

APPENDIX A

A. Baseline estimate of the aggregate dollar amount of sales.

First, calculate the average daily dollar amount of sales (ADS) for each month in the sample (January 1994 - January 2004). The data obtained from the exchanges and NASD are presented in Table A. The monthly aggregate dollar amount of sales (exchange plus Nasdaq) is contained in column E.

Next, calculate the change in the natural logarithm of ADS from month-to-month. The average monthly change in the logarithm of ADS over the entire sample is 0.015 and the standard deviation 0.118. Assume the monthly percentage change in ADS follows a random walk. The expected monthly percentage growth rate of ADS is 2.2 percent.

Now, use the expected monthly percentage growth rate to forecast total dollar volume. For example, one can use the ADS for January 2004 (\$120,604,513,953) to forecast ADS for February 2004 (\$123,288,117,886 = \$120,604,513,953 x 1.022).¹ Multiply by the number of trading days in February 2004 (19) to obtain a forecast of the total dollar volume forecast for the month (\$2,342,474,239,842). Repeat the method to generate forecasts for subsequent months.

The forecasts for total dollar volume are in column I of Table A. The following is a more formal (mathematical) description of the procedure:

1. Divide each month's total dollar volume (column E) by the number of trading days in that month (column B) to obtain the average daily dollar volume (ADS, column F).
2. For each month t , calculate the change in ADS from the previous month as $\Delta_t = \log(ADS_t / ADS_{t-1})$, where $\log(x)$ denotes the natural logarithm of x .
3. Calculate the mean and standard deviation of the series $\{\Delta_1, \Delta_2, \dots, \Delta_{120}\}$. These are given by $\mu = 0.015$ and $\sigma = 0.118$, respectively.
4. Assume that the natural logarithm of ADS follows a random walk, so that Δ_s and Δ_t are statistically independent for any two months s and t .
5. Under the assumption that Δ_t is normally distributed, the expected value of ADS_t / ADS_{t-1} is given by $\exp(\mu + \sigma^2/2)$, or on average $ADS_t = 1.022 \times ADS_{t-1}$.
6. For February 2004, this gives a forecast ADS of $1.022 \times \$120,604,513,953 = \$123,288,117,886$. Multiply this figure by the 19 trading days in February 2004 to obtain a total dollar volume forecast of \$2,342,474,239,842.
7. For March 2004, multiply the February 2004 ADS forecast by 1.022 to obtain a forecast ADS of \$126,031,435,423. Multiply this figure by the 23 trading days in March 2004 to obtain a total dollar volume forecast of \$2,898,723,014,722.

¹ The value 1.022 has been rounded. All computations are done with the unrounded value.

8. Repeat this procedure for subsequent months.

B. Using the forecasts from A to calculate the new fee rate.

1. Using the data from Table A, determine the actual and projected aggregate dollar volume of sales between 10/1/03 and 2/21/04 to be \$10,380,624,611,797. (Allocate the projected aggregate dollar volume in February 2004 based on the number of trading days in the periods – 14 trading days during 2/1/04 and 2/21/04, and 5 trading days during 2/22/04 and 2/29/04.) Multiply this amount by the fee rate of \$46.80 per million dollars in sales during this period and get an estimate of \$485,813,231 in actual and projected fees collected during 10/1/03 and 2/21/04. Determine the projected aggregate dollar volume of sales between 2/22/04 and 3/31/04 to be \$3,515,163,604,154. Multiply this amount by the fee rate of \$39.00 per million dollars in sales during this period and get an estimate of \$137,091,381 in projected fees collected during 2/22/04 and 3/31/04.
2. Estimate the amount of assessments on securities futures products collected during 10/1/03 and 9/30/04 to be \$23,900 by summing the amounts collected through January of \$7,700 with projections of a 2.2% monthly increase in subsequent months.
3. Using the data from Table A, determine the projected aggregate dollar volume of sales between 4/1/04 and 9/30/04 to be \$17,307,204,075,317.
4. The rate necessary to collect the target \$1,028,000,000 in fee revenues is then calculated as:
$$(\$1,028,000,000 - \$485,813,231 - \$137,091,381 - \$23,900) \div \$17,307,204,075,317 = .000023405.$$
5. Consistent with the system requirements of the exchanges and the NASD, round the rate to the seventh decimal point, yielding a rate of .0000234 (or \$23.40 per million).

