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Shareholder Value and Open Innovation: Evidence from “Dividend Champions”

Abstract

Purpose

The aim of this work is to analyze listed companies in the US market in order to investigate, for the selected firms, called Dividend Champions, the introduction of an open innovation practice.

Design/methodology/approach

This study is based on a mixed-methods research design. Our research is based on an empirical analysis undertaken with 65 listed companies in order to examine, in the first phase, the Dividend Champions companies; these firms have had, for at least four decades, an increasing dividend yield. In a second phase, for listed companies that for 60 years have systematically increased dividends paid and, at the same time, have beaten the market, we study whether they apply an open innovation practice.

Findings

Our study examines listed companies that for more than 60 years have regularly paid growing dividends (i.e., seven firms) and, at the same time, have beaten the yield of the market (i.e., six firms out of seven). The latter firms are American States Water, Dover Corporation, Emerson Electric, Genuine Parts Co., Parker-Hannifin Corporation, and Procter & Gamble Co. All these corporations have adopted/implemented at least a practice of open innovation.

Originality/value

To the best of our knowledge, this is one of the first studies based on shareholder value and open innovation. In particular, this paper highlights that US-listed companies with a long history of creating shareholder value and beating the market yield have adopted different open innovation practices.

Keywords: Shareholder value, Dividend Champions, Open innovation practice, Standard & Poor's 500, Stock Market, Acquisitions.

Introduction

Scholars of corporate finance are generally agreed that the objective of a firm is to maximize value (e.g., Guatri, 1991; Jensen, 2001; Damodaran, 2006; Dallochio & Salvi, 2011; Tardivo et al., 2012; Berk and DeMarzo, 2012; Brealey et al., 2015). More debated is whether this involves maximizing the equity value or the firm value, which includes, in addition to shareholders, other stakeholders (e.g., bonds, banks). However, most of the theoretical models of corporate finance are built on the assumption that the sole goal in decision making is to maximize the stock price. This can be the objective only for listed companies; for those not listed, the goal remains maximizing the firm value (Damodaran, 2006).

The secret of success in financial management is to increase value, and managers add value when the company can earn a higher return than shareholders can earn for themselves (Brealey et al., 2015).

From this point of view, the main strategies than define value are based on internal developments (connecting to the exploration and choice of strategic and operational opportunities) and external developments (e.g., mergers and acquisitions, joint ventures, and open innovation). Among these, open innovation is a paradigm that enables organizations to be more competitive, and, even more important, to maximize value.

Open innovation can be summarized as an approach that enriches firms' innovativeness and therefore allows them to acquire competitive advantage, but it also is limited to companies with special products or industry features. In particular, it is "the use of purposive inflows and outflows of knowledge to accelerate internal innovation and expand the markets for external use of innovation, respectively" (Chesbrough, 2006). Furthermore, this approach leverages both internal and external resources, even where technology is functional, to produce not only economic but also social impacts (Chesbrough & Di Minin, 2014).

In the current economic-competitive scenario, open innovation is not confined to the R&D management structure but postulates a complete review of the company's strategy. For this reason, it only yields meaningful results when the processes are completely revised, when the company becomes familiar with the appropriateness of the results of innovation, and, finally, when the focus is on the human factor, or the ability to motivate the participation of collaborators, users, and customers and value their contribution in terms of innovation (Di Minin, 2016).

The literature includes examples showing the many benefits associated with adopting an open innovation model (e.g., decrease of costs and some types of investments, improvement of firm competitiveness and innovation performance) that represent sources of competitive advantage, designed as bases to create value. In this sense, our study examines listed companies that for more than 60 years have systematically paid growing dividends and, at the same time, have beaten the markets (Standard & Poor's 500). We have investigated the introduction of an open innovation practice in order to expand the relationship shown in the literature between corporate finance and innovation, in particular with reference to the companies that have created more value for shareholders for a long time. To our knowledge, this is one of the first contributions based on shareholder value and open innovation that analyzed listed companies in the US market.

This paper is organized as follows. First, a literature review examines shareholder value and open innovation practice. The methodology is then presented, followed by a discussion of the results of this study. Last, we conclude with some theoretical and practical implications and conclusions.

