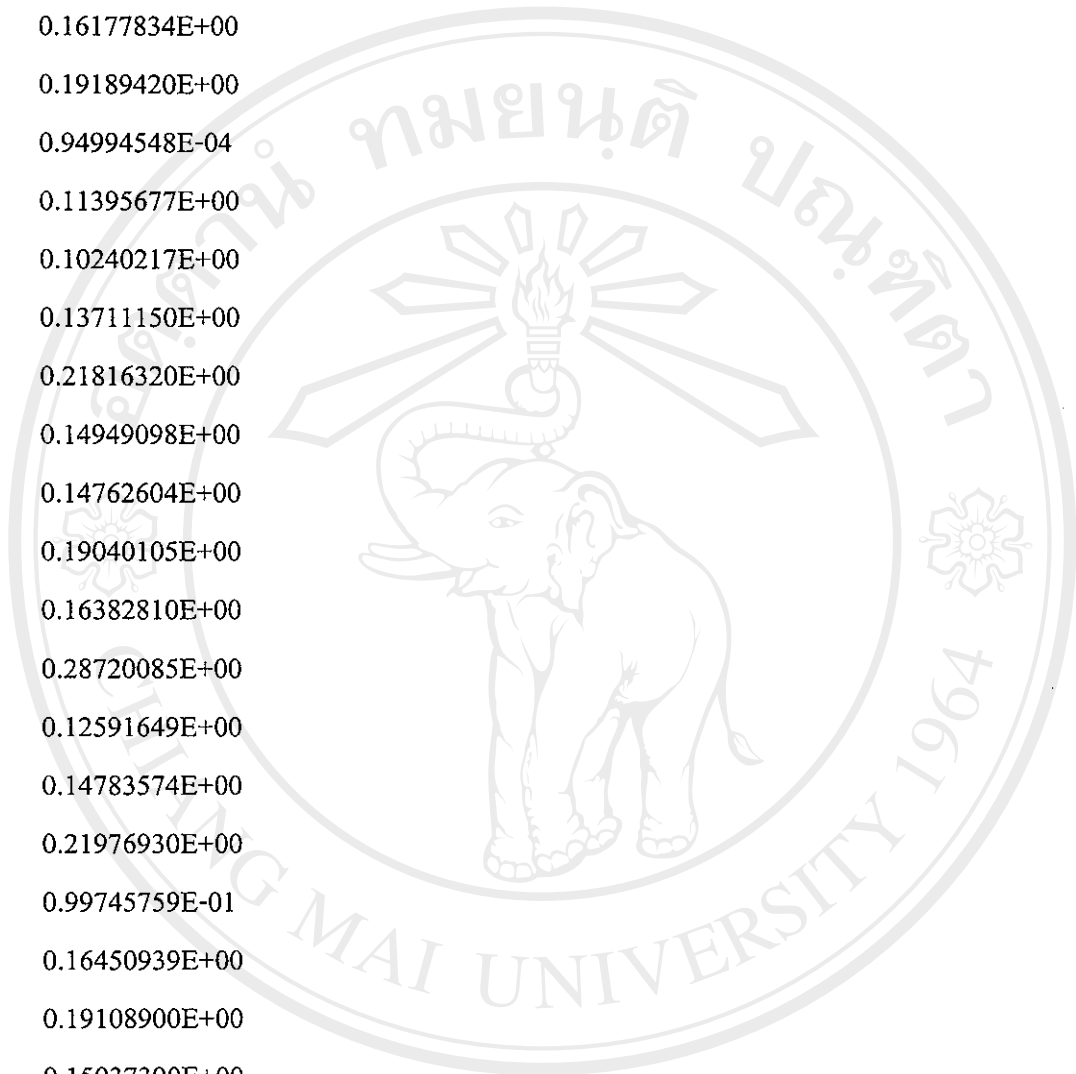


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firm	eff.-est.
36	0.12446311E+00
37	0.26303014E+00
38	0.13925742E+00
39	0.19170072E+00
40	0.22641326E+00