Table A. Estimation of baseline of the aggregate dollar amount of sales.
(Methodology developed in consultation with the Office of Management and Budget and the Congressional Budget Office.)

Fee rate calculation.

a. Baseline estimate of the aggregate dollar amount of sales, 10/1/03 to 2/21/04 (\$Millions)	10,380,625
b. Baseline estimate of the aggregate dollar amount of sales, 2/22/04 to 3/31/04 (\$Millions)	3,515,164
c. Baseline estimate of the aggregate dollar amount of sales, 4/1/04 to 9/30/04 (\$Millions)	17,307,204
d. Estimated collections in assessments on securities futures products in FY 2004 (\$Millions)	0.024
e. Implied fee rate ($(\$1,028,000,000 - 0.0000468*a - 0.0000390*b - d) / c$)	\$23.40479

Data

(A) Month	(B) # of Trading Days in Month	(C) Exchange-Listed Dollar Amount of Sales	(D) Nasdaq Dollar Amount of Sales	(E) Aggregate Dollar Amount of Sales	(F) Average Daily Dollar Amount of Sales (ADS)	(G) Change in LN of ADS	(H) Forecast ADS	(I) Forecast Aggregate Dollar Amount of Sales
Jan-94	21	277,615,393,351	137,551,072,000	415,166,465,351	19,769,831,683	-		
Feb-94	19	281,053,587,314	122,882,920,000	403,936,507,314	21,259,816,174	0.073		
Mar-94	23	316,713,498,173	151,177,373,000	467,890,871,173	20,343,081,355	-0.044		
Apr-94	19	289,365,151,226	114,834,515,000	404,199,666,226	21,273,666,643	0.045		
May-94	21	241,278,516,490	112,318,747,000	353,597,263,490	16,837,964,928	-0.234		
Jun-94	22	245,067,967,632	112,555,736,000	357,623,703,632	16,255,622,892	-0.035		
Jul-94	20	221,511,138,952	100,563,525,000	322,074,663,952	16,103,733,198	-0.009		
Aug-94	23	255,511,795,450	127,675,353,000	383,187,148,450	16,660,310,802	0.034		
Sep-94	21	273,589,300,476	111,984,539,000	385,573,839,476	18,360,659,023	0.097		
Oct-94	21	266,363,537,805	129,089,800,000	395,453,337,805	18,831,111,324	0.025		
Nov-94	21	267,314,618,799	121,827,668,000	389,142,286,799	18,530,585,086	-0.016		
Dec-94	21	265,184,891,948	106,839,641,000	372,024,532,948	17,715,453,950	-0.045		
Jan-95	21	253,958,524,771	125,092,685,000	379,051,209,771	18,050,057,608	0.019		
Feb-95	19	263,486,075,035	125,574,811,000	389,060,886,035	20,476,888,739	0.126		
Mar-95	23	330,806,034,718	161,066,575,000	491,872,609,718	21,385,765,640	0.043		
Apr-95	19	285,586,213,818	149,741,420,000	435,327,633,818	22,911,980,727	0.069		
May-95	22	340,254,177,379	191,600,883,000	531,855,060,379	24,175,230,017	0.054		
Jun-95	22	376,703,055,609	197,629,158,000	574,332,213,609	26,106,009,710	0.077		
Jul-95	20	346,809,496,831	229,239,839,000	576,049,335,831	28,802,466,792	0.098		
Aug-95	23	327,435,391,060	243,203,335,000	570,638,726,060	24,810,379,394	-0.149		
Sep-95	20	352,176,019,676	225,957,920,000	578,133,939,676	28,906,696,984	0.153		
Oct-95	22	386,892,948,035	255,297,230,000	642,190,178,035	29,190,462,638	0.010		
Nov-95	21	340,868,134,565	255,556,416,000	596,424,550,565	28,401,169,075	-0.027		
Dec-95	20	386,356,222,037	238,254,219,000	624,610,441,037	31,230,522,052	0.095		
Jan-96	22	412,342,988,854	275,256,103,000	687,599,091,854	31,254,504,175	0.001		
Feb-96	20	432,110,721,273	255,121,750,000	687,232,471,273	34,361,623,564	0.095		
Mar-96	21	462,522,216,093	252,313,904,000	714,836,120,093	34,039,815,243	-0.009		
Apr-96	21	419,529,647,022	284,880,671,000	704,410,318,022	33,543,348,477	-0.015		
May-96	22	444,864,509,489	323,514,998,000	768,379,507,489	34,926,341,250	0.040		

