

Corporate governance, cross-listing, and managerial response to stock price discounting: Royal Ahold and market arbitrage—Amsterdam and New York, 1973-2004

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Abstract. Of the events signalling the end of the TMT bubble, scandals of corporate governance in the US and Europe captured the public imagination. In play were the greed and hubris of senior executives prompting further debate over countries' standards of corporate governance. If Enron and WorldCom were the US reference points, Ahold and Parmalat were the European instances. Ahold was especially important, being an instance of significant internal accounting and reporting failures and an instance of poor public disclosure of market-sensitive information. We report the analysis of market trading in Ahold stock in both Amsterdam and New York. It is shown that greater volatility in Amsterdam daily closing prices presaged the crisis to come in Ahold shares suggesting the leakage of information to privileged insiders. It is also shown that New York prices were “inefficient” notwithstanding the advantages of a New York listing for the firm. Implications are drawn for the theory of global finance, and the nature and scope of convergence in national standards of corporate governance. It is argued that the co-existence of rather different regimes of governance may be undercut by the reaction of institutional investors in the global financial market place to the actions of corporate management.

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1. Introduction

Over the 1990s, global capital market integration focused on firms and industries was widely perceived as inevitable (see Litterman 2003). However, times have changed in the aftermath of the TMT bubble, terrorism and war, and crisis in national systems of corporate governance (Shiller 2003). Enron and WorldCom raised serious questions about the integrity of US corporate governance and especially the integrity of the audit process and the quality of available market information on corporations' circumstances and prospects. These scandals undercut claims to the effect that US securities markets and the rules and regulations governing the disclosure of market-sensitive information were superior to continental Europe. At a time of negotiation over the design and implementation of a global financial accounting system, these scandals strengthened the hand of other countries in the face of a putative American hegemony. To complicate matters, however, thereafter came governance scandals in Europe at the Dutch company Ahold and the Italian company Parmalat. Once again, doubts have been raised about the functional structure of global financial markets and the prospects for integration.

Recall that the Dutch company is one of just a handful of global players in the food retailing and wholesaling industry (Wrigley 2000). It has enormous geographical scope, bringing to Amsterdam market share and revenue from virtually all corners of the world. Also recall that it was the subject of considerable stock market discounting in the face of accounting problems in parts of its far-flung empire (Wrigley and Currah 2003). Ratings companies have significantly discounted the expected value of Ahold; for example, in January 2004 GovernanceMetrics International (GMI) gave it an overall global rating of 4.5 (against its industry peers) and a low regional rating of 3.5 (against its European peers) (each against a possible score of 10). There are many academic and industry studies of the corporate governance scandals at Enron, WorldCom, Ahold and Parmalat.¹ It is not our intention to go over well-trodden ground. Our goal is to look more carefully at stock market responses to the Ahold scandal in the light of inter-market arbitrage and the response of Ahold to negative market sentiments. More generally, we assess the evidence for and against global

¹/. See Broekstra et al. (2004) and Wrigley and Currah (2003) on Ahold, Coffee (2003) and Gordon (2003) on Enron, Melis (2003) on Parmalat, and Sidak (2003) on WorldCom. Most of these citations are taken from www.ssrn.com; there are many more such commentaries being written.

capital market integration and the prospects for convergence in corporate governance standards.

Information was collected on the daily Amsterdam stock market closing price of Ahold for the period 1973 to 2004 (over 10,000 observations). We sought to characterise the history of Ahold as seen through the Amsterdam stock market, paying particular attention to the existence of distinctive episodes as well as crucial inflection points marking-off the end and the beginning of different episodes in market trading and expectations. Each episode was analysed in terms of its volatility and its underlying time-series properties. Having demonstrated heightened stock market speculation over Ahold prior to the official announcement of accounting irregularities, the view from New York was analysed utilising Granger tests of causality. Prior to the crisis, New York trading in Ahold contained information in its own right whereas after the crisis New York-based traders relied exclusively on Amsterdam market information. If this is evidence for market segmentation in the face of heightened risk and uncertainty, it is also shown that Ahold responded by increasing disclosure of market sensitive information. Here, we rely upon Deminor's proprietary database of European corporate governance sensitive to the interests of financial markets (explained in detail in Wójcik 2004).