41	0.22628373E+00
42	0.11090762E+00
43	0.24650156E+00
44	0.29122203E+00
45	0.58939830E-01
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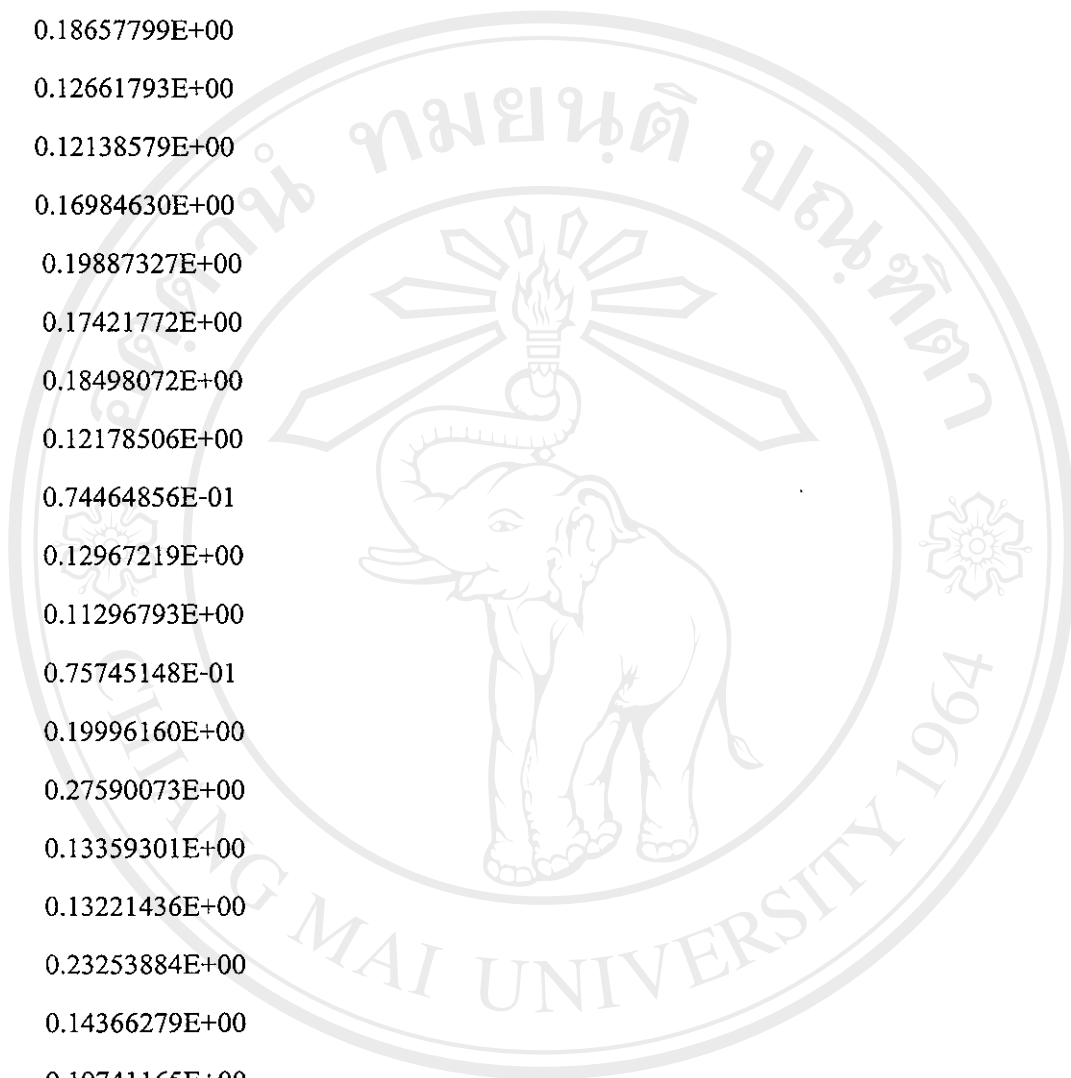