Jun-96	20	364,047,300,223	267,051,480,000	631,098,780,223	31,554,939,011	-0.102		
Jul-96	22	405,998,331,384	282,430,397,000	688,428,728,384	31,292,214,927	-0.008		
Aug-96	22	347,207,351,036	222,902,421,000	570,109,772,036	25,914,080,547	-0.189		
Sep-96	20	361,752,600,688	255,491,281,000	617,243,881,688	30,862,194,084	0.175		
Oct-96	23	450,138,412,454	314,131,029,000	764,269,441,454	33,229,106,150	0.074		
Nov-96	20	468,499,807,419	279,994,893,000	748,494,700,419	37,424,735,021	0.119		
Dec-96	21	475,791,378,753	288,688,118,000	764,479,496,753	36,403,785,560	-0.028		
Jan-97	22	578,613,348,586	378,819,289,000	957,432,637,586	43,519,665,345	0.179		
Feb-97	19	500,101,991,446	337,072,192,000	837,174,183,446	44,061,799,129	0.012		
Mar-97	20	526,670,517,788	312,522,211,000	839,192,728,788	41,959,636,439	-0.049		
Apr-97	22	541,016,966,315	321,782,247,000	862,799,213,315	39,218,146,060	-0.068		
May-97	21	560,712,670,647	365,021,182,000	925,733,852,647	44,082,564,412	0.117		
Jun-97	21	590,497,004,859	339,912,081,000	930,409,085,859	44,305,194,565	0.005		
Jul-97	22	665,142,486,898	420,540,220,000	1,085,682,706,898	49,349,213,950	0.108		
Aug-97	21	646,260,997,751	385,083,141,000	1,031,344,138,751	49,111,625,655	-0.005		
Sep-97	21	636,729,800,602	399,730,444,000	1,036,460,244,602	49,355,249,743	0.005		
Oct-97	23	795,309,593,718	534,343,839,000	1,329,653,432,718	57,811,018,814	0.158		
Nov-97	19	614,656,941,587	311,360,937,000	926,017,878,587	48,737,783,084	-0.171		
Dec-97	22	670,717,275,199	375,503,531,000	1,046,220,806,199	47,555,491,191	-0.025		
Jan-98	20	662,635,021,902	375,290,271,000	1,037,925,292,902	51,896,264,645	0.087		
Feb-98	19	672,828,859,396	408,876,474,000	1,081,705,333,396	56,931,859,652	0.093		
Mar-98	22	795,132,023,467	464,862,662,000	1,259,994,685,467	57,272,485,703	0.006		
Apr-98	21	819,690,018,253	478,804,341,000	1,298,494,359,253	61,833,064,726	0.077		
May-98	20	717,931,027,995	392,290,631,000	1,110,221,658,995	55,511,082,950	-0.108		
Jun-98	22	778,892,937,913	464,886,854,000	1,243,779,791,913	56,535,445,087	0.018		
Jul-98	22	837,582,352,748	561,429,081,000	1,399,011,433,748	63,591,428,807	0.118		
Aug-98	21	812,804,954,442	494,696,509,000	1,307,501,463,442	62,261,974,450	-0.021		
Sep-98	21	899,449,779,083	452,978,456,000	1,352,428,235,083	64,401,344,528	0.034		
Oct-98	22	941,206,761,926	519,628,635,672	1,460,835,397,598	66,401,608,982	0.031		
Nov-98	20	763,668,070,478	534,735,697,587	1,298,403,768,065	64,920,188,403	-0.023		
Dec-98	22	832,619,360,060	610,078,427,246	1,442,697,787,306	65,577,172,150	0.010		
Jan-99	19	1,002,792,782,534	881,762,273,376	1,884,555,055,910	99,187,108,206	0.414		
Feb-99	19	884,236,683,650	771,821,519,115	1,656,058,202,765	87,160,958,040	-0.129		
Mar-99	23	1,063,644,002,718	845,323,661,356	1,908,967,664,074	82,998,594,090	-0.049		
Apr-99	21	1,202,755,130,954	974,846,639,668	2,177,601,770,622	103,695,322,411	0.223		
May-99	20	1,055,752,423,736	728,648,483,251	1,784,400,906,987	89,220,045,349	-0.150		
Jun-99	22	968,672,852,262	728,666,375,241	1,697,339,227,503	77,151,783,068	-0.145		
Jul-99	21	971,377,415,431	795,657,683,556	1,767,035,098,986	84,144,528,523	0.087		
Aug-99	22	910,143,257,265	782,763,893,461	1,692,907,150,726	76,950,325,033	-0.089		
Sep-99	21	887,751,464,814	842,754,416,364	1,730,505,881,178	82,405,041,961	0.068		