Theoretical background

Shareholder value

The objective of shareholder value is generally accepted in both practice and theory (e.g., Ferrero, 1991; Damodaran, 2006; Tardivo et al., 2010, 2012; Brealey et al., 2015).

In particular, shareholder value can be used to refer to: the market capitalization of a listed company; the idea that the main aim for a firm is to enhance the wealth of its shareholders by paying dividends; the more detailed notion that planned actions by management and returns to shareholders should surpass benchmarks such as the cost of capital concept. Essentially, the idea is that shareholders' money should be used to earn a higher yield than they could earn themselves by investing in other assets having the same level of risk (Rappaport, 1986).

Moreover, the reasons for its diffusion are connected to the following aspects (Damodaran, 2006):

- the stock price is a parameter immediately and constantly observed to judge the work of a listed company;
- in a rational and efficient market, stock prices reflect the long-term effects of corporate policies; and
- maximizing stock price provides a clear criterion by which to choose investment and financing decisions.

However, any inefficiency in the financial markets could result in misallocation of resources and cause managers to make wrong choices. In this scenario, managers put their interests in the background, giving priority to those of shareholders; fundraisers are protected by attempts to expropriate by shareholders; there are no social costs; the management does not try to deceive the financial markets about the company's future prospects. If these conditions occur, the stock price maximization does not produce negative side effects and can therefore be adopted by management as a guiding objective in managing the company, because maximizing share prices would mean increasing the value of equity and the value of the company. In a truly efficient market, maximizing the stock price would be the same as maximizing shareholder value. In this case, the stock price reflects the strategy showed in the spreadsheet, and there is no differential between long- and short-term shareholder value. Nevertheless, if the market is not efficient, stock prices could overestimate or underestimate the forecast of the spreadsheet.

Therefore, referring to a corporation, the shareholder value can be calculated using the following formula (e.g., Guatri, 1991; Blyth et al., 1986; Ross et al., 1997), which considers the value created measured by monetary return:

$$R = \Delta W + D_{iv} - \Delta C$$

where:

R = value created measured by monetary return;

$\Delta W = P_{t+n} - P_t$ where P represents the share price;

D_{iv} = is the sum of dividend paid in the period;

ΔC = new invested capital.

Open Innovation practice

As previously introduced, open innovation can be summarized as an approach that enriches firms' innovativeness and therefore allows them to acquire competitive advantage, but it is also limited to companies with special products or industry features (Chesbrough, 2003; 2006). Chesbrough's paradigm of open innovation in the industrial enterprise is this:

Ideas can still originate from inside the firm's research process, but some of those ideas may seep out of the firm, either in the research stage or later in the development stage [...]. Ideas can start outside the firm's own labs and can move inside. There are many potential ideas outside the firm. The boundaries are dotted, reflecting the interface between what is done inside the firm and what is accessed from outside the firm (Chesbrough, 2006).

The increase in value from such innovation may be achieved in the market in two different ways:

- flowing within the finished product idea; and
- through the creation of patents that protect the created value, giving a chance to other market players to exploit this knowledge and to take advantage of this resource by entering into contractual arrangements (e.g. Park & Kim, 2005; Paraponaris, 2003; Roth, 2003; Huo et al., 2016; Messeni Petruzzelli et al., 2010; Carrillo, 2007).

In both cases, the goal is to create value by reducing the cost and time related to the R&D process, as well as the time to market. However, these conditions are not easy to achieve (Chesbrough, 2006).

In the literature, there are three different models of the open innovation process: outside-in, inside-out, and coupled.

In the outside-in process (e.g., Enkel et al., 2009; Fritsch & Lukas, 2001; Clark, 1989; Birou & Fawcett, 1994; Handfield et al., 1999; Dröge et al., 2000; Ragatz et al., 2002; Prahalad & Ramaswamy, 2000), firms decide to invest in collaboration with suppliers and clients, and to integrate the external knowledge gained. In the inside-out process (e.g., Grandstrand et al., 1992; Haour, 1992; Ulset, 1996; Mangematin & Nesta, 1999; Veuglers & Cassiman, 1999; Atuahene-Gima, 1992), organizations focus on externalizing the firms' knowledge and innovation for bringing ideas to market earlier than they can through internal development. In the coupled process (e.g., Fritsch & Lukas, 2001; Gassmann & Enkel, 2004; Littler et al., 1998; Pisano, 1990; Tao & Wu, 1997), companies cooperate with other firms in order to gain external knowledge (outside-in process) and bring ideas to market (inside-out process).

