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β = 1 DOES A BETTER JOB THAN CALCULATED BETAS

Pablo Fernández

Vicente J. Bermejo

IESE Business School – University of Navarra
Av. Pearson, 21 – 08034 Barcelona, Spain. Phone: (+34) 93 253 42 00 Fax: (+34) 93 253 43 43
Camino del Cerro del Águila, 3 (Ctra. de Castilla, km 5,180) – 28023 Madrid, Spain. Phone: (+34) 91 357 08 09 Fax: (+34) 91 357 29 13

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Pablo Fernández[1]

Vicente J. Bermejo[2]

Abstract

We compute the correlations of the annual stock returns (1989-2008) of Dow Jones companies with a) β Rm, and with b) Rm; and find that the second correlation (assuming beta = 1 for all companies) is higher than the first, on average, and for all companies except Caterpillar and General Motors. Rm is the return of the S&P 500. Thus, beta = 1 works better than calculated betas!

Not surprisingly, Adjusted betas (0.67 calculated beta + 0.33) have higher correlation than calculated betas, but Adjusted betas have lower correlation than beta = 1.

We do the exercise with 4 calculated betas every year end vs. the S&P 500, using: a) monthly data of last 5 years; b) monthly data of last 2 years; c) weekly data of last 5 years, and d) daily data of last 5 years. We find similar results with the four betas.

Despite these results, Fernández (2009) reports that 97.3 % of professors who justify the betas use regressions, webs, databases, textbooks or papers (the paper specifies which ones), although many of them admit that calculated betas *"are poorly measured and have many problems."* Only 0.9% of the professors justified the beta using exclusively personal judgment.

Classification JEL: G12, G31, G32

Keywords: beta, historical beta, calculated beta, adjusted beta, common sens.

[1] Professor, Financial Management, PricewaterhouseCoopers Chair of Finance, IESE

[2] Research Assistant, IESE

$\beta = 1$ DOES A BETTER JOB THAN CALCULATED BETAS

We compute the correlations of the annual stock returns (1989-2008) of the Dow Jones companies[1] with a) β Rm, and with b) Rm and find that the second correlation (assuming beta = 1 for all companies) is higher than the first, on average, and for all companies except Caterpillar and General Motors. Rm is the return of the S&P 500. Thus, beta = 1 works better than calculated betas!

Not surprisingly, Adjusted betas (0.67 calculated beta + 0.33) have higher correlation than calculated betas, but Adjusted betas have lower correlation than beta = 1.

We do the exercise with 4 calculated betas every year end vs. the S&P 500, using: a) monthly data of last 5 years; b) monthly data of last 2 years; c) weekly data of last 5 years, and d) daily data of last 5 years.

Table 1 shows the Correlation (R_t, β Rm_t), the Correlation (R_t, Rm_t) and their difference using four different calculated betas: a) monthly data of the last 5 years; b) monthly data of the last two years; c) weekly data of the last 5 years; d) daily data of the last 5 years. The betas are calculated every year end vs. the S&P 500 using Datastream. It may be seen that 21 companies had Correlation (R_t, Rm_t) > Correlation (R_t, β Rm_t) using betas calculated with monthly data of the last 5 years. With the other calculated betas, 23, 24 and 17 companies had this result. It may also be seen that the average Correlation (R_t, β Rm_t) - Correlation (R_t, Rm_t) is negative in the 4 cases. Only Caterpillar and General Motors have the four differences > 0.

Table 2 shows the Correlation (R_t, ADJβ Rm_t), the Correlation (R_t, Rm_t) and their difference using the 4 different calculated betas of Table 1. ADJβ = Adjusted beta = 0.67 Raw beta + 0.33. It may be seen that 19 companies had Correlation (R_t, Rm_t) > Correlation (R_t, ADJβ Rm_t) using adjusted betas calculated with monthly data of the last 5 years. With the other adjusted betas, 20, 22 and 15 companies had this result. It also may be seen that the average Correlation (R_t, ADJβ Rm_t) - Correlation (R_t, Rm_t) is negative in the four cases. Only Caterpillar, Chevron and General Motors have the four differences > 0.

[1] We calculate betas of 29 companies and exclude Kraft Foods because we only have data for them back to 2001.

Not surprisingly, adjusted betas (0.67 Raw beta + 0.33) work better than Raw betas. **Table 3** shows the Correlation (R_t, β Rm_t), the Correlation (R_t, ADJβ Rm_t) and their difference using the four different calculated betas of Table 1. ADJβ = Adjusted beta = 0.67 Raw beta + 0.33. It may be seen that 25 companies had Correlation (R_t, ADJβ Rm_t) > Correlation (R_t, β Rm_t) using adjusted betas calculated with monthly data of the last 5 years. With the other adjusted betas, 24, 24 and 19 companies had this result. It also may be seen that the average Correlation (R_t, β Rm_t) - Correlation (R_t, ADJβ Rm_t) is negative in the four cases. It may be seen that the average difference is higher (in absolute value) in Table 1 than in Table 3. As in Table 1, only Caterpillar and General Motors have the four differences > 0.

A) BETAS Calculated vs. the S&P 500 at Year end Using MONTHLY Data of the Last 5 YEARS

Figure 1 shows the evolution of the BETA of each company calculated vs. the S&P 500 at year end using MONTHLY data of the last 5 YEARS.

Table 4 shows the difference between 2 Correlations [ρ(R_t, β Rm_t) - ρ (R_t, Rm_t) from 1989 to the indicated year]. It may be seen that the average difference is negative in the 11 intervals considered.

Table 5 shows the difference between 2 Correlations [ρ(R_t, β Rm_t) - ρ (R_t, Rm_t) from the indicated year until 2008]. It may be seen that the average difference is negative in the 11 intervals considered.

B) BETAS Calculated vs. the S&P 500 at Year end Using MONTHLY Data of the Last 2 YEARS

Figure 2 shows the evolution of the BETA of each company calculated vs. the S&P 500 at year end using MONTHLY data of the last 2 YEARS.

Table 6 shows the difference between 2 Correlations [ρ(R_t, β Rm_t) - ρ (R_t, Rm_t) from 1989 to the indicated year]. It may be seen that the average difference is negative in the 11 intervals considered.

Table 7 shows the difference between 2 Correlations [ρ(R_t, β Rm_t) - ρ (R_t, Rm_t) from the indicated year until 2008]. It may be seen that the average difference is negative in the 11 intervals considered.

C) BETAS Calculated vs. the S&P 500 at Year end Using WEEKLY Data of the Last 5 YEARS

Figure 3 shows the evolution of the BETA of each company calculated vs. the S&P 500 at year end using WEEKLY data of the last 5 YEARS.

Table 8 shows the difference between 2 Correlations [$\rho(R_t, \beta\ Rm_t) - \rho\ (R_t, Rm_t)$ from 1989 to the indicated year]. It may be seen that the average difference is negative in the 11 intervals considered.

Table 9 shows the difference between 2 Correlations [$\rho(R_t, \beta\ Rm_t) - \rho\ (R_t, Rm_t)$ from the indicated year until 2008]. It may be seen that the average difference is negative in the 11 intervals considered.

D) BETAS Calculated vs. the S&P 500 at Year end Using DAILY Data of the Last 5 YEARS

Figure 4 shows the evolution of the BETA of each company calculated vs. the S&P 500 at year end using DAILY data of the last 5 YEARS.

Table 10 shows the difference between 2 Correlations [$\rho(R_t, \beta\ Rm_t) - \rho\ (R_t, Rm_t)$ from 1989 to the indicated year]. It may be seen that the average difference is negative in the 11 intervals considered.

Table 11 shows the difference between 2 Correlations [$\rho(R_t, \beta\ Rm_t) - \rho\ (R_t, Rm_t)$ from the indicated year until 2008]. It may be seen that the average difference is negative in the 11 intervals considered.

Table 12 contains the last column of Tables 4 to 11. It may be seen, again, that $\beta = 1$ has higher correlation with returns than calculated betas for all companies except Caterpillar and General Motors

Despite these results, Fernández (2009)[2] reports that 97.3% of the professors who justify the betas use regressions, webs, databases, textbooks or papers (the paper specifies which ones), although many of them admit that calculated betas *"are poorly measured and have many problems."* Only 0.9% of the professors justified the beta using exclusively personal judgment (named *qualitative* betas, *common sense* betas, *intuitive* betas, *logical magnitude* betas and *own judgment* betas by different professors).

[2] Fernández, P. (2009), "Betas used by Professors: a survey with 2,500 answers", SSRN n. 1407464.

Table 1

1989-2008. Raw betas vs. BETA = 1

Correlation (R_t, β Rm_t)), Correlation (R_t, Rm_t) and its difference using four different calculated betas: a) monthly data of last 5 years; b) monthly data of last 2 years; c) weekly data of last 5 years, and d) daily data of last 5 years. **Betas calculated every year end vs. the S&P 500.**

	Monthly data, last 5 years			Monthly data, last 2 years			Weekly data, last 5 years			Daily data, last 5 years		
	R (correlation)			**R (correlation)**			**R (correlation)**			**R (correlation)**		
	Rt, β Rm	**Rt, Rm**	dif	**Rt, β Rm**	**Rt, Rm**	dif	**Rt, β Rm**	**Rt, Rm**	dif	**Rt, β Rm**	**Rt, Rm**	dif
3M	0.513	0.535	-0.022	0.453	0.535	-0.082	0.545	0.535	**0.010**	0.539	0.535	**0.004**
AT&T	0.683	0.745	-0.062	0.457	0.745	-0.288	0.635	0.745	-0.110	0.729	0.745	-0.016
ALCOA	0.654	0.639	**0.016**	0.549	0.639	-0.090	0.670	0.639	**0.032**	0.670	0.639	**0.031**
AMERICAN EXPRESS	0.718	0.794	-0.076	0.700	0.794	-0.094	0.746	0.794	-0.048	0.780	0.794	-0.014
BANK OF AMERICA	0.475	0.627	-0.152	0.485	0.627	-0.142	0.515	0.627	-0.112	0.512	0.627	-0.115
BOEING	0.474	0.477	-0.003	0.239	0.477	-0.237	0.506	0.477	**0.030**	0.474	0.477	-0.002
CATERPILLAR	0.443	0.394	**0.050**	0.458	0.394	**0.065**	0.462	0.394	**0.069**	0.394	0.394	**0.000**
CHEVRON	0.722	0.666	**0.056**	0.808	0.666	**0.142**	0.657	0.666	-0.009	0.664	0.666	-0.002
CITIGROUP	0.723	0.776	-0.053	0.699	0.776	-0.077	0.662	0.776	-0.114	0.732	0.776	-0.043
COCA-COLA	0.553	0.647	-0.094	0.313	0.647	-0.334	0.457	0.647	-0.190	0.647	0.647	**0.000**
DU PONT	0.745	0.773	-0.027	0.724	0.773	-0.049	0.721	0.773	-0.051	0.739	0.773	-0.033
EXXON MOBIL	0.812	0.821	-0.010	0.816	0.821	-0.005	0.821	0.821	-0.001	0.769	0.821	-0.053
GENERAL ELECTRIC	0.924	0.958	-0.034	0.925	0.958	-0.033	0.902	0.958	-0.056	0.921	0.958	-0.037
GENERAL MOTORS	0.673	0.639	**0.034**	0.712	0.639	**0.073**	0.717	0.639	**0.078**	0.700	0.639	**0.061**
HEWLETT-PACKARD	0.669	0.670	-0.001	0.513	0.670	-0.157	0.615	0.670	-0.054	0.679	0.670	**0.009**
HOME DEPOT	0.546	0.602	-0.056	0.649	0.602	0.047	0.574	0.602	-0.029	0.636	0.602	**0.033**
INTEL	0.620	0.670	-0.050	0.633	0.670	-0.037	0.578	0.670	-0.091	0.604	0.670	-0.065
IBM	0.366	0.395	-0.029	0.473	0.395	**0.078**	0.379	0.395	-0.016	0.405	0.395	**0.010**
JP MORGAN CHASE	0.650	0.679	-0.029	0.578	0.679	-0.101	0.652	0.679	-0.027	0.647	0.679	-0.032
JOHNSON & JOHNSON	0.647	0.615	**0.032**	0.589	0.615	-0.026	0.578	0.615	-0.037	0.634	0.615	**0.019**
MCDONALDS	0.627	0.681	-0.054	0.661	0.681	-0.021	0.645	0.681	-0.037	0.643	0.681	-0.038
MERCK & CO.	0.559	0.590	-0.031	0.455	0.590	-0.135	0.531	0.590	-0.059	0.599	0.590	**0.010**
MICROSOFT	0.458	0.629	-0.171	0.476	0.629	-0.153	0.492	0.629	-0.136	0.586	0.629	-0.043
PFIZER	0.612	0.610	**0.002**	0.408	0.610	-0.202	0.486	0.610	-0.124	0.618	0.610	**0.008**
PROCTER & GAMBLE	0.659	0.688	-0.028	0.472	0.688	-0.215	0.627	0.688	-0.060	0.643	0.688	-0.044
UNITED TECH.	0.668	0.775	-0.107	0.605	0.775	-0.171	0.753	0.775	-0.022	0.780	0.775	**0.005**
VERIZON COM	0.596	0.657	-0.061	0.411	0.657	-0.246	0.562	0.657	-0.095	0.592	0.657	-0.065
WAL MART STORES	0.491	0.472	**0.019**	0.628	0.472	**0.155**	0.306	0.472	-0.166	0.466	0.472	-0.007
WALT DISNEY	0.705	0.687	**0.018**	0.654	0.687	-0.033	0.686	0.687	-0.001	0.687	0.687	**0.000**
Average	**0.620**	**0.652**	**-0.032**	**0.570**	**0.652**	**-0.082**	**0.603**	**0.652**	**-0.049**	**0.638**	**0.652**	**-0.014**
Máx.	*0.924*	*0.958*	*0.056*	*0.925*	*0.958*	*0.155*	*0.902*	*0.958*	*0.078*	*0.921*	*0.958*	*0.061*
Mín.	*0.366*	*0.394*	*-0.171*	*0.239*	*0.394*	*-0.334*	*0.306*	*0.394*	*-0.190*	*0.394*	*0.394*	*-0.115*
<0			*21*			*23*			*24*			*17*