Oct-99	21	1,078,637,908,317	938,836,857,225	2,017,474,765,542	96,070,226,931	0.153		
Nov-99	21	1,129,374,113,398	1,218,999,895,936	2,348,374,009,334	111,827,333,778	0.152		
Dec-99	22	1,214,245,992,515	1,472,542,539,476	2,686,788,531,991	122,126,751,454	0.088		
Jan-00	20	1,298,320,930,164	1,759,510,466,949	3,057,831,397,113	152,891,569,856	0.225		
Feb-00	20	1,242,939,925,885	1,730,179,962,177	2,973,119,888,063	148,655,994,403	-0.028		
Mar-00	23	1,674,957,313,287	2,460,195,052,947	4,135,152,366,234	179,789,233,315	0.190		
Apr-00	19	1,435,035,900,103	1,739,658,625,584	3,174,694,525,687	167,089,185,562	-0.073		
May-00	22	1,275,173,133,440	1,374,100,073,878	2,649,273,207,318	120,421,509,424	-0.328		
Jun-00	22	1,288,821,230,447	1,594,692,767,334	2,883,513,997,781	131,068,818,081	0.085		
Jul-00	20	1,210,411,492,966	1,594,341,902,395	2,804,753,395,361	140,237,669,768	0.068		
Aug-00	23	1,212,084,264,128	1,508,704,131,703	2,720,788,395,832	118,295,147,645	-0.170		
Sep-00	20	1,266,743,469,149	1,663,445,339,863	2,930,188,809,012	146,509,440,451	0.214		
Oct-00	22	1,520,695,416,929	1,965,230,890,799	3,485,926,307,727	158,451,195,806	0.078		
Nov-00	21	1,293,925,005,931	1,501,853,870,956	2,795,778,876,887	133,132,327,471	-0.174		
Dec-00	20	1,372,200,223,377	1,437,717,126,473	2,809,917,349,851	140,495,867,493	0.054		
Jan-01	21	1,553,316,868,836	1,590,184,256,408	3,143,501,125,244	149,690,529,774	0.063		
Feb-01	19	1,229,720,673,393	1,142,699,849,893	2,372,420,523,286	124,864,238,068	-0.181		
Mar-01	22	1,459,253,562,636	1,095,165,522,477	2,554,419,085,113	116,109,958,414	-0.073		
Apr-01	20	1,320,145,219,933	1,004,204,287,812	2,324,349,507,745	116,217,475,387	0.001		
May-01	22	1,321,526,084,016	1,031,653,304,287	2,353,179,388,303	106,962,699,468	-0.083		
Jun-01	21	1,247,283,258,199	864,638,855,037	2,111,922,113,236	100,567,719,678	-0.062		
Jul-01	21	1,242,431,937,109	761,952,097,446	2,004,384,034,554	95,446,858,788	-0.052		
Aug-01	23	1,126,055,224,969	677,510,112,826	1,803,565,337,795	78,415,884,252	-0.197		
Sep-01	15	1,047,626,761,645	525,858,184,738	1,573,484,946,383	104,898,996,426	0.291		
Oct-01	23	1,349,118,916,636	798,119,956,408	2,147,238,873,044	93,358,211,871	-0.117		
Nov-01	21	1,172,054,711,429	767,372,506,089	1,939,427,217,518	92,353,677,025	-0.011		
Dec-01	20	1,163,934,125,870	757,164,612,243	1,921,098,738,113	96,054,936,906	0.039		
Jan-02	21	1,295,560,129,211	853,683,183,221	2,149,243,312,432	102,344,919,640	0.063		
Feb-02	19	1,265,596,423,330	663,234,172,254	1,928,830,595,585	101,517,399,768	-0.008		
Mar-02	20	1,391,686,235,846	610,530,138,668	2,002,216,374,514	100,110,818,726	-0.014		
Apr-02	22	1,425,803,762,869	636,298,103,636	2,062,101,866,506	93,731,903,023	-0.066		
May-02	22	1,389,719,439,112	596,147,222,417	1,985,866,661,529	90,266,666,433	-0.038		
Jun-02	20	1,346,504,731,252	535,838,197,360	1,882,342,928,611	94,117,146,431	0.042		
Jul-02	22	1,788,275,328,841	563,694,536,838	2,351,969,865,679	106,907,721,167	0.127		
Aug-02	22	1,370,483,507,861	427,166,695,393	1,797,650,203,254	81,711,372,875	-0.269		
Sep-02	20	1,146,955,551,522	376,346,966,238	1,523,302,517,760	76,165,125,888	-0.070		
Oct-02	23	1,605,473,978,372	529,782,736,090	2,135,256,714,462	92,837,248,455	0.198		
Nov-02	20	1,287,672,575,420	498,605,599,233	1,786,278,174,653	89,313,908,733	-0.039		
Dec-02	21	1,150,267,594,827	415,897,247,519	1,566,164,842,346	74,579,278,207	-0.180		
Jan-03	21	1,248,793,946,741	474,904,883,673	1,723,698,830,414	82,080,896,686	0.096		