Besides implementing core processes to enable integration of external knowledge, exploit ideas outside the firm, or cooperate within joined innovation processes, the company needs certain capabilities to apply the open innovation approach effectively (Scuotto et al., 2017). For each of the core processes, a different capability is needed.

The concrete ways in which open innovation can be realized can be multiple, and include these (e.g. Hossain et al., 2016):

- Inter-company agreements, whereby an undertaking delegates to another, usually smaller company, the creation of certain innovations or the production of specific artifacts;
- Subsidizing start-up competitions, with the commitment to invest—directly or indirectly—in those entities that have developed the most promising innovations;
- “Hackathon” programming competitions, in which companies in a particular industry ask developers and innovators to invent digital solutions within 24 hours;
- Acquisition, by large corporations, of innovative start-ups or other companies, in order to integrate digital talents into the organization and discover some of the major innovations made by them;
- Creating start-up accelerators directly or indirectly managed by large companies, to share and circulate innovative ideas; and
- Partnerships with universities, research centers, and incubators to innovate on specific topics.

Among the benefits of open innovation are these: expand the company's competence base; integrate skills leading to heterogeneous areas and disciplines; increase the flexibility of the internal organization for innovation; stimulate creativity and the ability to generate new ideas; decrease or share the risks associated with innovative activities; reduce or share the costs of the innovation process; contain the time-to-market of new products and services; improve innovation performance; and improve the internal learning capacity through the transfer of external knowledge and learning routines (e.g., Chesbrough et al., 2006; Vanhaverbeke et al., 2008; Lee et al., 2010; Ullrich et al., 2016).

However, there are also risks associated with open innovation. Among the risks, open innovation might require internal capabilities such as absorptive capacity to exploit and integrate external knowledge and technologies to those developed internally; require a shift in internal culture to avoid the “not-invented-here syndrome” (employees and managers must be open to external ideas and innovation); involve some risk of internal knowledge and competences dispersing into the external environment (knowledge spillover); or require the allocation of time and resources to search and integrate external knowledge and technologies (e.g., Enkel et al., 2009; Veer et al., 2013; Ullrich et al., 2016).

Methodology

Research design

To gain a complete understanding of the phenomenon and to guarantee well-founded conclusions, this study is based on a mixed-methods research design (e.g., Edmondson & McManus, 2007; Eisenhardt & Graebner, 2007; Henkel et al., 2014).

Our research is based on an empirical analysis of 65 listed companies in US markets in order to examine, in the first phase, those that are “Dividend Champions”; these firms have maintained a growing dividend yield for more than 40 years. In a second phase, for listed companies that for 60 years have systematically increased dividends and, at the same time, beaten the market (based on Standard & Poor's 500), we study the adoption of open innovation practice.

Data collection procedure

This study follows an explorative approach. We recognized the US stock market as the world's largest in terms of size and representativeness, and among the US listed firms we identified the Dividend Champions. Those 65 companies (Figure 1) have distributed dividends, on average, for about 48 years. From the sample, we additionally extracted the following seven companies whose dividends have systematically grown for more than 60 consecutive years:

- American States Water (utility sector);
- Dover Corporation (industrial goods sector);
- Emerson Electric (industrial goods sector);
- Genuine Parts Co. (services sector);
- Northwest Natural Gas (utility sector);
- Parker-Hannifin Corporation (industrial goods sector);
- Procter & Gamble Co. (consumer goods sector).

Of the companies, 43% represented the industrial goods sector, 29% belonged to the utilities sector, 14% represented consumer goods, and 14% provided services.

We observed dividends distributed from January 1, 1990 to January 1, 2017 and calculated the shareholder value (Figure 2) according to the formula of Guatri (1991) and Ross et al. (1997). For the same period, the shareholder value was compared with the yield of the

markets (S&P 500). The market yield was beaten by six of the seven companies: American States Water, Dover, Emerson Electric, Genuine Parts, Parker-Hannifin, and Procter & Gamble (Figure 3).