Source: Datastream.

Table 2

1989 -2008. Adjusted betas vs. BETA =1

Correlation (R_t, Adjβ Rm_t), Correlation (R_t, Rm_t) and its difference using four different calculated betas: a) monthly data of last 5 years; b) monthly data of last 2 years; c) weekly data of last 5 years, and d) daily data of last 5 years. **Betas calculated every year end vs. the S&P 500.**

Adjusted beta = 0,67 Raw beta + 0,33

	Monthly data, last 5 years			Monthly data, last 2 years			Weekly data, last 5 years			Daily data, last 5 years		
	R (correlation)			**R (correlation)**			**R (correlation)**			**R (correlation)**		
	Rt, β Rm	**Rt, Rm**	dif	**Rt, β Rm**	**Rt, Rm**	dif	**Rt, β Rm**	**Rt, Rm**	dif	**Rt, β Rm**	**Rt, Rm**	dif
3M	0.528	0.535	-0.008	0.504	0.535	-0.031	0.544	0.535	**0.009**	0.538	0.535	**0.003**
AT&T	0.724	0.745	-0.021	0.624	0.745	-0.121	0.700	0.745	-0.045	0.741	0.745	-0.003
ALCOA	0.658	0.639	**0.019**	0.580	0.639	-0.059	0.666	0.639	**0.027**	0.661	0.639	**0.022**
AMERICAN EXPRESS	0.752	0.794	-0.042	0.749	0.794	-0.045	0.775	0.794	-0.019	0.788	0.794	-0.006
BANK OF AMERICA	0.534	0.627	-0.093	0.550	0.627	-0.077	0.561	0.627	-0.066	0.568	0.627	-0.059
BOEING	0.476	0.477	-0.001	0.338	0.477	-0.138	0.500	0.477	**0.024**	0.476	0.477	**0.000**
CATERPILLAR	0.429	0.394	**0.035**	0.448	0.394	**0.054**	0.443	0.394	**0.049**	0.394	0.394	**0.001**
CHEVRON	0.701	0.666	**0.035**	0.770	0.666	**0.104**	0.665	0.666	**0.000**	0.669	0.666	**0.004**
CITIGROUP	0.743	0.776	-0.032	0.731	0.776	-0.045	0.705	0.776	-0.071	0.751	0.776	-0.024
COCA-COLA	0.597	0.647	-0.050	0.477	0.647	-0.170	0.554	0.647	-0.093	0.652	0.647	**0.006**
DU PONT	0.759	0.773	-0.014	0.746	0.773	-0.026	0.748	0.773	-0.024	0.758	0.773	-0.015
EXXON MOBIL	0.818	0.821	-0.003	0.835	0.821	**0.013**	0.833	0.821	**0.012**	0.809	0.821	-0.013
GENERAL ELECTRIC	0.943	0.958	-0.015	0.954	0.958	-0.004	0.935	0.958	-0.023	0.946	0.958	-0.012
GENERAL MOTORS	0.666	0.639	**0.027**	0.699	0.639	**0.060**	0.701	0.639	**0.062**	0.680	0.639	**0.041**
HEWLETT-PACKARD	0.676	0.670	**0.007**	0.569	0.670	-0.100	0.649	0.670	-0.021	0.683	0.670	**0.013**
HOME DEPOT	0.574	0.602	-0.028	0.652	0.602	**0.049**	0.591	0.602	-0.011	0.623	0.602	**0.021**
INTEL	0.641	0.670	-0.028	0.673	0.670	**0.003**	0.625	0.670	-0.045	0.641	0.670	-0.029
IBM	0.388	0.395	-0.007	0.465	0.395	**0.070**	0.393	0.395	-0.002	0.405	0.395	**0.010**
JP MORGAN CHASE	0.669	0.679	-0.010	0.625	0.679	-0.054	0.666	0.679	-0.013	0.664	0.679	-0.015
JOHNSON & JOHNSON	0.651	0.615	**0.036**	0.628	0.615	**0.013**	0.601	0.615	-0.014	0.626	0.615	**0.011**
MCDONALDS	0.648	0.681	-0.033	0.680	0.681	-0.001	0.670	0.681	-0.011	0.665	0.681	-0.017
MERCK & CO.	0.581	0.590	-0.009	0.528	0.590	-0.062	0.562	0.590	-0.027	0.595	0.590	**0.005**
MICROSOFT	0.523	0.629	-0.106	0.530	0.629	-0.099	0.554	0.629	-0.075	0.616	0.629	-0.013
PFIZER	0.619	0.610	**0.009**	0.513	0.610	-0.097	0.544	0.610	-0.066	0.614	0.610	**0.005**
PROCTER & GAMBLE	0.688	0.688	**0.000**	0.622	0.688	-0.066	0.661	0.688	-0.026	0.680	0.688	-0.008
UNITED TECH.	0.722	0.775	-0.053	0.685	0.775	-0.090	0.769	0.775	-0.007	0.780	0.775	**0.004**
VERIZON COM	0.630	0.657	-0.026	0.525	0.657	-0.132	0.617	0.657	-0.040	0.635	0.657	-0.022
WAL MART STORES	0.493	0.472	**0.021**	0.598	0.472	**0.126**	0.382	0.472	-0.091	0.470	0.472	-0.003
WALT DISNEY	0.704	0.687	**0.017**	0.684	0.687	-0.003	0.692	0.687	0.005	0.688	0.687	**0.001**
Average	**0.639**	**0.652**	**-0.013**	**0.620**	**0.652**	**-0.032**	**0.631**	**0.652**	**-0.021**	**0.649**	**0.652**	**-0.003**
Máx.	*0.943*	*0.958*	*0.036*	*0.954*	*0.958*	*0.126*	*0.935*	*0.958*	*0.062*	*0.946*	*0.958*	*0.041*
Mín.	*0.388*	*0.394*	*-0.106*	*0.338*	*0.394*	*-0.170*	*0.382*	*0.394*	*-0.093*	*0.394*	*0.394*	*-0.059*
<0			*19*			*20*			*22*			*15*

Source: Datastream.

Table 3

1989 -2008. Raw betas vs. Adjusted betas

Correlation (R_t, β Rm_t), Correlation (R_t, Adjβ Rm_t) and its difference using 4 different calculated betas: a) monthly data of last 5 years; b) monthly data of last 2 years; c) weekly data of last 5 years, and d) daily data of last 5 years. **Betas calculated every year end vs. the S&P 500.**

Adjusted beta = 0,67 Raw beta + 0,33

	Monthly data, last 5 years			Monthly data, last 2 years			Weekly data, last 5 years			Daily data, last 5 years		
	R (correlation)			R (correlation)			R (correlation)			R (correlation)		
	Rt, β Rm	Rt, ADJ.β Rm	dif	Rt, β Rm	Rt, ADJ.β Rm	dif	Rt, β Rm	Rt, ADJ.β Rm	dif	Rt, β Rm	Rt, ADJ.β Rm	dif
3M	0.513	0.528	-0.015	0.453	0.504	-0.051	0.545	0.544	**0.001**	0.539	0.538	**0.001**
AT&T	0.683	0.724	-0.041	0.457	0.624	-0.167	0.635	0.7	-0.065	0.729	0.741	-0.012
ALCOA	0.654	0.658	-0.004	0.549	0.58	-0.031	0.67	0.666	**0.004**	0.67	0.661	**0.009**
AMERICAN EXPRESS	0.718	0.752	-0.034	0.7	0.749	-0.049	0.746	0.775	-0.029	0.78	0.788	-0.008
BANK OF AMERICA	0.475	0.534	-0.059	0.485	0.55	-0.065	0.515	0.561	-0.046	0.512	0.568	-0.056
BOEING	0.474	0.476	-0.002	0.239	0.338	-0.099	0.506	0.5	**0.006**	0.474	0.476	-0.002
CATERPILLAR	0.443	0.429	**0.014**	0.458	0.448	**0.010**	0.462	0.443	**0.019**	0.394	0.394	**0.000**
CHEVRON	0.722	0.701	**0.021**	0.808	0.77	**0.038**	0.657	0.665	-0.008	0.664	0.669	-0.005
CITIGROUP	0.723	0.743	-0.02	0.699	0.731	-0.032	0.662	0.705	-0.043	0.732	0.751	-0.019
COCA-COLA	0.553	0.597	-0.044	0.313	0.477	-0.164	0.457	0.554	-0.097	0.647	0.652	-0.005
DU PONT	0.745	0.759	-0.014	0.724	0.746	-0.022	0.721	0.748	-0.027	0.739	0.758	-0.019
EXXON MOBIL	0.812	0.818	-0.006	0.816	0.835	-0.019	0.821	0.833	-0.012	0.769	0.809	-0.04
GENERAL ELECTRIC	0.924	0.943	-0.019	0.925	0.954	-0.029	0.902	0.935	-0.033	0.921	0.946	-0.025
GENERAL MOTORS	0.673	0.666	**0.007**	0.712	0.699	**0.013**	0.717	0.701	**0.016**	0.7	0.68	**0.020**
HEWLETT-PACKARD	0.669	0.676	-0.007	0.513	0.569	-0.056	0.615	0.649	-0.034	0.679	0.683	-0.004
HOME DEPOT	0.546	0.574	-0.028	0.649	0.652	-0.003	0.574	0.591	-0.017	0.636	0.623	**0.013**
INTEL	0.62	0.641	-0.021	0.633	0.673	-0.04	0.578	0.625	-0.047	0.604	0.641	-0.037
IBM	0.366	0.388	-0.022	0.473	0.465	**0.008**	0.379	0.393	-0.014	0.405	0.405	**0.000**
JP MORGAN CHASE	0.65	0.669	-0.019	0.578	0.625	-0.047	0.652	0.666	-0.014	0.647	0.664	-0.017
JOHNSON & JOHNSON	0.647	0.651	-0.004	0.589	0.628	-0.039	0.578	0.601	-0.023	0.634	0.626	**0.008**
MCDONALDS	0.627	0.648	-0.021	0.661	0.68	-0.019	0.645	0.67	-0.025	0.643	0.665	-0.022
MERCK & CO.	0.559	0.581	-0.022	0.455	0.528	-0.073	0.531	0.562	-0.031	0.599	0.595	**0.004**
MICROSOFT	0.458	0.523	-0.065	0.476	0.53	-0.054	0.492	0.554	-0.062	0.586	0.616	-0.03
PFIZER	0.612	0.619	-0.007	0.408	0.513	-0.105	0.486	0.544	-0.058	0.618	0.614	0.004
PROCTER & GAMBLE	0.659	0.688	-0.029	0.472	0.622	-0.15	0.627	0.661	-0.034	0.643	0.68	-0.037
UNITED TECH.	0.668	0.722	-0.054	0.605	0.685	-0.08	0.753	0.769	-0.016	0.78	0.78	**0.000**
VERIZON COM	0.596	0.63	-0.034	0.411	0.525	-0.114	0.562	0.617	-0.055	0.592	0.635	-0.043
WAL MART STORES	0.491	0.493	-0.002	0.628	0.598	**0.030**	0.306	0.382	-0.076	0.466	0.47	-0.004
WALT DISNEY	0.705	0.704	**0.001**	0.654	0.684	-0.03	0.686	0.692	-0.006	0.687	0.688	-0.001
Average	**0.620**	**0.639**	**-0.019**	**0.570**	**0.620**	**-0.050**	**0.603**	**0.631**	**-0.028**	**0.638**	**0.649**	**-0.011**
Máx.	*0.924*	*0.943*	*0.021*	*0.925*	*0.954*	*0.038*	*0.902*	*0.935*	*0.019*	*0.921*	*0.946*	*0.020*
Mín.	*0.366*	*0.388*	*-0.065*	*0.239*	*0.338*	*-0.167*	*0.306*	*0.382*	*-0.097*	*0.394*	*0.394*	*-0.056*
<0			*25*			*24*			*24*			*19*