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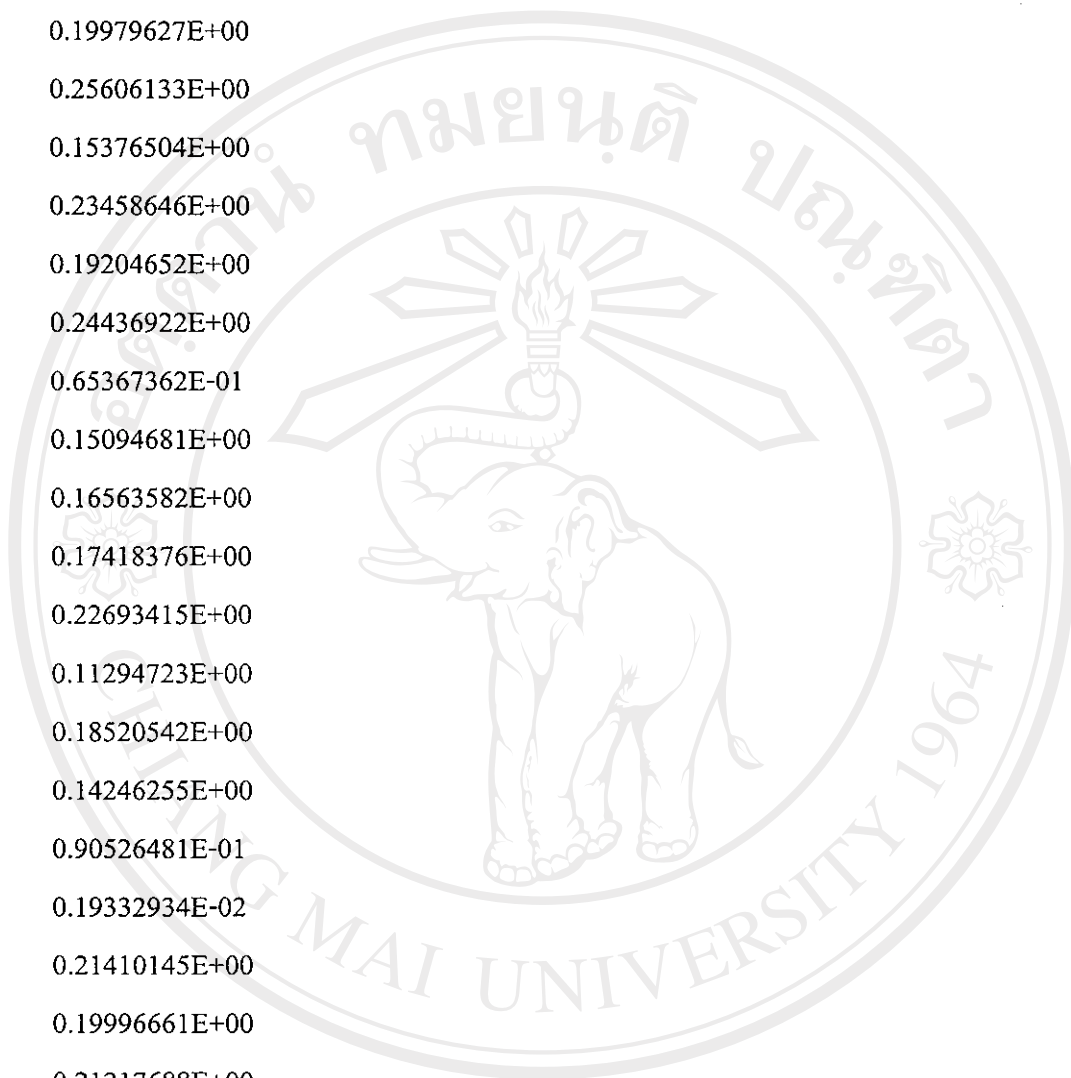
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97	0.12661793E+00
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100	0.19887327E+00