We also investigated the adoption of open innovation practice by the six selected firms, using as data sources the companies' annual reports, websites, professional articles, and other corporate information. Data collection tools were chosen in order to increase precision, generalize results (Mari, 1994), and respond effectively to the triangulation principle (Woodside & Wilson, 2003). For this principle, the detection of a complex reality involves the activation and comparison of multiple levels of observation to allow for a multi-perspective reconstruction of the object of analysis (Castoldi, 2009).

Analysis and discussion of the results

The following section provides a brief profile for each of the six companies that have adopted open innovation and analyzes the features of its model in comparison to information from the literature.

American States Water (AWR), founded in 1929, is the parent of Golden State Water Company and American States Utility Services. Golden State Water provides water service to about 259,000 clients throughout 10 counties in Northern, Coastal, and Southern California. The company also distributes electricity to about 24,000 customers in California's Big Bear recreational area, and by way of American States Utility Services, it provides operations, maintenance, and construction management services for water and wastewater systems located on military bases. Its mission is maximizing shareholder value through a mixture of capital appreciation and cash dividends.

AWR has reinforced its expansion process to directly acquire firms through merger and acquisition in order to expand the company's footprint, achieve economies of scale, and integrate global R&D resources. For example, in 2015, through its wholly-owned subsidiary, AWR completed the acquisition of Rural Water Company.

Dover Corporation (DOV), founded in 1955, is a diversified global manufacturer that delivers equipment and components, specialty systems, and support services through four operating segments: energy, engineered systems, fluids, and refrigeration and food equipment. The company's business philosophy is to acquire strong businesses with solid fundamentals and market-leading positions. Dover is committed to creating economic value for shareholders and clients through sustainable environmental practices.

Dover supports the growth plans of its existing businesses through acquisitions that are the right fit strategically and culturally for continued innovation and growth. The company aims to increase market penetration and global growth, draw world-class talent, and share in best practices for leveraging tools and resources.

Emerson Electric (EMR), founded in 1890, is a multinational manufacturing corporation that brings together technology and engineering in industrial, commercial, and consumer markets. It provides products and services categorized by four segments: process management, climate technologies, industrial automation, and commercial and residential solutions. In 2015, Emerson repositioned the latter two segments in order to enhance investment opportunities and accelerate value creation for shareholders.

In 2016, Emerson Electric partnered with the University of Dayton to establish the Helix Innovation Center, a 40,000-square-foot facility on the university's campus that provides a

collaborative environment for researchers, academia, and industry professionals to develop solutions to industry challenges.

Genuine Parts Co. (GPC), founded in 1928, is a leading parts distributor with more than 2,650 operational sites and approximately 39,600 employees. The company is engaged in the distribution of automotive replacement parts, industrial replacement parts, office products, and electrical/electronic materials.

Genuine Parts is reinforcing its internationalization process through acquisitions in order to establish a leading market position in the automotive aftermarket throughout Europe. In September 2017, it acquired Alliance Automotive Group, the second-largest parts distribution company in Europe, and it aspires to achieve long-term, sustainable expansion across the global automotive parts industry.

Parker-Hannifin Corporation (PH), founded in 1917, manufactures and sells motion and control technologies and systems for various mobile, industrial, and aerospace markets worldwide. The company operates in two segments: diversified industrial and aerospace systems. In its early days, the company built pneumatic brake systems for trucks, trains, buses, and industrial machinery, as well as leak-free fittings for the aviation industry.

In 2017, Parker-Hannifin opened a state-of-the-art higher manufacturing learning and development center, located at the company's Macedonia, Ohio, facility. The center will serve as a hub of excellence where engineers can investigate new applications of emerging technologies such as additive manufacturing and collaborative robotics. Through the center, Parker-Hannifin will leverage its investment and better solve its customers' challenges,

Procter & Gamble Co. (PG), founded in 1837, is a worldwide consumer goods corporation that operates through five segments: beauty; grooming; health care; fabric and home care; and baby, feminine, and family care.

A leading company for the application of open innovation, Procter & Gamble created a website, Connect + Develop (C+D), to support open innovation and assist the company in driving employee productivity. The C+D program assists with establishing partnerships for the company's technology, products, and e-commerce businesses. Through letting innovators link directly to P&G's posted needs, the company's open innovation strategy has implemented more than 2,000 successful agreements with associates around the world.