It is argued that the Royal Ahold "problem" is representative of a more general issue—the power of incumbent managers when owners are unorganised and their holdings small and dispersed over many institutions (see Roe 1994). In the Ahold case, it assumes greater significance because of the claimed distinctiveness of continental European traditions especially with respect to the supposed preferential status of insiders and networks of closely related owners (like banking institutions). Over the 1990s, Dutch ownership of Ahold was increasingly fragmented and spread out over a number of markets through cross listing (including Amsterdam and New York). While we have no evidence this was driven by management being, in part, the result of domestic dis-engagement and globalization by large Dutch investors and pension funds, geographical fragmentation of ownership provided managers room to manoeuvre. Problems of accountability and management within Ahold were

registered as “unanticipated surprises” on global stock markets (sudden and precipitous changes in Ahold stock prices). Thereafter, Ahold (managers) sought to re-assure institutional investors (owners) by significantly improving disclosure and standards of corporate governance.

The Ahold story is consistent with those that argue there is a relationship between corporate governance and market value (see Gompers et al. 2003 and Bauer et al. 2004). We link this issue to the debate about convergence of national standards of corporate governance. In part, our argument is negative in the sense that the evidence suggests that Ahold’s “problems” were a product of their home location notwithstanding cross-listing. In another sense, however, our argument is positive in that the response of Ahold to investor sentiment was conceived to meet expectations of higher standards in global capital markets. Ahold’s response was consistent with the increasing willingness of institutional investors to intervene in poorly governed companies: corporate engagement, the fifth stage of capitalism, may be a vital ingredient in the transformation of continental European corporate governance in relation to global standards (as suggested by Clark and Hebb 2004 and Hebb and Wójcik 2005). It was also consistent with Lowenstein’s (1996) observation that managers manage what is measured. This may or may not enhance corporate financial performance (Larcker et al. 2004), but it will mean that managers manage institutional investors’ expectations about the formal structure of corporate governance.

2. The geography of finance

This paper falls between two vibrant research programmes, one in economic geography on the structure and performance of the global economy and the other in finance on the relationship between nation-state systems of corporate governance and stock market performance.² There are, of course, other related areas of academic and industry research; we do not mean to suggest that economic geography and finance are the only disciplines focused upon these issues. Making the bridge between these research programmes depends upon initial assumptions about the nature and

²/ See, respectively, Clark and Wójcik (2003, 2005) on the regional foundations of the German model in relation to global economic imperatives (a geographical perspective), and Halling et al. (2004) on the cross-listing of firms on global financial markets and national systems of corporate governance (a finance perspective). Note the latter authors’ comment to the effect that, notwithstanding the virtues of cross-listing, home markets exert a strong “gravitational” attraction.

efficiency of global stock markets. If we assume that global capital markets are functionally just one market notwithstanding the history of their separate development, close attention to the institutional features of these markets and their relative performance would be irrelevant. While some analysts are convinced that the future of global capital markets is one virtual market characterised by strong efficiency in time and space (O'Brien 1992), few analysts are convinced that this is an adequate characterisation of contemporary circumstances (Clark 2004).

The mapping exercise by La Porta et al. (1997, 1998) of the legal and institutional foundations of nation-state financial markets has been widely accepted as the most appropriate reference point in understanding market-by-market interaction and the prospects for integration. Recall that La Porta et al. demonstrated that there are distinctive groups of financial markets rather than just one kind of financial market or one kind of institutional structure. They mapped these markets and worked back to the historical importance of rather different legal institutions with respect to the rights and privileges of insiders versus outsiders. La Porta argued that market liquidity can be explained by reference to these legal institutions and the degree of protection afforded "outsiders" investing in listed companies. Their mapping exercise was, in part, an exercise in documenting the obvious just as it was an exercise in explaining the relative performance of one kind of financial market (Anglo-American) against the rest (and in particular continental European markets). Their project has had a number of important consequences not least of which has been the development of related research programmes on systems of corporate governance.