101	0.17421772E+00
102	0.18498072E+00
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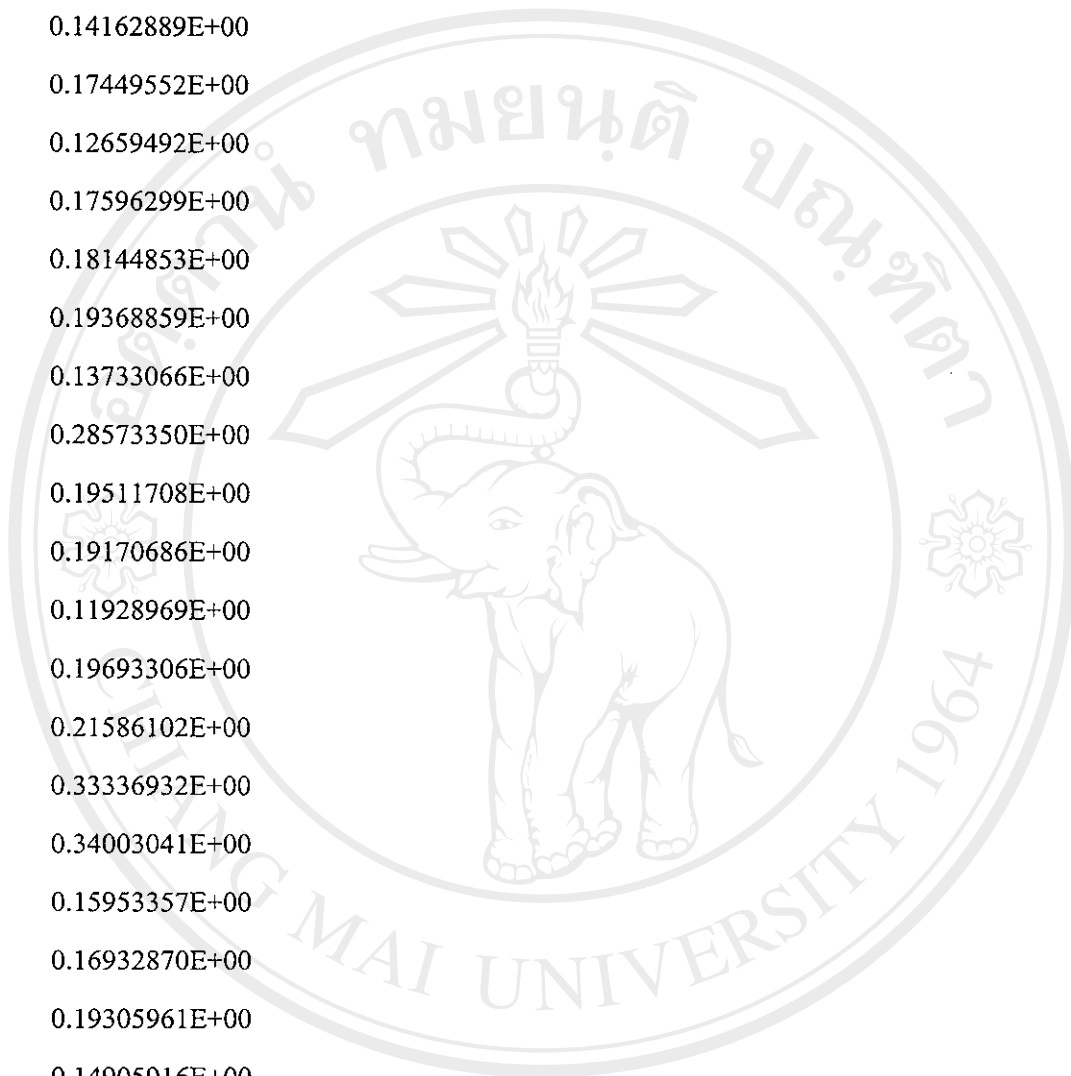
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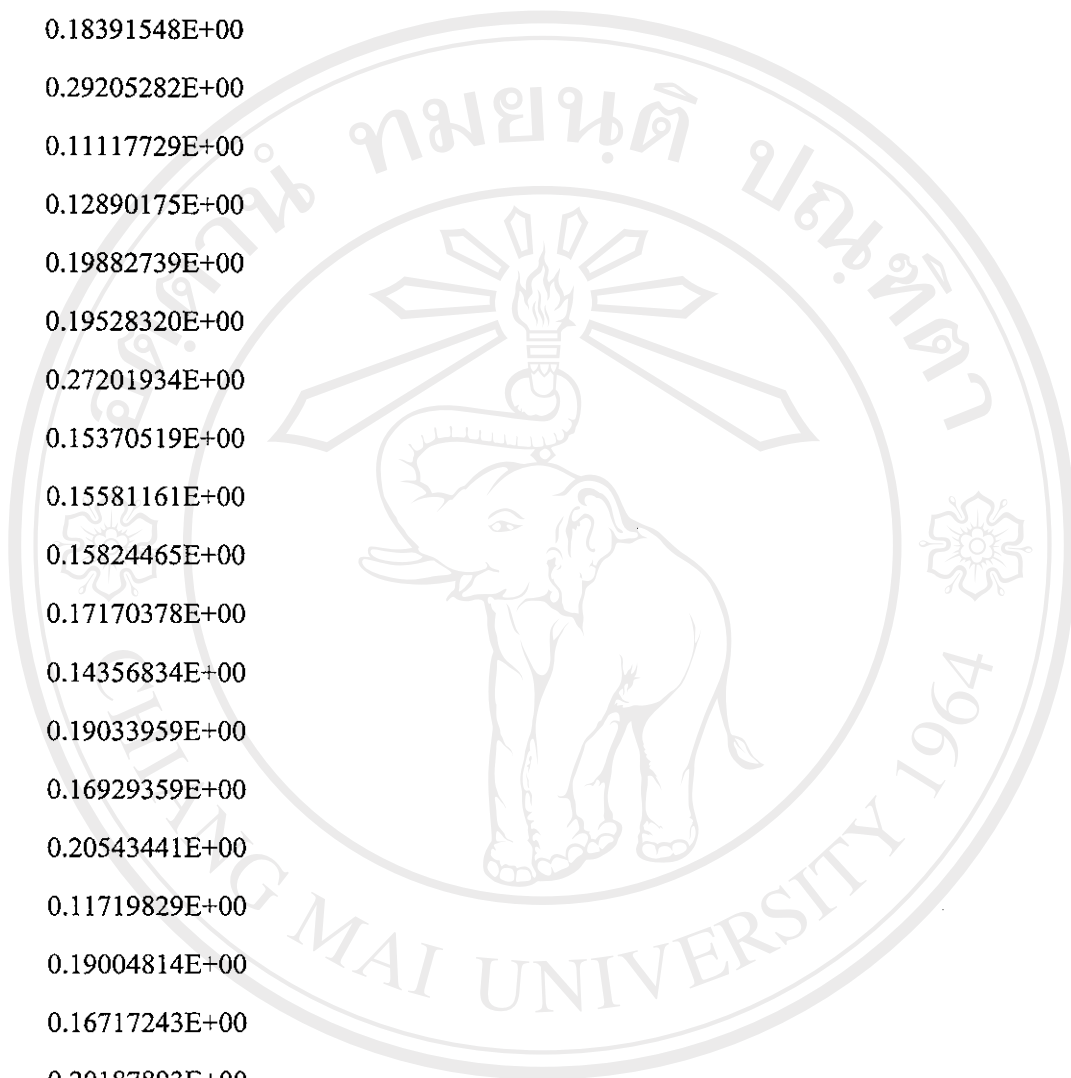