Implications and conclusions

To our knowledge, this is one of the first studies to focus on shareholder value and open innovation. Based on a mixed-methods research design, we describe seven listed companies in the US market, called "Dividend Champions," that have exhibited systematic growth in dividends for at least 60 years. Six of the seven firms— American States Water, Dover, Emerson Electric, Genuine Parts, Parker-Hannifin, and Procter & Gamble—have beaten the market yield based on the S&P 500. The six firms are all adopting or have adopted an open innovation approach.

Three companies (American States Water, Dover, and Genuine Parts) have recently made acquisitions of companies with high innovation potential, with a strong propensity for growth and customer attentiveness (e.g. Öberg, 2016; Shin et al., 2017). Two firms (Emerson Electric and Parker-Hannifin) have established partnerships with universities and research centers that enable them to carry on the transfer of technology (e.g. Del Giudice & Maggioni, 2014) based on industrial applications and businesses to make use of the core competencies

and knowledge of research centers and universities. One company (Procter & Gamble) has developed a pioneering open innovation program through which it develops collaborations with universities, companies, public and private organizations, and individual researchers to make product innovations.

The preliminary results of our research allow us to provide some theoretical and practical implications.

Theoretically, this work associates open innovation practices with shareholder value. In the literature, several studies have analyzed the two issues separately, but none have analyzed the two themes together. We have investigated the issues in order to expand the relationship between corporate finance and innovation. In particular, we demonstrate that listed US companies that have created longstanding value for shareholders have adopted an open approach to innovation.

In terms of practice, this study suggests that managers adopt an open innovation approach that, as highlighted in the literature, provides many advantages. The open innovation paradigm mitigates the main disadvantages of home-based innovation—high costs, need for vertical skills, and lengthened time to market—and offers the company some key benefits (e.g., Chesbrough et al., 2006; Lee et al., 2010; Ullrich et al., 2016):

- stimulates business innovation on key business issues with external inputs: innovative products, services, and approaches;
- gives access to potential technologies in which to invest competitively;
- raises management and internal resources in an increasingly digital and constantly changing market scenario; and
- offers opportunities to invest resources in the development of young people's ideas and talents.

It is noted that our work cannot prove a cause-and-effect relationship between six-decade dividend growth and the adoption of an open innovation model.

Future researchers may find it useful to statistically measure the impact of open innovation on shareholder value.

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Figure 1: Selected companies analyzed

N°	Company Name	Industry	No.'Yrs
1	3M Company	Conglomerate	59
2	ABM Industries Inc.	Business Services	50
3	Altria Group Inc.	Tobacco	47
4	American States Water	Utility-Water	62
5	Archer Daniels Midland	Agriculture	42
6	Automatic Data Proc.	Business Services	42
7	Becton Dickinson & Co.	Medical Instruments	45
8	Black Hills Corp.	Utility-Electric	47
9	C.R. Bard Inc.	Medical Instruments	45
10	California Water Service	Utility-Water	50
11	Carlisle Companies	Rubber and Plastics	40
12	Cincinnati Financial	Insurance	57
13	Coca-Cola Company	Beverages-Non-alcoholic	55
14	Colgate-Palmolive Co.	Personal Products	54
15	Commerce Bancshares	Banking	49
16	Computer Services Inc.	Technology-Services	45
17	Connecticut Water Service	Utility-Water	47
18	Consolidated Edison	Utility-Electric	43
19	Dover Corp.	Machinery	61
20	Emerson Electric	Industrial Equipment	60
21	Farmers & Merchants Bancorp	Banking	52
22	Federal Realty Inv. Trust	REIT-Shopping Centers	49
23	Genuine Parts Co.	Auto Parts	61
24	Gorman-Rupp Company	Machinery	44
25	H.B. Fuller Company	Chemical-Specialty	47
26	Helmerich & Payne Inc.	Oil&Gas	44
27	Hormel Foods Corp.	Food Processing	51
28	Illinois Tool Works	Machinery	42
29	Johnson & Johnson	Drugs/Consumer Prod.	54
30	Kimberly-Clark Corp.	Personal Products	45
31	Lancaster Colony Corp.	Food/Consumer Prod.	54
32	Leggett & Platt Inc.	Furniture/Bldg. Prod.	45
33	Lowe's Companies	Retail-Home Improv.	54
34	McDonald's Corp.	Restaurants	41
35	MGE Energy Inc.	Utility-Electric/Gas	41
36	Middlesex Water Co.	Utility-Water	44
37	MSA Safety Inc.	Medical/Safety Equip.	45
38	National Fuel Gas	Utility-Gas	46
39	Nordson Corp.	Machinery	53
40	Northwest Natural Gas	Utility-Gas	61
41	Nucor Corp.	Steel & Iron	44
42	Parker-Hannifin Corp.	Industrial Equipment	61
43	Pentair Ltd.	Industrial Equipment	41
44	PepsiCo Inc.	Beverages/Snack Food	44
45	PPG Industries Inc.	Conglomerate	45
46	Procter & Gamble Co.	Consumer Products	60
47	RLI Corp.	Insurance	41
48	RPM International Inc.	Chemical-Specialty	43
49	S&P Global Inc.	Publishing	44
50	SJW Corp.	Utility-Water	50
51	Stanley Black & Decker	Tools/Security Products	49
52	Stepan Company	Cleaning Products	49
53	Sysco Corp.	Food-Wholesale	47
54	Target Corp.	Retail-Discount	49
55	Telephone & Data Sys.	Telecommunications	43
56	Tennant Company	Machinery	45
57	Tootsie Roll Industries	Confectioner	50
58	United Bankshares Inc.	Banking	43
59	Universal Corp.	Tobacco	46
60	Vectren Corp.	Utility-Electric/Gas	57
61	VF Corp.	Apparel	44
62	W.W. Grainger Inc.	Electronics-Wholesale	45
63	Walgreens Boots Alliance Inc.	Retail-Drugstores	41
64	Wal-Mart Stores Inc.	Retail-Discount	44
65	WGL Holdings Inc.	Utility-Gas	41