At the same time, we should take care not to exaggerate the separate existence of financial markets nor should we ignore the fact that financial institutions trade in and across these markets virtually every minute of every day. For there are obvious economic advantages in global financial trading not least of which is the return to be had in facilitating commodity trade and the prospects of arbitrage between markets given perceived pricing anomalies between markets. With the rise of global portfolio managers, asset allocation has taken the map of market capitalisation weighted, in many cases, by institutional risk as the investment formula. Not surprisingly, financial institutions have developed complex and systematic methods of risk-management across markets designed to protect, at least, their own positions if not

integrity of the whole global trading system. In this respect, the geography of finance is about financial centres, capital flows between those centres, and the channels and networks that collect, organise, and manage those flows in relation to risk and return (Clark 2004).

Any study of the geography of finance must be sensitive to the co-existence of local expectations with global opportunities for arbitrage and profit. In fact, it is worth observing that all financial centres are dominated by and rely heavily upon what is often termed "home bias". It can be observed that the single largest source of assets in any financial market comes, more often than not, from the domestic economy. All things being equal, including industry structure and economic growth potential, the larger the economy, the larger the volume of domestic assets to be invested.³ All things being equal, including property rights and market transparency, domestic assets are more likely to be invested locally than globally. This is because it is more cost-effective to collect and assess domestic market information than it is to reach-out to the ends of the world and rely upon third-party providers of distant market information (Wrigley and Currah 2004). In larger economies, market-specific economies of scale in information processing may then reinforce "home bias". As Wilhelm and Downing (2001) point out, financial markets are enormous information processing systems that rely on the cost, quality, and quantity of information for efficient decision-making.

"Home bias" is not the end of the story. If we were to introduce, all things being equal, variable country or market-specific economic growth potentials and market-specific differences in property rights and transparency then we could imagine home bias being, in some cases, a drag on risk-adjusted rates of return. Consider the following thought experiment. Imagine there are two markets of approximately the same size (measured in terms of total population, GDP per capita, etc) but that one market has a higher rate of expected long-run economic growth due to technological innovation and higher rates of immigration. Imagine that the market with the higher rate of expected long-run economic growth is also the market with better quality

³/. Of course, this is hardly an accurate characterization of the global map of financial assets. Funded pensions (defined benefit and defined contribution) in many countries has meant that there are

property rights and market transparency relevant to minority investors. Assume that the growth market is also the market with more reliable information relevant to global investors. If it is assumed that higher growth potentials combined with market transparency encourages the pooling of financial assets across markets, then we can assume that the cost of capital is lower in that market than in other markets. All financial assets need not flow to just one market; "home bias" means that a large portion of assets will remain in the local market.

This thought experiment introduces two crucial issues relevant to the paper. In the first instance, if we assume a large proportion of assets stay local then the institutional structure of each market need not converge. If we assume, by reason of geography and history, that there are systematic differences between markets in terms of their institutional structures and legal requirements, co-existence rather than convergence is a likely scenario. In other words, the rules regulating corporate governance could remain much as they were over past decades as long as these rules were not seen to be impediments to long-run economic growth and, at the limit, the attraction of global capital flows. In the second instance, however, a settled and differentiated map of corporate governance and financial market performance may not benefit all firms in the lower growth market. Some firms may be tempted to list on the other market in the hope of benefiting from a lower cost of capital and the interest of minority shareholders who share neither the expectations of domestic investors nor the assumption of a settled landscape of firm-specific growth opportunities in the global marketplace.

This introduces the prospect of internal differentiation within the lower growth market in that some firms may adopt higher standards of reporting consistent with the other market. This is unlikely to benefit the firm in their domestic market, recognising that local expectations are formed around existing channels of information, market gossip, and history of the firm. Recognising that investors from the other market may be less aware of the codes of practice (formal and informal) governing the transmission of information in the "home" market of the firm they may rely, as they have always relied, upon the rules and regulations governing the transmission of market-sensitive

significant differences in the volume of assets and the institutions of investment even amongst OECD

information in their own market. This assumes, of course, that neither the firm nor its agents seek to exploit such differences between markets in the channels of information. In sum, the cross-listing by firms in different markets carries with it the possibility of significant geographical information asymmetries notwithstanding the confident expectations in some markets normally thought better regulated and more transparent than the home markets of the firms that come to cross-list.