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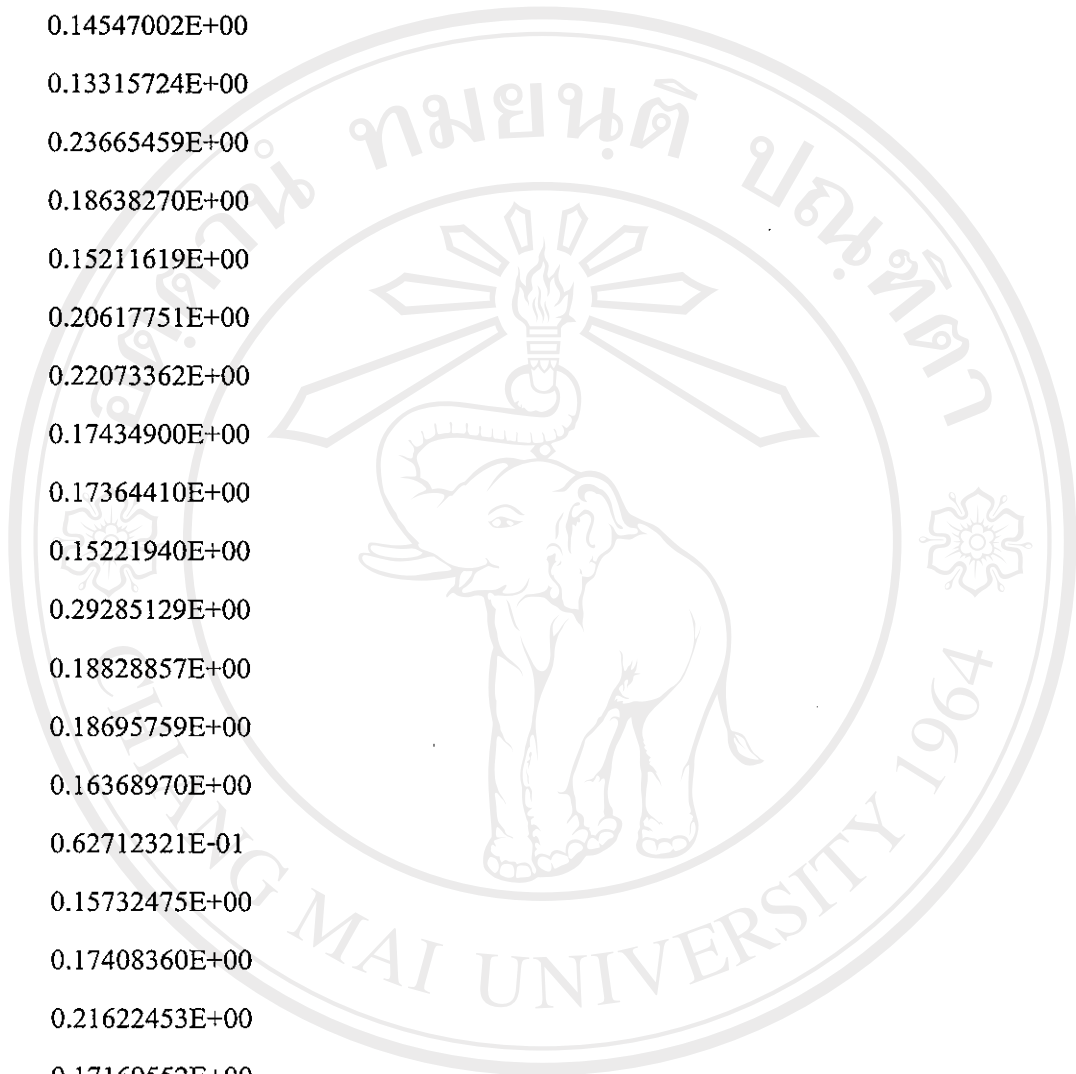
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mean efficiency = 0.18180005E+00