Source: Datastream.

Figure 1

BETA calculated vs. the S&P 500 at year end using MONTHLY data of the last 5 YEARS

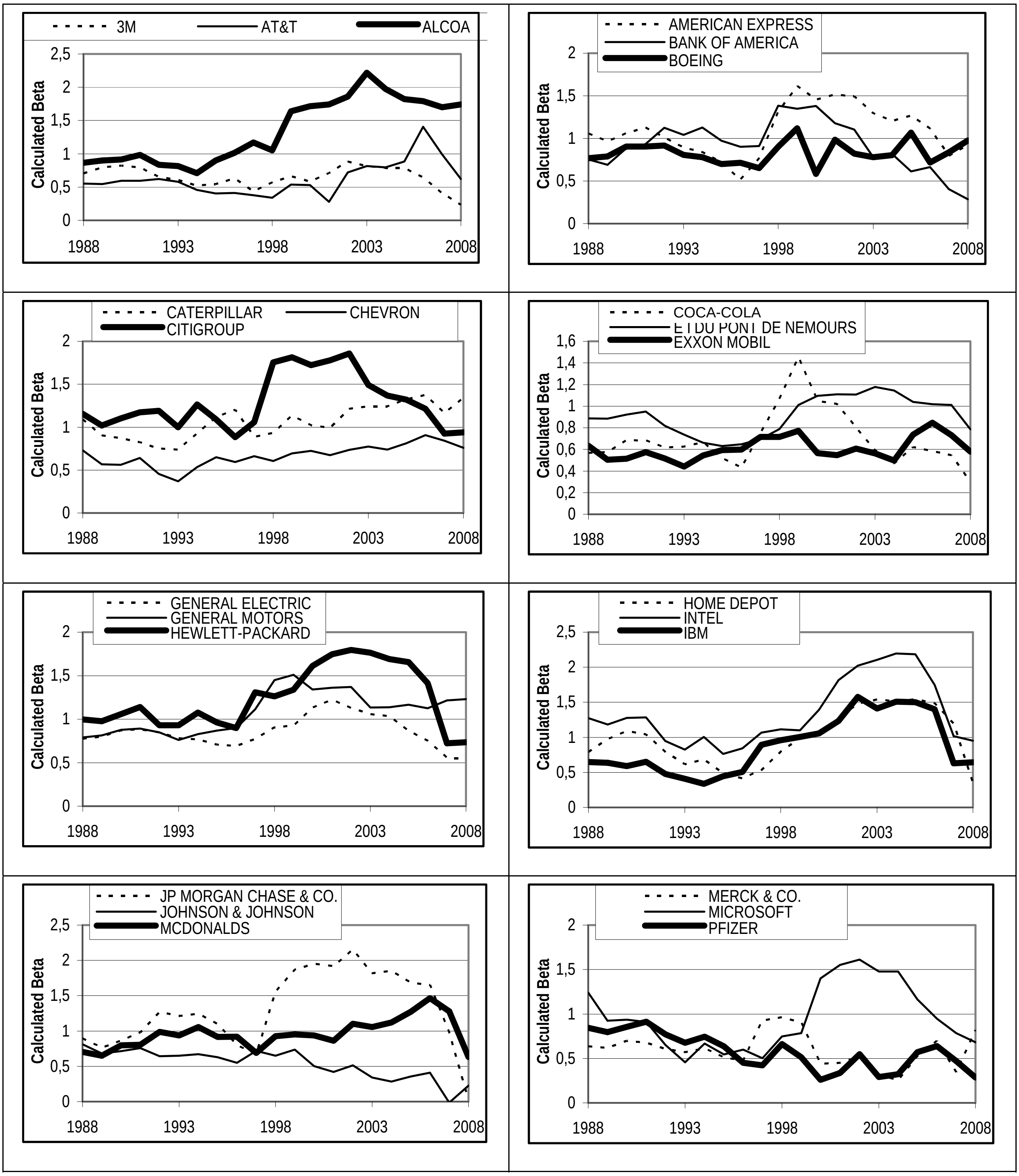


Table 4

From 1989 to the indicated year. Raw betas vs. BETA =1

Correlation (R_t, β Rm_t), Correlation (R_t, Rm_t) and its difference using betas calculated with monthly data of last 5 years. Betas calculated every year end vs. the S&P 500.

	Correlation(Rt, BetaRm) - Correlation(Rt, Rm). Yearly data from 1989 until the year…											
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	aver
3M	0.062	0.035	0.032	0.022	0.019	0.063	0.049	0.043	0.034	0.034	-0.022	**0.034**
AT&T	-0.011	0.036	0.029	0.023	0.010	-0.062	-0.070	-0.070	-0.022	-0.013	-0.062	-0.019
ALCOA	-0.090	0.021	0.030	0.016	0.027	0.072	0.028	0.020	0.002	0.008	0.016	**0.014**
AMERICAN EXPRESS	-0.170	-0.066	-0.060	-0.034	-0.051	-0.056	-0.056	-0.058	-0.061	-0.066	-0.076	-0.069
BANK OF AMERICA	-0.056	-0.131	-0.117	-0.122	-0.107	-0.108	-0.108	-0.107	-0.107	-0.102	-0.152	-0.111
BOEING	0.039	0.048	0.002	-0.025	-0.015	-0.013	-0.013	-0.010	-0.005	-0.004	-0.003	**0.000**
CATERPILLAR	0.032	0.036	0.028	0.025	0.015	0.059	0.060	0.060	0.054	0.055	0.050	**0.043**
CHEVRON	0.094	0.092	0.074	0.062	0.045	0.052	0.058	0.058	0.069	0.075	0.056	**0.067**
CITIGROUP	0.005	0.040	0.012	0.007	0.004	-0.025	-0.032	-0.035	-0.036	-0.040	-0.053	-0.014
COCA-COLA	-0.047	-0.211	-0.169	-0.127	-0.108	-0.115	-0.113	-0.113	-0.113	-0.107	-0.094	-0.120
E I DU PONT DE NEMOURS	0.036	0.038	0.036	0.026	-0.001	-0.032	-0.034	-0.043	-0.040	-0.044	-0.027	-0.008
EXXON MOBIL	-0.034	-0.053	-0.055	-0.045	-0.035	-0.034	-0.036	-0.036	-0.015	-0.009	-0.010	-0.033
GENERAL ELECTRIC	-0.021	0.003	0.001	0.001	0.005	-0.020	-0.020	-0.023	-0.025	-0.025	-0.034	-0.014
GENERAL MOTORS	0.005	0.037	0.048	0.038	0.033	0.066	0.054	0.035	0.048	0.043	0.034	**0.040**
HEWLETT-PACKARD	-0.005	0.028	0.026	0.025	-0.001	-0.018	-0.033	-0.021	-0.009	-0.006	-0.001	-0.001
HOME DEPOT	0.151	0.155	0.117	0.097	0.081	0.018	0.005	-0.006	-0.042	-0.056	-0.056	**0.042**
INTEL	-0.080	-0.082	-0.065	-0.055	-0.015	0.029	-0.012	-0.018	-0.065	-0.062	-0.050	-0.043
IBM	0.041	0.026	0.032	0.007	0.042	0.000	-0.010	-0.028	-0.026	-0.025	-0.029	**0.003**
JP MORGAN CHASE & CO.	0.012	-0.044	-0.043	-0.040	-0.038	-0.037	-0.044	-0.046	-0.048	-0.053	-0.029	-0.037
JOHNSON & JOHNSON	0.015	0.019	0.016	0.022	0.012	0.048	0.039	0.046	0.053	0.054	0.032	**0.033**
MCDONALDS	-0.088	-0.093	-0.072	-0.058	-0.045	-0.025	-0.020	-0.020	-0.011	-0.002	-0.054	-0.044
MERCK & CO.	0.006	-0.079	-0.080	-0.084	-0.063	-0.030	-0.005	-0.004	-0.012	-0.010	-0.031	-0.036
MICROSOFT	-0.070	-0.070	-0.077	-0.087	-0.057	-0.160	-0.178	-0.187	-0.194	-0.194	-0.171	-0.131
PFIZER	-0.122	-0.104	-0.067	-0.070	-0.067	-0.051	-0.021	-0.013	-0.011	-0.009	0.002	-0.049
PROCTER & GAMBLE	-0.118	-0.130	-0.083	-0.068	-0.042	-0.022	-0.017	-0.014	-0.007	-0.008	-0.028	-0.049
UNITED TECHNOLOGIES	-0.200	-0.230	-0.207	-0.148	-0.133	-0.075	-0.084	-0.087	-0.090	-0.086	-0.107	-0.132
VERIZON COMMUNICATIONS	-0.016	-0.016	-0.012	-0.011	-0.007	-0.120	-0.113	-0.114	-0.084	-0.073	-0.061	-0.057
WAL MART STORES	-0.014	0.026	0.023	0.011	0.004	-0.047	-0.052	-0.054	-0.052	-0.052	0.019	-0.017
WALT DISNEY	0.036	0.024	0.019	0.011	0.009	0.020	0.021	0.018	0.026	0.025	0.018	**0.021**
Average	**-0.021**	**-0.022**	**-0.020**	**-0.020**	**-0.016**	**-0.021**	**-0.026**	**-0.029**	**-0.027**	**-0.026**	**-0.032**	**-0.024**
Máx.	*0.151*	*0.155*	*0.117*	*0.097*	*0.081*	*0.072*	*0.060*	*0.060*	*0.069*	*0.075*	*0.056*	*0.067*
Mín.	*-0.200*	*-0.230*	*-0.207*	*-0.148*	*-0.133*	*-0.160*	*-0.178*	*-0.187*	*-0.194*	*-0.194*	*-0.171*	*-0.132*
<0	*16*	*13*	*13*	*14*	*16*	*20*	*21*	*22*	*22*	*22*	*21*	*19*

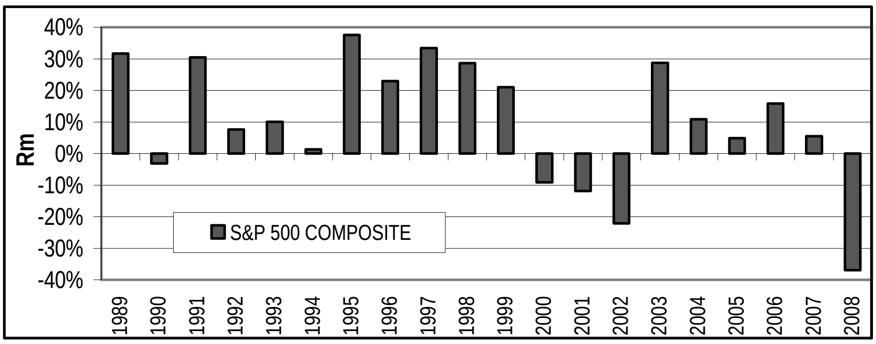
Source: Datastream.