Feb-03	19	1,070,048,068,849	341,674,336,507	1,411,722,405,357	74,301,179,229	-0.100		
Mar-03	21	1,293,340,642,585	406,242,999,932	1,699,583,642,517	80,932,554,406	0.085		
Apr-03	21	1,310,080,563,238	449,316,319,231	1,759,396,882,469	83,780,803,927	0.035		
May-03	21	1,451,830,957,154	419,562,973,291	1,871,393,930,445	89,113,996,688	0.062		
Jun-03	21	1,656,129,355,959	466,098,458,761	2,122,227,814,720	101,058,467,368	0.126		
Jul-03	22	1,622,749,852,799	478,067,675,641	2,100,817,528,440	95,491,705,838	-0.057		
Aug-03	21	1,407,923,702,993	356,078,779,421	1,764,002,482,414	84,000,118,210	-0.128		
Sep-03	21	1,615,383,245,929	444,929,704,768	2,060,312,950,696	98,110,140,509	0.155		
Oct-03	23	1,828,085,746,139	486,831,267,393	2,314,917,013,532	100,648,565,806	0.026		
Nov-03	19	1,538,248,661,152	356,092,108,495	1,894,340,769,647	99,702,145,771	-0.009		
Dec-03	22	1,690,021,194,145	343,221,705,000	2,033,242,899,145	92,420,131,779	-0.076		
Jan-04	20	1,929,842,015,739	482,248,263,325	2,412,090,279,064	120,604,513,953	0.266		
Feb-04	19						123,288,117,886	2,342,474,239,842
Mar-04	23						126,031,435,423	2,898,723,014,722
Apr-04	21						128,835,795,266	2,705,551,700,579
May-04	20						131,702,555,684	2,634,051,113,688
Jun-04	22						134,633,105,171	2,961,928,313,763
Jul-04	21						137,628,863,114	2,890,206,125,385
Aug-04	22						140,691,280,483	3,095,208,170,629
Sep-04	21						143,821,840,537	3,020,258,651,273