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ภาคผนวก จ

ผลการวิเคราะห์การถดถอยด้วยวิธีกำลังสองน้อยที่สุด (Ordinary Least Square)

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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ภาคผนวก จ

ผลการวิเคราะห์การถดถอยด้วยวิธีกำลังสองน้อยที่สุด (Ordinary Least Square)

หลักทรัพย์ BIGC

```

+-----+-----+-----+-----+-----+
| Limited Dependent Variable Model - FRONTIER Regression
| Ordinary least squares regression Weighting variable = none
| Dep. var. = BIGC Mean= .5279089242 , S.D.= 5.854888526
| Model size: Observations = 261, Parameters = 2, Deg.Fr.= 259
| Residuals: Sum of squares= 7805.814230 , Std.Dev.= 5.48983
| Fit: R-squared= .124195, Adjusted R-squared = .12081
| Model test: F[ 1, 259] = 36.73, Prob value = .00000
| Diagnostic: Log-L = -813.7955, Restricted(b=0) Log-L = -831.1013
| LogAmemiyaPrCrt.= 3.413, Akaike Info. Crt.= 6.251
+-----+-----+-----+-----+-----+
    
```

Variable	Coefficient	Standard Error	b/St.Er.	P[Z >z]	Mean of X
Constant	.3400670522	.34122286	.997	.3190	
SET	.5317612917	.87744363E-01	6.060	.0000	.35324473