Table 5

From the indicated year until 2008. Raw betas vs. BETA =1

Correlation (R_t, β Rm_t), Correlation (R_t, Rm_t) and its difference using betas calculated with monthly data of last 5 years. Betas calculated every year end vs. the S&P 500.

	Correlation(Rt, BetaRm) - Correlation(Rt, Rm). Yearly data from ... until the year 2008											
	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	aver
3M	-0.022	-0.030	-0.027	-0.017	-0.017	-0.017	-0.019	-0.013	0.002	-0.001	-0.087	-0.023
AT&T	-0.062	-0.063	-0.062	-0.064	-0.067	-0.068	-0.068	-0.056	-0.084	-0.056	0.027	-0.057
ALCOA	0.016	0.020	0.025	0.015	0.015	0.014	0.009	-0.012	-0.015	-0.050	-0.088	-0.005
AMERICAN EXPRESS	-0.076	-0.079	-0.080	-0.077	-0.079	-0.081	-0.083	-0.093	-0.089	-0.040	-0.070	-0.077
BANK OF AMERICA	-0.152	-0.143	-0.159	-0.174	-0.174	-0.174	-0.178	-0.246	-0.276	-0.306	-0.334	-0.211
BOEING	-0.003	0.000	-0.001	0.006	0.010	0.011	0.010	0.016	0.023	0.008	-0.052	**0.003**
CATERPILLAR	0.050	0.056	0.061	0.043	0.044	0.069	0.071	0.053	0.055	0.065	0.027	**0.054**
CHEVRON	0.056	0.052	0.051	0.034	0.035	0.043	0.043	0.032	0.036	0.028	0.015	**0.039**
CITIGROUP	-0.053	-0.058	-0.058	-0.056	-0.056	-0.056	-0.057	-0.066	-0.063	-0.014	-0.058	-0.054
COCA-COLA	-0.094	-0.085	-0.092	-0.119	-0.118	-0.118	-0.123	-0.143	-0.137	-0.099	-0.110	-0.113
E I DU PONT DE NEMOURS	-0.027	-0.034	-0.033	-0.039	-0.039	-0.039	-0.046	-0.043	-0.020	0.012	-0.038	-0.031
EXXON MOBIL	-0.010	-0.009	-0.009	-0.013	-0.014	-0.016	-0.016	-0.011	-0.010	-0.013	-0.010	-0.012
GENERAL ELECTRIC	-0.034	-0.035	-0.036	-0.037	-0.037	-0.038	-0.038	-0.045	-0.042	-0.040	-0.042	-0.039
GENERAL MOTORS	0.034	0.026	0.026	0.011	0.011	0.018	0.019	0.016	0.011	-0.001	-0.007	**0.015**
HEWLETT-PACKARD	-0.001	-0.024	-0.025	-0.012	-0.011	-0.012	-0.009	0.007	0.003	-0.014	-0.031	-0.012
HOME DEPOT	-0.056	-0.054	-0.063	-0.120	-0.130	-0.132	-0.134	-0.177	-0.203	-0.164	-0.052	-0.117
INTEL	-0.050	-0.052	-0.053	-0.055	-0.057	-0.054	-0.055	-0.051	0.029	-0.022	0.006	-0.038
IBM	-0.029	-0.058	-0.062	-0.104	-0.123	-0.124	-0.125	-0.149	-0.091	-0.070	-0.006	-0.086
JP MORGAN CHASE & CO.	-0.029	-0.052	-0.046	0.001	0.011	0.011	0.013	0.024	0.048	0.040	0.071	**0.009**
JOHNSON & JOHNSON	0.032	0.022	0.036	-0.002	-0.004	-0.011	0.002	-0.087	-0.091	-0.131	-0.296	-0.048
MCDONALDS	-0.054	-0.046	-0.043	-0.045	-0.044	-0.044	-0.044	-0.054	-0.062	-0.085	-0.052	-0.052
MERCK & CO.	-0.031	-0.032	-0.029	-0.058	-0.061	-0.067	-0.065	-0.085	-0.083	-0.071	-0.150	-0.067
MICROSOFT	-0.171	-0.179	-0.193	-0.228	-0.228	-0.233	-0.241	-0.264	-0.250	-0.255	-0.169	-0.219
PFIZER	0.002	0.027	0.032	-0.043	-0.036	-0.032	-0.031	-0.069	-0.077	-0.077	-0.036	-0.031
PROCTER & GAMBLE	-0.028	0.020	0.024	0.018	0.020	0.020	0.021	0.028	0.020	-0.056	-0.019	**0.006**
UNITED TECHNOLOGIES	-0.107	-0.113	-0.112	-0.098	-0.087	-0.088	-0.085	-0.057	-0.024	-0.101	-0.078	-0.087
VERIZON COMMUNICATIONS	-0.061	-0.026	-0.026	-0.051	-0.048	-0.047	-0.053	-0.049	-0.071	-0.029	-0.020	-0.044
WAL MART STORES	0.019	0.019	0.021	-0.018	-0.016	-0.015	-0.014	-0.034	-0.055	-0.002	0.178	**0.008**
WALT DISNEY	0.018	0.022	0.022	0.024	0.032	0.031	0.033	0.042	0.043	0.058	0.021	**0.031**
Average	**-0.032**	**-0.031**	**-0.031**	**-0.044**	**-0.044**	**-0.043**	**-0.044**	**-0.055**	**-0.051**	**-0.051**	**-0.050**	**-0.043**
Máx.	*0.056*	*0.056*	*0.061*	*0.043*	*0.044*	*0.069*	*0.071*	*0.053*	*0.055*	*0.065*	*0.178*	*0.054*
Mín.	*-0.171*	*-0.179*	*-0.193*	*-0.228*	*-0.228*	*-0.233*	*-0.241*	*-0.264*	*-0.276*	*-0.306*	*-0.334*	*-0.219*
<0	*21*	*20*	*20*	*21*	*21*	*21*	*20*	*21*	*19*	*23*	*22*	*21*



Source: Datastream.

Figure 2

BETA calculated vs. the S&P 500 at year end using MONTHLY data of the last 2 YEARS

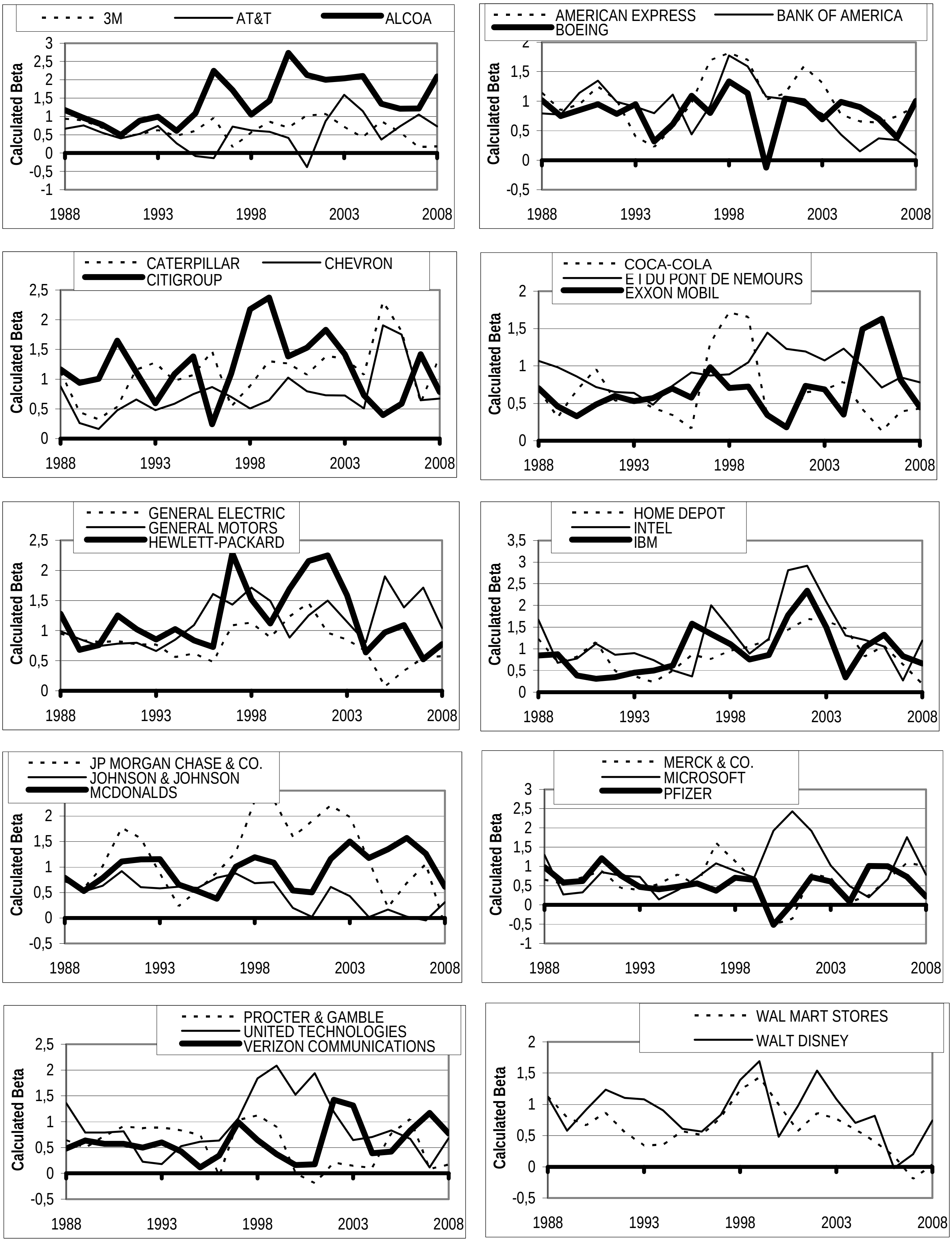


Table 6

From 1989 to the indicated year. Raw betas vs. BETA = 1

Correlation (R_t, β Rm_t), Correlation (R_t, Rm_t) and its difference using betas calculated with monthly data of last 2 years. Betas calculated every year end vs. the S&P 500.