Legend: No.'Yrs: number of consecutive years of growing dividends payment

Figure 2: Share prices analysis and monetary return between 01/01/1990 – 01/01/2017

Company Name	Ticker Symbol	Share Price		Return of 1 share			
		Pt	Pt+n	$\Delta W = Pt - Pt+n$	$\Delta W \%$	$\sum dt$ with $0 < t < n$ (*)	$\sum dt \%$ with $0 < t < n$
American States Water	AWR	4,63	43,78	39,150	845,57%	14,463	312,37%
Dover Corp.	DOV	7,39	77,75	70,360	952,10%	17,382	235,22%
Emerson Electric	EMR	9,56	58,66	49,100	513,60%	26,509	277,29%
Genuine Parts Co.	GPC	16,72	96,81	80,090	479,01%	36,764	219,88%
Northwest Natural Gas	NWN	16,17	58,90	42,730	264,25%	38,161	236,00%
Parker-Hannifin Corp.	PH	8,15	147,13	138,980	1705,28%	23,282	285,67%
Procter & Gamble Co.	PG	8,00	87,60	79,600	995,00%	32,138	401,72%

Legend: $\sum d_t$

- ✓ AWR from 01/04/1990
- ✓ DOV from 01/01/1990
- ✓ EMR from 01/01/1990
- ✓ GPC from 01/01/1990
- ✓ NWN from 01/04/1990
- ✓ PH from 01/01/1990
- ✓ PG from 01/01/1990

Figure 3: Total monetary return of selected companies Vs S&P 500 index (01/01/1990-01/01/2017)

Company Name	Ticker Symbol	Return of 1 share			
		R	R %	RS&P500 % (*)	R % > RS&P500%?
American States Water	AWR	53,613	1157,94%	588,90%	Yes
Dover Corp.	DOV	87,742	1187,31%	592,50%	Yes
Emerson Electric	EMR	75,609	790,89%	592,50%	Yes
Genuine Parts Co.	GPC	116,854	698,89%	592,50%	Yes
Northwest Natural Gas	NWN	80,891	500,25%	588,90%	No
Parker-Hannifin Corp.	PH	162,262	1990,95%	592,50%	Yes
Procter & Gamble Co.	PG	111,738	1396,72%	592,50%	Yes

Legend: $R_{S\&P500} \%$

Market (S&P 500 - ^GSPC)	Price	
t_n S&P500 01/01/2017	2.278,87	2.278,87
t_0 S&P500 01/01/1990	329,08	
t_0 S&P500 01/04/1990		330,80
ΔW	1.949,79	1.948,07
R%	592,50%	588,90%