หลักทรัพย์ MAKRO

```

+-----+-----+-----+-----+-----+
| Limited Dependent Variable Model - FRONTIER Regression
| Ordinary least squares regression Weighting variable = none
| Dep. var. = MAKRO Mean= -.5609168484E-01, S.D.= 4.969417265
| Model size: Observations = 261, Parameters = 2, Deg.Fr.= 259
| Residuals: Sum of squares= 5379.146364 , Std.Dev.= 4.55729
| Fit: R-squared= .162222, Adjusted R-squared = .15899
| Model test: F[ 1, 259] = 50.15, Prob value = .00000
| Diagnostic: Log-L = -765.2052, Restricted(b=0) Log-L = -788.3040
| LogAmemiyaPrCrt.= 3.041, Akaike Info. Crt.= 5.879
+-----+-----+-----+-----+-----+
    
```

Variable	Coefficient	Standard Error	b/St.Er.	P[Z >z]	Mean of X
Constant	-.2383059436	.28326029	-.841	.4002	
SET	.5158300892	.72839474E-01	7.082	.0000	.35324473

หลักทรัพย์ SPC

```

-----
Limited Dependent Variable Model - FRONTIER Regression
Ordinary least squares regression Weighting variable = none
Dep. var. = SPC Mean= .7472482148 , S.D.= 5.918462309
Model size: Observations = 209, Parameters = 2, Deg.Fr.= 207
Residuals: Sum of squares= 6670.029395 , Std.Dev.= 5.67647
Fit: R-squared= .084525, Adjusted R-squared = .08010
Model test: F[ 1, 207] = 19.11, Prob value = .00002
Diagnostic: Log-L = -658.4464, Restricted(b=0) Log-L = -667.6750
LogAmemiyaPrCrt.= 3.482, Akaike Info. Crt.= 6.320
-----

```

Variable	Coefficient	Standard Error	b/St.Er.	P[Z >z]	Mean of X
Constant	.5767366788	.39458236	1.462	.1438	
SET	.3801202976	.86949570E-01	4.372	.0000	.44857256

หลักทรัพย์ MINOR

```

-----
Limited Dependent Variable Model - FRONTIER Regression
Ordinary least squares regression Weighting variable = none
Dep. var. = RI Mean= .4937516866 , S.D.= 5.896011935
Model size: Observations = 259, Parameters = 2, Deg.Fr.= 257
Residuals: Sum of squares= 8419.121337 , Std.Dev.= 5.72357
Fit: R-squared= .061292, Adjusted R-squared = .05764
Model test: F[ 1, 257] = 16.78, Prob value = .00006
Diagnostic: Log-L = -818.3506, Restricted(b=0) Log-L = -826.5416
LogAmemiyaPrCrt.= 3.497, Akaike Info. Crt.= 6.335
-----

```

Variable	Coefficient	Standard Error	b/St.Er.	P[Z >z]	Mean of X
Constant	.3556938658	.35723848	.996	.3194	
RM	.3695126730	.90203793E-01	4.096	.0000	.37362134

Normal exit from iterations. Exit status=0.

```

-----
Limited Dependent Variable Model - FRONTIER
Maximum Likelihood Estimates
Dependent variable RI
Weighting variable ONE
Number of observations 259
Iterations completed 9
Log likelihood function -817.3063
Variances: Sigma-squared(v)= 25.98312
Sigma-squared(u)= 17.42131
-----

```

Variable	Coefficient	Standard Error	b/St.Er.	P[Z >z]	Mean of X
Primary Index Equation for Model					
Constant	3.661802708	.91714125	3.993	.0001	
RM	.3551799547	.70893649E-01	5.010	.0000	.37362134
Variance parameters for compound error					
Lambda	.8188319902	.17901373	4.574	.0000	
Sigma	6.588203817	.30587531	21.539	.0000	

ประวัติผู้เขียน

ชื่อ	นางสาวนันท์วัน กัณมา
วัน เดือน ปี เกิด	29 สิงหาคม 2520
ประวัติการศึกษา	สำเร็จการศึกษามัธยมศึกษาตอนปลาย โรงเรียนท่าวังผาพิทยาคม น่าน ปีการศึกษา 2538 สำเร็จการศึกษาระดับปริญญาวิทยาศาสตรบัณฑิต สาขาสถิติ มหาวิทยาลัยเชียงใหม่ ปีการศึกษา 2543

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