	Correlation(Rt, BetaRm) - Correlation(Rt, Rm). Yearly data from 1989 until the year…											
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	aver
3M	0.114	0.076	0.089	0.059	0.049	0.097	0.086	0.079	0.067	0.067	-0.082	0.064
AT&T	-0.098	-0.167	-0.134	-0.133	-0.283	-0.356	-0.393	-0.393	-0.395	-0.391	-0.288	-0.276
ALCOA	-0.261	-0.155	-0.151	-0.134	-0.100	-0.054	-0.075	-0.081	-0.082	-0.078	-0.090	-0.115
AMERICAN EXPRESS	-0.296	-0.143	-0.116	-0.110	-0.086	-0.085	-0.085	-0.084	-0.084	-0.080	-0.094	-0.115
BANK OF AMERICA	0.072	-0.142	-0.131	-0.109	-0.091	-0.088	-0.088	-0.085	-0.088	-0.080	-0.142	-0.088
BOEING	-0.335	-0.291	-0.223	-0.302	-0.235	-0.221	-0.223	-0.215	-0.214	-0.209	-0.237	-0.246
CATERPILLAR	0.243	0.244	0.201	0.178	0.138	0.180	0.182	0.182	0.146	0.149	0.065	**0.173**
CHEVRON	0.305	0.316	0.255	0.215	0.146	0.140	0.143	0.142	0.169	0.189	0.142	**0.197**
CITIGROUP	-0.208	-0.149	-0.145	-0.124	-0.096	-0.118	-0.124	-0.122	-0.116	-0.104	-0.077	-0.126
COCA-COLA	-0.330	-0.564	-0.458	-0.441	-0.410	-0.396	-0.374	-0.368	-0.372	-0.374	-0.334	-0.402
E I DU PONT DE NEMOURS	0.004	0.009	0.006	-0.001	-0.015	-0.042	-0.044	-0.054	-0.052	-0.052	-0.049	-0.026
EXXON MOBIL	-0.115	-0.122	-0.097	-0.096	-0.099	-0.099	-0.100	-0.102	-0.013	0.002	-0.005	-0.077
GENERAL ELECTRIC	-0.103	-0.046	-0.034	-0.025	-0.013	-0.020	-0.020	-0.022	-0.013	-0.013	-0.033	-0.031
GENERAL MOTORS	0.007	0.034	0.022	0.025	0.020	0.045	0.044	0.044	0.084	0.081	0.073	**0.044**
HEWLETT-PACKARD	-0.338	-0.267	-0.226	-0.179	-0.159	-0.164	-0.169	-0.165	-0.169	-0.166	-0.157	-0.196
HOME DEPOT	0.256	0.260	0.192	0.164	0.128	0.055	0.043	0.032	0.034	0.023	0.047	**0.112**
INTEL	-0.039	-0.053	-0.090	-0.080	-0.019	0.030	-0.003	-0.006	-0.003	-0.001	-0.037	-0.027
IBM	0.253	0.248	0.175	0.190	0.169	0.106	0.102	0.098	0.098	0.099	0.078	**0.147**
JP MORGAN CHASE & CO.	-0.082	-0.252	-0.201	-0.170	-0.136	-0.121	-0.130	-0.130	-0.135	-0.135	-0.101	-0.145
JOHNSON & JOHNSON	-0.071	-0.065	-0.053	-0.032	-0.060	-0.033	-0.044	-0.022	-0.014	-0.006	-0.026	-0.039
MCDONALDS	0.241	0.133	0.099	0.076	0.050	0.066	0.080	0.079	0.087	0.095	-0.021	**0.090**
MERCK & CO.	-0.173	-0.227	-0.156	-0.238	-0.222	-0.203	-0.168	-0.164	-0.202	-0.209	-0.135	-0.191
MICROSOFT	-0.090	-0.087	-0.119	-0.139	-0.089	-0.201	-0.210	-0.214	-0.203	-0.205	-0.153	-0.155
PFIZER	-0.309	-0.310	-0.257	-0.300	-0.289	-0.294	-0.263	-0.236	-0.246	-0.240	-0.202	-0.268
PROCTER & GAMBLE	-0.447	-0.470	-0.326	-0.299	-0.243	-0.223	-0.215	-0.204	-0.205	-0.204	-0.215	-0.277
UNITED TECHNOLOGIES	-0.119	-0.195	-0.181	-0.143	-0.127	-0.099	-0.099	-0.100	-0.100	-0.095	-0.171	-0.130
VERIZON COMMUNICATIONS	-0.177	-0.183	-0.164	-0.138	-0.125	-0.356	-0.343	-0.306	-0.320	-0.315	-0.246	-0.243
WAL MART STORES	0.067	0.110	0.086	0.079	0.074	0.055	0.052	0.050	0.060	0.060	0.155	**0.077**
WALT DISNEY	0.067	-0.024	-0.022	-0.048	-0.039	-0.014	-0.013	-0.010	-0.019	-0.014	-0.033	-0.015
Average	**-0.068**	**-0.086**	**-0.075**	**-0.078**	**-0.075**	**-0.083**	**-0.084**	**-0.082**	**-0.079**	**-0.076**	**-0.082**	**-0.079**
Máx.	*0.305*	*0.316*	*0.255*	*0.215*	*0.169*	*0.180*	*0.182*	*0.182*	*0.169*	*0.189*	*0.155*	*0.197*
Mín.	*-0.447*	*-0.564*	*-0.458*	*-0.441*	*-0.410*	*-0.396*	*-0.393*	*-0.393*	*-0.395*	*-0.391*	*-0.334*	*-0.402*
<0	*18*	*20*	*20*	*21*	*21*	*20*	*21*	*21*	*21*	*20*	*23*	*21*

Source: Datastream.

Table 7

From the indicated year until 2008. Raw betas vs. BETA =1

Correlation (R_t, β Rm_t), Correlation (R_t, Rm_t) and its difference using betas calculated with monthly data of last 2 years. Betas calculated every year end vs. the S&P 500

	Correlation(Rt, BetaRm) - Correlation(Rt, Rm). Yearly data from ... until the year 2008											
	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	aver
3M	-0.082	-0.108	-0.109	-0.112	-0.112	-0.111	-0.113	-0.100	-0.090	-0.048	-0.211	-0.109
AT&T	-0.288	-0.345	-0.350	-0.363	-0.365	-0.366	-0.367	-0.340	-0.407	-0.243	-0.266	-0.336
ALCOA	-0.090	-0.091	-0.088	-0.104	-0.102	-0.106	-0.108	-0.130	-0.135	-0.109	-0.112	-0.107
AMERICAN EXPRESS	-0.094	-0.098	-0.103	-0.119	-0.121	-0.121	-0.121	-0.090	-0.068	-0.050	-0.021	-0.091
BANK OF AMERICA	-0.142	-0.146	-0.162	-0.252	-0.265	-0.264	-0.268	-0.305	-0.373	-0.355	-0.387	-0.265
BOEING	-0.237	-0.274	-0.276	-0.284	-0.290	-0.291	-0.292	-0.195	-0.174	-0.169	-0.237	-0.247
CATERPILLAR	0.065	0.073	0.079	0.009	0.015	0.027	0.032	0.010	0.012	0.031	-0.068	**0.026**
CHEVRON	0.142	0.148	0.147	0.066	0.062	0.071	0.071	0.059	0.066	0.074	0.049	**0.087**
CITIGROUP	-0.077	-0.082	-0.079	-0.076	-0.078	-0.084	-0.082	-0.079	-0.087	0.054	0.016	-0.059
COCA-COLA	-0.334	-0.388	-0.396	-0.495	-0.494	-0.495	-0.497	-0.497	-0.476	-0.372	-0.398	-0.440
E I DU PONT DE NEMOURS	-0.049	-0.070	-0.071	-0.076	-0.076	-0.076	-0.082	-0.063	-0.045	-0.046	-0.075	-0.066
EXXON MOBIL	-0.005	-0.006	-0.006	-0.004	-0.011	-0.016	-0.023	-0.007	-0.004	-0.002	0.008	-0.007
GENERAL ELECTRIC	-0.033	-0.036	-0.035	-0.036	-0.037	-0.039	-0.038	-0.043	-0.040	-0.017	-0.016	-0.034
GENERAL MOTORS	0.073	0.066	0.066	0.032	0.035	0.061	0.062	0.064	0.059	0.068	0.070	**0.060**
HEWLETT-PACKARD	-0.157	-0.171	-0.177	-0.139	-0.138	-0.139	-0.139	-0.120	-0.124	-0.143	-0.106	-0.141
HOME DEPOT	0.047	0.048	0.043	0.081	0.074	0.067	0.067	-0.008	-0.038	-0.028	0.071	**0.039**
INTEL	-0.037	-0.033	-0.034	-0.053	-0.051	-0.046	-0.047	-0.019	0.128	0.060	0.073	-0.005
IBM	0.078	0.048	0.043	-0.032	-0.063	-0.063	-0.062	-0.086	-0.014	-0.015	0.024	-0.013
JP MORGAN CHASE & CO.	-0.101	-0.130	-0.124	-0.121	-0.179	-0.175	-0.174	-0.060	0.008	-0.002	0.001	-0.096
JOHNSON & JOHNSON	-0.026	-0.041	-0.026	-0.037	-0.042	-0.065	-0.044	-0.074	-0.074	-0.171	-0.437	-0.094
MCDONALDS	-0.021	-0.017	-0.014	-0.016	-0.018	-0.018	-0.018	0.011	-0.022	-0.107	-0.107	-0.031
MERCK & CO.	-0.135	-0.135	-0.137	-0.128	-0.134	-0.155	-0.154	-0.088	-0.085	-0.042	-0.117	-0.119
MICROSOFT	-0.153	-0.160	-0.196	-0.146	-0.143	-0.138	-0.156	-0.169	-0.137	-0.137	-0.133	-0.152
PFIZER	-0.202	-0.182	-0.182	-0.234	-0.223	-0.222	-0.222	-0.202	-0.197	-0.210	-0.070	-0.195
PROCTER & GAMBLE	-0.215	-0.265	-0.257	-0.259	-0.259	-0.260	-0.260	-0.321	-0.362	0.019	0.114	-0.211
UNITED TECHNOLOGIES	-0.171	-0.179	-0.180	-0.193	-0.198	-0.189	-0.191	-0.164	-0.148	-0.212	-0.248	-0.188
VERIZON COMMUNICATIONS	-0.246	-0.229	-0.232	-0.266	-0.266	-0.264	-0.269	-0.240	-0.276	-0.180	-0.199	-0.242
WAL MART STORES	0.155	0.188	0.201	0.233	0.234	0.230	0.230	0.178	0.161	0.234	0.418	**0.224**
WALT DISNEY	-0.033	-0.068	-0.072	-0.075	-0.087	-0.087	-0.085	-0.094	-0.090	-0.036	-0.087	-0.074
Average	**-0.082**	**-0.093**	**-0.094**	**-0.110**	**-0.115**	**-0.115**	**-0.115**	**-0.109**	**-0.104**	**-0.074**	**-0.084**	**-0.100**
Máx.	*0.155*	*0.188*	*0.201*	*0.233*	*0.234*	*0.230*	*0.230*	*0.178*	*0.161*	*0.234*	*0.418*	*0.224*
Mín.	*-0.334*	*-0.388*	*-0.396*	*-0.495*	*-0.494*	*-0.495*	*-0.497*	*-0.497*	*-0.476*	*-0.372*	*-0.437*	*-0.440*
<0	*23*	*23*	*23*	*24*	*24*	*24*	*24*	*24*	*23*	*22*	*19*	*24*

Source: Datastream.

Figure 3

BETA calculated vs. the S&P 500 at year end using WEEKLY data of the last 5 YEARS

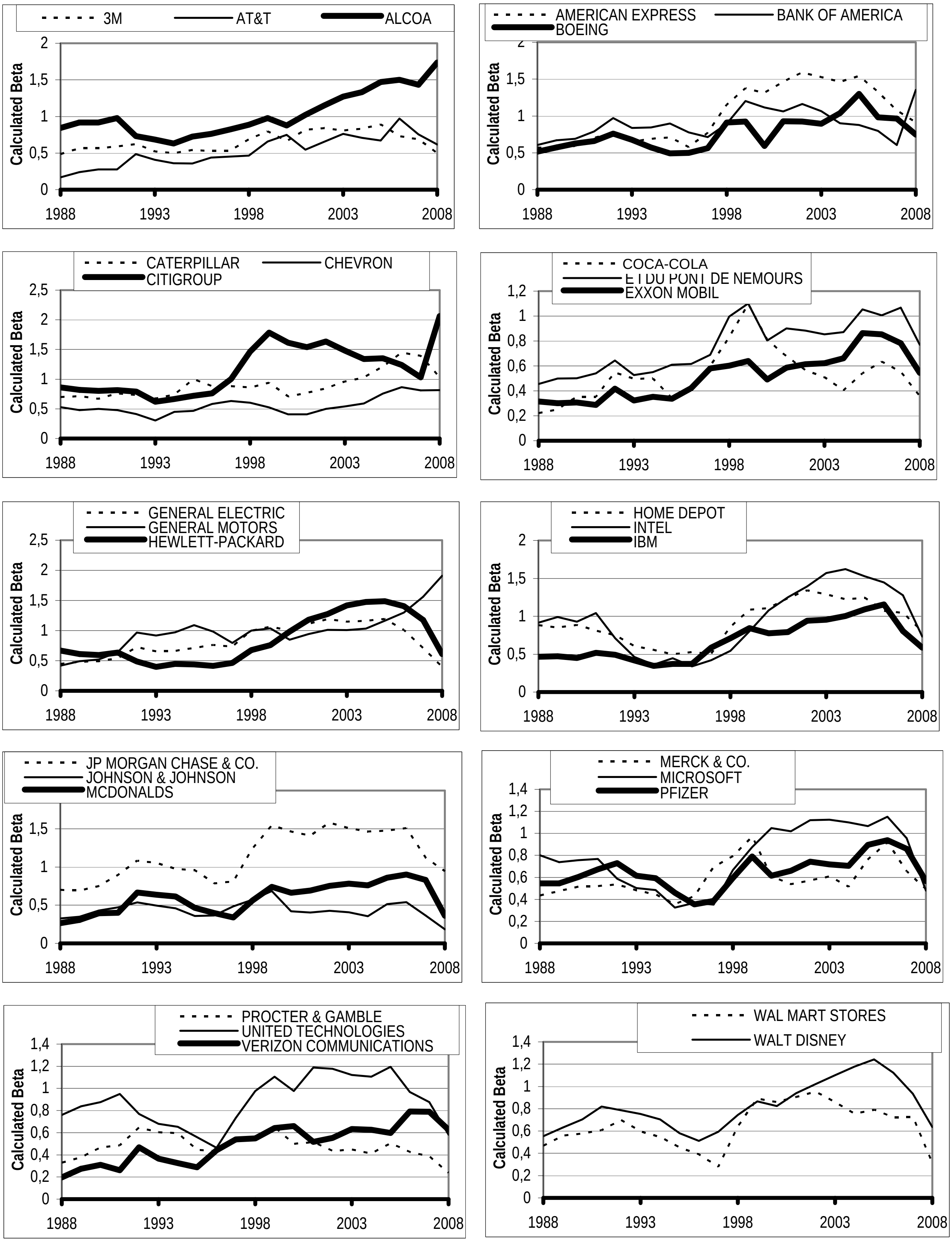


Table 8

From 1989 to the indicated year. Raw betas vs. BETA =1

Correlation (R_t, β Rm_t), Correlation (R_t, Rm_t) and its difference using betas calculated with weekly data of last 5 years. Betas calculated every year end vs. the S&P 500.

	Correlation(Rt, BetaRm) - Correlation(Rt, Rm). Yearly data from 1989 until the year…											
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	aver
3M	-0.032	0.041	0.007	0.011	0.009	0.063	0.041	0.028	0.007	0.007	0.010	**0.018**
AT&T	-0.139	-0.188	-0.160	-0.124	-0.094	-0.169	-0.183	-0.186	-0.136	-0.126	-0.110	-0.147
ALCOA	-0.002	0.054	0.048	0.041	0.040	0.067	0.047	0.042	0.020	0.025	0.032	**0.038**
AMERICAN EXPRESS	-0.019	0.091	0.051	0.052	-0.005	-0.034	-0.039	-0.044	-0.055	-0.066	-0.048	-0.011
BANK OF AMERICA	-0.052	-0.076	-0.080	-0.091	-0.088	-0.107	-0.106	-0.107	-0.107	-0.106	-0.112	-0.094
BOEING	-0.020	0.009	-0.041	-0.038	-0.021	-0.012	-0.007	0.005	0.016	0.011	0.030	-0.006
CATERPILLAR	0.071	0.065	0.059	0.052	0.039	0.042	0.043	0.043	0.032	0.034	0.069	**0.050**
CHEVRON	-0.035	-0.051	-0.043	-0.035	-0.043	-0.044	-0.044	-0.044	-0.024	-0.015	-0.009	-0.035
CITIGROUP	-0.145	-0.095	-0.111	-0.094	-0.071	-0.108	-0.125	-0.129	-0.138	-0.142	-0.114	-0.116
COC- COLA	-0.361	-0.509	-0.392	-0.301	-0.248	-0.250	-0.250	-0.249	-0.248	-0.237	-0.190	-0.294
E I DU PONT DE NEMOURS	-0.140	-0.122	-0.053	-0.044	-0.056	-0.081	-0.083	-0.089	-0.086	-0.092	-0.051	-0.082
EXXON MOBIL	-0.066	-0.127	-0.119	-0.090	-0.067	-0.082	-0.059	-0.058	0.008	0.022	-0.001	-0.058
GENERAL ELECTRIC	-0.034	0.020	0.011	0.009	0.010	-0.040	-0.042	-0.048	-0.069	-0.071	-0.056	-0.028
GENERAL MOTORS	0.123	0.135	0.102	0.092	0.075	0.087	0.074	0.057	0.080	0.073	0.078	**0.089**
HEWLETT-PACKARD	-0.061	-0.005	0.003	0.009	-0.035	-0.076	-0.111	-0.087	-0.061	-0.055	-0.054	-0.049
HOME DEPOT	0.140	0.145	0.116	0.093	0.077	0.024	0.014	0.005	-0.020	-0.029	-0.029	**0.049**
INTEL	-0.148	-0.145	-0.118	-0.098	-0.043	0.010	-0.052	-0.061	-0.120	-0.115	-0.091	-0.089
IBM	0.011	-0.002	0.023	-0.003	0.025	0.000	-0.008	-0.024	-0.023	-0.021	-0.016	-0.003
JP MORGAN CHASE & CO.	0.023	-0.019	-0.026	-0.025	-0.024	-0.020	-0.027	-0.028	-0.031	-0.036	-0.027	-0.022
JOHNSON & JOHNSON	-0.020	-0.063	-0.072	-0.060	-0.049	-0.046	-0.046	-0.043	-0.048	-0.049	-0.037	-0.048
MCDONALDS	-0.079	-0.110	-0.080	-0.062	-0.041	-0.012	0.001	0.001	0.011	0.026	-0.037	-0.034
MERCK & CO.	-0.017	-0.129	-0.153	-0.123	-0.101	-0.108	-0.113	-0.113	-0.096	-0.084	-0.059	-0.100
MICROSOFT	-0.066	-0.063	-0.031	-0.046	-0.030	-0.132	-0.154	-0.163	-0.182	-0.185	-0.136	-0.108
PFIZER	-0.087	-0.112	-0.117	-0.097	-0.076	-0.105	-0.116	-0.118	-0.129	-0.134	-0.124	-0.111
PROCTER & GAMBLE	-0.204	-0.211	-0.116	-0.099	-0.083	-0.075	-0.074	-0.073	-0.074	-0.073	-0.060	-0.104
UNITED TECHNOLOGIES	-0.020	-0.040	-0.061	-0.041	-0.049	-0.008	-0.017	-0.019	-0.032	-0.028	-0.022	-0.031
VERIZON COMMUNICATIONS	-0.123	-0.144	-0.105	-0.096	-0.078	-0.127	-0.117	-0.127	-0.104	-0.091	-0.095	-0.110
WAL MART STORES	-0.202	-0.163	-0.115	-0.108	-0.095	-0.168	-0.181	-0.186	-0.198	-0.199	-0.166	-0.162
WALT DISNEY	-0.065	-0.087	-0.070	-0.046	-0.037	-0.014	-0.009	-0.020	0.012	0.007	-0.001	-0.030
Average	**-0.061**	**-0.066**	**-0.057**	**-0.047**	**-0.040**	**-0.053**	**-0.060**	**-0.063**	**-0.062**	**-0.060**	**-0.049**	**-0.056**
Máx.	*0.140*	*0.145*	*0.116*	*0.093*	*0.077*	*0.087*	*0.074*	*0.057*	*0.080*	*0.073*	*0.078*	*0.089*
Mín.	*-0.361*	*-0.509*	*-0.392*	*-0.301*	*-0.248*	*-0.250*	*-0.250*	*-0.249*	*-0.248*	*-0.237*	*-0.190*	*-0.294*
<0	*24*	*21*	*20*	*21*	*22*	*22*	*23*	*22*	*21*	*21*	*24*	*24*

Source: Datastream.

Table 9

From the indicated year until 2008. Raw betas vs. BETA =1

Correlation (R_t, β Rm_t), Correlation (R_t, Rm_t) and its difference using betas calculated with weekly data of last 5 years. Betas calculated every year end vs. the S&P 500.

	Correlation(Rt, BetaRm) - Correlation(Rt, Rm). Yearly data from … until the year 2008											
	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	aver
3M	0.010	0.024	0.023	0.021	0.021	0.021	0.022	0.036	0.055	0.028	-0.039	**0.020**
AT&T	-0.110	-0.036	-0.032	-0.036	-0.035	-0.035	-0.035	-0.010	-0.038	-0.019	0.029	-0.032
ALCOA	0.032	0.034	0.038	0.036	0.036	0.035	0.032	0.013	0.010	-0.022	-0.061	**0.017**
AMERICAN EXPRESS	-0.048	-0.047	-0.038	-0.072	-0.071	-0.071	-0.072	-0.079	-0.072	-0.024	-0.055	-0.059
BANK OF AMERICA	-0.112	-0.094	-0.101	-0.086	-0.085	-0.084	-0.085	-0.098	-0.112	-0.117	-0.139	-0.101
BOEING	0.030	0.050	0.047	0.041	0.043	0.043	0.043	0.092	0.118	0.075	-0.022	**0.051**
CATERPILLAR	0.069	0.048	0.059	0.031	0.031	0.041	0.039	0.010	0.010	0.008	-0.023	**0.029**
CHEVRON	-0.009	0.001	-0.001	-0.019	-0.019	-0.014	-0.014	-0.028	-0.022	-0.029	-0.036	-0.017
CITIGROUP	-0.114	-0.123	-0.123	-0.119	-0.119	-0.119	-0.119	-0.077	-0.065	-0.010	-0.050	-0.094
COCA-COLA	-0.190	-0.129	-0.139	-0.106	-0.106	-0.105	-0.111	-0.120	-0.088	-0.059	-0.067	-0.111
E I DU PONT DE NEMOURS	-0.051	-0.021	-0.018	-0.002	-0.002	-0.002	-0.008	0.003	0.031	0.072	0.031	**0.003**
EXXON MOBIL	-0.001	-0.011	-0.012	-0.015	-0.018	-0.019	-0.016	0.009	0.020	0.023	0.017	-0.002
GENERAL ELECTRIC	-0.056	-0.041	-0.041	-0.039	-0.038	-0.036	-0.036	-0.042	-0.037	-0.035	-0.031	-0.039
GENERAL MOTORS	0.078	0.065	0.067	0.031	0.033	0.033	0.035	0.035	0.037	0.033	0.026	**0.043**
HEWLETT-PACKARD	-0.054	-0.075	-0.065	-0.045	-0.046	-0.046	-0.052	0.003	0.000	-0.018	-0.073	-0.043
HOME DEPOT	-0.029	-0.031	-0.040	-0.064	-0.071	-0.069	-0.072	-0.119	-0.144	-0.122	-0.008	-0.070
INTEL	-0.091	-0.094	-0.095	-0.094	-0.112	-0.115	-0.113	-0.089	-0.025	-0.088	-0.032	-0.086
IBM	-0.016	-0.045	-0.051	-0.088	-0.096	-0.096	-0.101	-0.126	-0.086	-0.070	0.004	-0.070
JP MORGAN CHASE & CO.	-0.027	-0.052	-0.047	-0.004	0.001	0.001	0.002	0.019	0.040	0.031	0.044	**0.001**
JOHNSON & JOHNSON	-0.037	-0.023	-0.023	-0.025	-0.026	-0.019	-0.018	-0.049	-0.048	-0.022	-0.042	-0.030
MCDONALDS	-0.037	-0.014	-0.005	-0.004	-0.003	-0.003	-0.001	-0.001	-0.016	-0.072	-0.011	-0.015
MERCK & CO.	-0.059	-0.059	-0.062	-0.060	-0.060	-0.061	-0.062	-0.028	-0.018	0.003	-0.001	-0.042
MICROSOFT	-0.136	-0.143	-0.159	-0.195	-0.193	-0.193	-0.203	-0.225	-0.199	-0.193	-0.075	-0.174
PFIZER	-0.124	-0.132	-0.136	-0.168	-0.166	-0.161	-0.163	-0.185	-0.186	-0.113	0.022	-0.137
PROCTER & GAMBLE	-0.060	-0.006	-0.007	-0.012	-0.012	-0.008	-0.008	-0.012	-0.010	0.010	0.019	-0.010
UNITED TECHNOLOGIES	-0.022	-0.023	-0.021	-0.018	-0.010	-0.011	-0.010	0.007	0.028	-0.038	-0.014	-0.012
VERIZON COMMUNICATIONS	-0.095	-0.016	-0.016	-0.052	-0.052	-0.055	-0.050	-0.015	-0.038	-0.001	0.004	-0.035
WAL MART STORES	-0.166	-0.167	-0.175	-0.196	-0.195	-0.191	-0.189	-0.216	-0.237	-0.211	-0.034	-0.180
WALT DISNEY	-0.001	0.042	0.044	0.041	0.038	0.039	0.038	0.040	0.043	0.101	0.043	**0.043**
Average	**-0.049**	**-0.038**	**-0.039**	**-0.045**	**-0.046**	**-0.045**	**-0.046**	**-0.043**	**-0.036**	**-0.030**	**-0.020**	**-0.040**
Máx.	*0.078*	*0.065*	*0.067*	*0.041*	*0.043*	*0.043*	*0.043*	*0.092*	*0.118*	*0.101*	*0.044*	*0.051*
Mín.	*-0.190*	*-0.167*	*-0.175*	*-0.196*	*-0.195*	*-0.193*	*-0.203*	*-0.225*	*-0.237*	*-0.211*	*-0.139*	*-0.180*
<0	*24*	*22*	*23*	*23*	*22*	*22*	*22*	*18*	*18*	*19*	*19*	*21*

Source: Datastream.

Figure 4

BETA calculated vs. the S&P 500 at year end using DAILY data of the last 5 YEARS

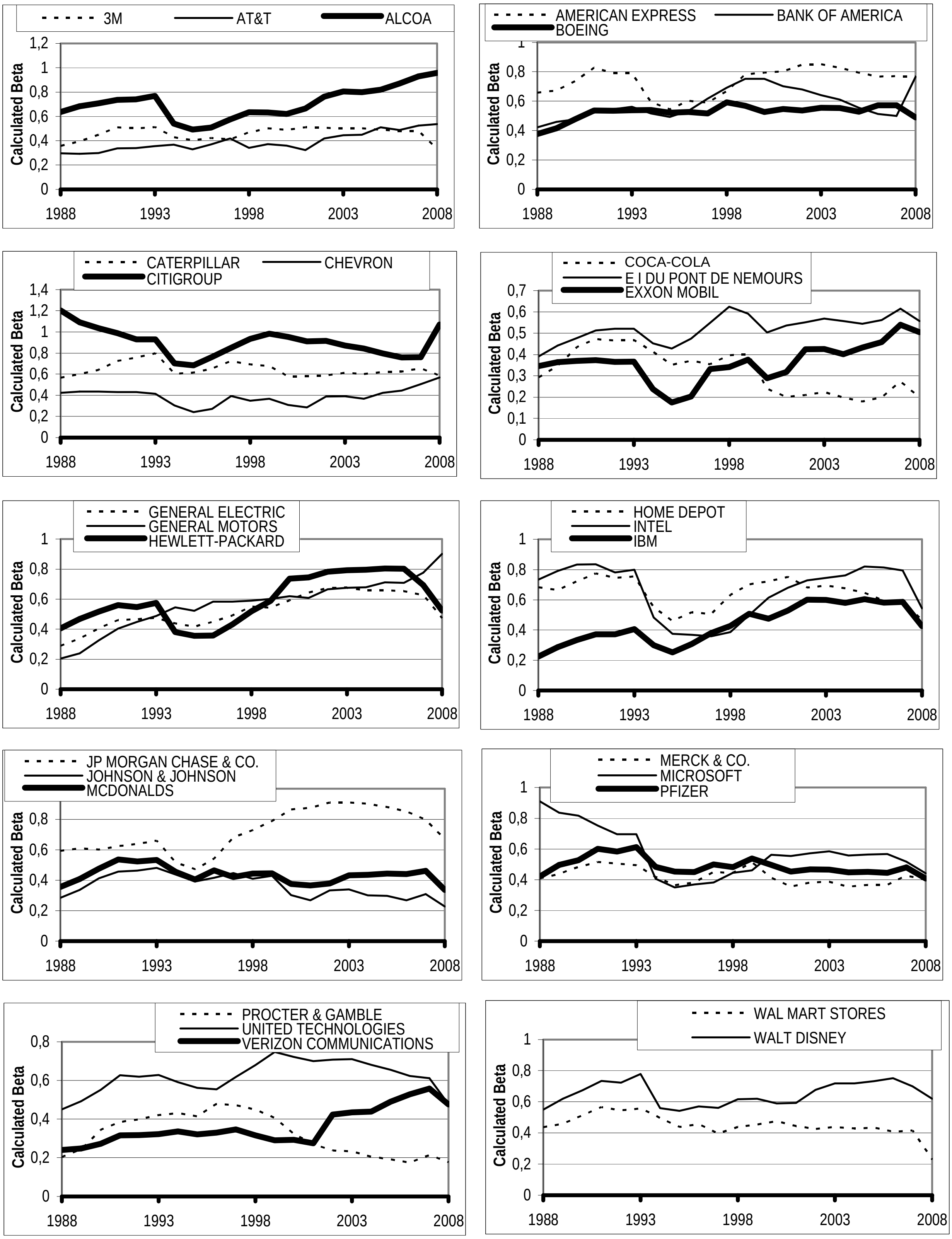


Table 10

From 1989 to the indicated year. Raw betas vs. BETA =1

Correlation (R_t, β Rm_t), Correlation (R_t, Rm_t) and its difference using betas calculated with daily data of last 5 years. Betas calculated every year end vs. the S&P 500.

	Correlation(Rt, BetaRm) - Correlation(Rt, Rm). Yearly data from 1989 until the year…											
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	aver
3M	-0.042	-0.010	-0.021	-0.011	-0.009	0.015	0.007	0.002	-0.003	-0.003	0.004	-0.006
AT&T	0.003	0.006	0.005	0.004	0.002	-0.021	-0.023	-0.024	0.004	0.006	-0.016	-0.005
ALCOA	0.009	0.035	0.031	0.025	0.024	0.045	0.034	0.032	0.023	0.026	0.031	**0.029**
AMERICAN EXPRESS	-0.042	-0.028	-0.026	-0.012	-0.022	-0.023	-0.023	-0.024	-0.025	-0.027	-0.014	-0.024
BANK OF AMERICA	-0.109	-0.161	-0.142	-0.145	-0.131	-0.138	-0.137	-0.138	-0.138	-0.134	-0.115	-0.135
BOEING	-0.043	-0.032	-0.035	-0.025	-0.019	-0.017	-0.016	-0.014	-0.013	-0.014	-0.002	-0.021
CATERPILLAR	0.034	0.029	0.029	0.025	0.017	-0.007	-0.008	-0.008	-0.007	-0.008	0.000	**0.009**
CHEVRON	-0.024	-0.022	-0.019	-0.014	-0.027	-0.019	-0.017	-0.017	-0.009	-0.007	-0.002	-0.016
CITIGROUP	-0.116	-0.107	-0.088	-0.074	-0.059	-0.058	-0.057	-0.056	-0.055	-0.048	-0.043	-0.069
COCA-COLA	-0.037	-0.043	-0.036	-0.041	-0.029	-0.010	0.011	0.014	0.006	-0.001	0.000	-0.015
E I DU PONT DE NEMOURS	-0.128	-0.114	-0.064	-0.054	-0.051	-0.059	-0.060	-0.060	-0.058	-0.058	-0.033	-0.067
EXXON MOBIL	-0.206	-0.220	-0.188	-0.144	-0.108	-0.120	-0.100	-0.098	-0.060	-0.052	-0.053	-0.123
GENERAL ELECTRIC	-0.042	-0.003	-0.004	-0.002	0.003	-0.032	-0.033	-0.037	-0.051	-0.053	-0.037	-0.026
GENERAL MOTORS	0.089	0.101	0.074	0.064	0.053	0.079	0.059	0.037	0.066	0.059	0.061	**0.067**
HEWLETT-PACKARD	0.084	0.116	0.093	0.077	0.034	0.007	-0.013	0.002	0.018	0.023	0.009	**0.041**
HOME DEPOT	0.091	0.093	0.075	0.061	0.051	0.045	0.043	0.039	0.036	0.033	0.033	**0.055**
INTEL	-0.154	-0.144	-0.130	-0.112	-0.076	-0.044	-0.058	-0.059	-0.083	-0.080	-0.065	-0.091
IBM	0.067	0.059	0.064	0.035	0.055	0.031	0.024	0.011	0.013	0.014	0.010	**0.035**
JP MORGAN CHASE & CO.	-0.015	-0.036	-0.033	-0.030	-0.028	-0.021	-0.026	-0.027	-0.029	-0.032	-0.032	-0.028
JOHNSON & JOHNSON	-0.031	-0.031	-0.028	-0.018	-0.020	0.008	0.005	0.011	0.015	0.018	0.019	-0.005
MCDONALDS	-0.027	-0.027	-0.020	-0.017	-0.016	-0.026	-0.027	-0.027	-0.027	-0.028	-0.038	-0.025
MERCK & CO.	0.025	0.017	-0.004	-0.005	0.002	0.015	0.019	0.019	0.014	0.012	0.010	**0.011**
MICROSOFT	-0.043	-0.047	-0.082	-0.060	-0.053	-0.050	-0.051	-0.051	-0.051	-0.051	-0.043	-0.053
PFIZER	0.031	0.028	0.010	0.009	0.007	0.008	0.010	0.010	0.011	0.011	0.008	**0.013**
PROCTER & GAMBLE	-0.183	-0.189	-0.129	-0.108	-0.076	-0.057	-0.054	-0.050	-0.044	-0.045	-0.044	-0.089
UNITED TECHNOLOGIES	0.024	0.016	-0.009	-0.001	-0.005	0.013	0.009	0.008	0.005	0.007	0.005	**0.006**
VERIZON COMMUNICATIONS	-0.039	-0.039	-0.031	-0.026	-0.019	-0.071	-0.066	-0.065	-0.043	-0.038	-0.065	-0.046
WAL MART STORES	-0.053	-0.059	-0.046	-0.041	-0.033	-0.025	-0.023	-0.022	-0.020	-0.019	-0.007	-0.032
WALT DISNEY	-0.022	-0.027	-0.023	-0.015	-0.012	-0.003	-0.001	-0.003	0.008	0.007	0.000	-0.008
Average	**-0.031**	**-0.029**	**-0.027**	**-0.023**	**-0.019**	**-0.018**	**-0.020**	**-0.020**	**-0.017**	**-0.017**	**-0.014**	**-0.021**
Máx.	*0.091*	*0.116*	*0.093*	*0.077*	*0.055*	*0.079*	*0.059*	*0.039*	*0.066*	*0.059*	*0.061*	*0.067*
Mín.	*-0.206*	*-0.220*	*-0.188*	*-0.145*	*-0.131*	*-0.138*	*-0.137*	*-0.138*	*-0.138*	*-0.134*	*-0.115*	*-0.135*
<0	*19*	*19*	*21*	*21*	*19*	*19*	*19*	*18*	*17*	*18*	*17*	*20*

Source: Datastream.

Table 11

From the indicated year until 2008. Raw betas vs. BETA =1

Correlation (R_t, β Rm_t), Correlation (R_t, Rm_t) and its difference using betas calculated with daily data of last 5 years. Betas calculated every year end vs. the S&P 500

	Correlation(Rt, BetaRm) - Correlation(Rt, Rm). Yearly data from ... until the year 2008											
	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	aver
3M	0.004	0.017	0.016	0.017	0.017	0.017	0.018	0.022	0.033	0.023	-0.010	**0.016**
AT&T	-0.016	0.012	0.014	0.010	0.011	0.011	0.012	0.021	0.003	0.015	0.029	**0.011**
ALCOA	0.031	0.033	0.036	0.041	0.040	0.044	0.040	0.029	0.026	-0.005	-0.036	**0.025**
AMERICAN EXPRESS	-0.014	-0.016	-0.013	-0.006	-0.008	-0.011	-0.012	-0.017	-0.013	-0.001	-0.021	-0.012
BANK OF AMERICA	-0.115	-0.101	-0.107	-0.099	-0.100	-0.101	-0.102	-0.103	-0.095	-0.098	-0.107	-0.103
BOEING	-0.002	0.017	0.016	0.011	0.011	0.011	0.011	0.014	0.017	0.013	-0.003	**0.011**
CATERPILLAR	0.000	-0.012	-0.013	-0.014	-0.015	-0.027	-0.028	-0.038	-0.039	-0.043	-0.020	-0.023
CHEVRON	-0.002	-0.022	-0.023	0.004	0.008	0.000	0.001	-0.010	0.002	-0.012	-0.020	-0.007
CITIGROUP	-0.043	-0.018	-0.019	-0.027	-0.028	-0.035	-0.035	-0.024	-0.019	-0.009	-0.012	-0.024
COCA-COLA	0.000	0.026	0.030	-0.016	-0.015	-0.014	-0.013	-0.051	-0.081	-0.129	-0.120	-0.035
E I DU PONT DE NEMOURS	-0.033	-0.015	-0.014	-0.012	-0.011	-0.011	-0.015	-0.012	0.010	0.029	0.022	-0.006
EXXON MOBIL	-0.053	-0.055	-0.056	-0.057	-0.052	-0.047	-0.041	-0.026	-0.014	-0.007	-0.018	-0.039
GENERAL ELECTRIC	-0.037	-0.023	-0.022	-0.024	-0.024	-0.024	-0.024	-0.029	-0.023	-0.017	-0.015	-0.024
GENERAL MOTORS	0.061	0.049	0.050	0.016	0.018	0.030	0.031	0.030	0.027	0.022	0.018	0.032
HEWLETT-PACKARD	0.009	-0.020	-0.012	-0.008	-0.009	-0.008	-0.014	0.024	0.021	0.003	-0.038	-0.005
HOME DEPOT	0.033	0.034	0.033	-0.003	-0.011	-0.001	-0.002	-0.012	-0.025	-0.020	0.026	**0.005**
INTEL	-0.065	-0.062	-0.063	-0.035	-0.052	-0.057	-0.056	-0.058	-0.018	-0.064	-0.033	-0.051
IBM	0.010	-0.038	-0.046	-0.074	-0.077	-0.077	-0.083	-0.106	-0.069	-0.063	0.006	-0.056
JP MORGAN CHASE & CO.	-0.032	-0.043	-0.039	-0.028	-0.037	-0.037	-0.035	-0.008	0.032	0.022	0.026	-0.016
JOHNSON & JOHNSON	0.019	0.038	0.042	0.041	0.044	0.050	0.055	0.033	0.034	0.020	-0.030	**0.032**
MCDONALDS	-0.038	-0.033	-0.035	-0.036	-0.038	-0.038	-0.039	-0.049	-0.055	-0.045	-0.055	-0.042
MERCK & CO.	0.010	0.010	0.011	-0.012	-0.007	0.001	0.001	-0.006	-0.004	-0.001	-0.014	-0.001
MICROSOFT	-0.043	-0.025	-0.021	-0.091	-0.087	-0.074	-0.080	-0.093	-0.081	-0.086	-0.046	-0.066
PFIZER	0.008	0.004	0.004	-0.014	-0.010	-0.005	-0.006	-0.009	-0.009	0.001	-0.021	-0.005
PROCTER & GAMBLE	-0.044	0.048	0.053	0.046	0.047	0.046	0.047	0.053	0.053	-0.012	0.034	**0.034**
UNITED TECHNOLOGIES	0.005	0.008	0.010	0.003	0.005	0.004	0.005	0.009	0.015	-0.008	-0.004	**0.005**
VERIZON COMMUNICATIONS	-0.065	-0.019	-0.019	-0.049	-0.049	-0.048	-0.047	-0.040	-0.053	-0.027	-0.020	-0.040
WAL MART STORES	-0.007	-0.007	-0.006	-0.028	-0.027	-0.021	-0.021	-0.003	-0.002	-0.010	0.014	-0.011
WALT DISNEY	0.000	0.017	0.018	0.023	0.016	0.019	0.018	0.019	0.020	0.036	0.009	**0.018**
Average	**-0.014**	**-0.007**	**-0.006**	**-0.015**	**-0.015**	**-0.014**	**-0.014**	**-0.015**	**-0.011**	**-0.016**	**-0.016**	**-0.013**
Máx.	*0.061*	*0.049*	*0.053*	*0.046*	*0.047*	*0.050*	*0.055*	*0.053*	*0.053*	*0.036*	*0.034*	*0.034*
Mín.	*-0.115*	*-0.101*	*-0.107*	*-0.099*	*-0.100*	*-0.101*	*-0.102*	*-0.106*	*-0.095*	*-0.129*	*-0.120*	*-0.103*
<0	*17*	*16*	*16*	*19*	*19*	*19*	*18*	*19*	*16*	*19*	*20*	*19*

Source: Datastream.

Table 12

Last column of tables 4 to 11

It may be seen, again, that $\beta = 1$ has higher correlation with returns than calculated betas for all companies except Caterpillar and General Motors

	Last column of table n.							
	11	**10**	**9**	**8**	**7**	**6**	**5**	**4**
	aver	aver	aver	aver	aver	aver	aver	aver
3M	**0.016**	-0.006	**0.020**	**0.018**	-0.109	0.064	-0.023	**0.034**
AT&T	**0.011**	-0.005	-0.032	-0.147	-0.336	-0.276	-0.057	-0.019
ALCOA	**0.025**	**0.029**	**0.017**	**0.038**	-0.107	-0.115	-0.005	**0.014**
AMERICAN EXPRESS	-0.012	-0.024	-0.059	-0.011	-0.091	-0.115	-0.077	-0.069
BANK OF AMERICA	-0.103	-0.135	-0.101	-0.094	-0.265	-0.088	-0.211	-0.111
BOEING	**0.011**	-0.021	**0.051**	-0.006	-0.247	-0.246	**0.003**	**0.000**
CATERPILLAR	-0.023	**0.009**	**0.029**	**0.050**	**0.026**	**0.173**	**0.054**	**0.043**
CHEVRON	-0.007	-0.016	-0.017	-0.035	**0.087**	**0.197**	**0.039**	**0.067**
CITIGROUP	-0.024	-0.069	-0.094	-0.116	-0.059	-0.126	-0.054	-0.014
COCA-COLA	-0.035	-0.015	-0.111	-0.294	-0.440	-0.402	-0.113	-0.120
E I DU PONT DE NEMOURS	-0.006	-0.067	**0.003**	-0.082	-0.066	-0.026	-0.031	-0.008
EXXON MOBIL	-0.039	-0.123	-0.002	-0.058	-0.007	-0.077	-0.012	-0.033
GENERAL ELECTRIC	-0.024	-0.026	-0.039	-0.028	-0.034	-0.031	-0.039	-0.014
GENERAL MOTORS	0.032	**0.067**	**0.043**	**0.089**	**0.060**	**0.044**	**0.015**	**0.040**
HEWLETT-PACKARD	-0.005	**0.041**	-0.043	-0.049	-0.141	-0.196	-0.012	-0.001
HOME DEPOT	**0.005**	**0.055**	-0.070	**0.049**	**0.039**	**0.112**	-0.117	**0.042**
INTEL	-0.051	-0.091	-0.086	-0.089	-0.005	-0.027	-0.038	-0.043
IBM	-0.056	**0.035**	-0.070	-0.003	-0.013	**0.147**	-0.086	**0.003**
JP MORGAN CHASE & CO.	-0.016	-0.028	**0.001**	-0.022	-0.096	-0.145	**0.009**	-0.037
JOHNSON & JOHNSON	**0.032**	-0.005	-0.030	-0.048	-0.094	-0.039	-0.048	**0.033**
MCDONALDS	-0.042	-0.025	-0.015	-0.034	-0.031	**0.090**	-0.052	-0.044
MERCK & CO.	-0.001	**0.011**	-0.042	-0.100	-0.119	-0.191	-0.067	-0.036
MICROSOFT	-0.066	-0.053	-0.174	-0.108	-0.152	-0.155	-0.219	-0.131
PFIZER	-0.005	**0.013**	-0.137	-0.111	-0.195	-0.268	-0.031	-0.049
PROCTER & GAMBLE	**0.034**	-0.089	-0.010	-0.104	-0.211	-0.277	**0.006**	-0.049
UNITED TECHNOLOGIES	**0.005**	**0.006**	-0.012	-0.031	-0.188	-0.130	-0.087	-0.132
VERIZON COMMUNICATIONS	-0.040	-0.046	-0.035	-0.110	-0.242	-0.243	-0.044	-0.057
WAL MART STORES	-0.011	-0.032	-0.180	-0.162	**0.224**	**0.077**	**0.008**	-0.017
WALT DISNEY	**0.018**	-0.008	**0.043**	-0.030	-0.074	-0.015	**0.031**	**0.021**
Average	**-0.013**	**-0.021**	**-0.040**	**-0.056**	**-0.100**	**-0.079**	**-0.043**	**-0.024**
Máx.	*0.034*	*0.067*	*0.051*	*0.089*	*0.224*	*0.197*	*0.054*	*0.067*
Mín.	*-0.103*	*-0.135*	*-0.180*	*-0.294*	*-0.440*	*-0.402*	*-0.219*	*-0.132*
<0	*19*	*20*	*21*	*24*	*24*	*21*	*21*	*19*