In this paper, we focus on one firm cross-listed between Amsterdam and New York—straddling two different institutional settings and expectations regarding the integrity of market-sensitive information. We do not mean to idealise either the Amsterdam market or the New York market. As recent events have shown, at the peak of the TMT boom many investors on both sides of the Atlantic were taken for a ride. However, we would argue that the New York market has traditionally protected minority investors better than the Amsterdam market. The issue, empirically speaking, is how this worked for one firm where it appears senior managers exploited the geography of finance—the gap between the two markets in terms of their information richness and in terms of the integrity attributed to market-sensitive information. After the denouement, we focus upon the response of the firm in terms of its “home” policies of corporate governance. We show that having exploited geography, senior managers were then forced to reform their disclosure policies in line with the expectation of global investors. This has, in effect, prompted convergence in firm-specific standards of corporate if not the entire economy.

3. Corporate history of Ahold

Albert Heijn’s grocery store was established in 1887, and expanded to several stores in the Amsterdam region before the start of the 20th century. As a family company, Ahold was first listed on the Amsterdam Stock Exchange in 1948 with its initial acquisition in 1951. Ahold N.V. was founded in the 1970s based upon dominance of the Dutch market, and entry into the US market by acquisition of the Bi-Lo supermarket chain in the Carolinas and Georgia. In the 1980s, Ahold acquired more businesses including another two supermarket companies in the US. With the first non-family chief executive appointed in 1989, Ahold established a holding company

countries, let alone the rest of the world (Clark 2000, 2003).

and supermarket chain in eastern Europe. The appointment in 1993 of Cees van der Hoeven as CEO, as well as listing on the NYSE (and Zurich and Brussels), was an important moment in its extensive globally-oriented acquisition strategy. In the second half of the 1990s and the first couple of years of the new millennium, Ahold acquired or established a number of supermarket chains in Asia, eastern and western Europe, South America, and the US. Ahold sales for 2000 amounted to 52.5 billion euro (net earnings 1.1 billion euro). The global acquisition strategy continued in 2001 and 2002 with record sales of 72.7 billion euro in 2002. By that time, Ahold had become the third largest retailer in the world operating more than 5,000 stores with over 280,000 employees (Wrigley and Currah 2003).

When van der Hoeven was appointed, Ahold annual sales were about 10 billion euro. In effect, it is widely believed by informed analysts the governance culture at Ahold and the Dutch legal setting allowed the CEO to build a global retail company rather than focusing on maximizing shareholder value. Furthermore, over the 1990s many large institutions deliberately ran-down their holdings in Ahold and in other large Dutch companies as part of their global investment strategies (designed to capture higher growth expectations in other markets). Before the crisis, however, the few Dutch institutional shareholders (pension funds) with sizeable stakes in Ahold were uneasy about the governance of the company with pointed interventions at the 2001 AGM (May 15th). Criticism was made about the lack of transparency of managers' compensation plans (options schemes) and the apparent breach of the "one share-one vote-one dividend policy". Other shareholders did not however, support these criticisms. In fact, Ahold was widely admired as a Dutch company that had become a global champion just as its CEO was lauded for his corporate leadership and vision in corporate governance.

February 2003 was an important turning point in Ahold's history. Significant accounting irregularities at Foodservice (US) and at Disco (Argentina) led to the resignation of the CEO and the CFO. Later that year, other irregularities at joint ventures in Portugal and Scandinavia were also reported. Since the 2003 crisis, and in particular since the appointment of CEO Anders Moberg, the key words in Ahold's so-called "Road to Recovery" have been corporate restructuring, corporate governance, and divestment (retrenchment of geographical scope). Shortly after the

accounting scandal, Ahold announced major divestments in South America and Europe followed by the announcement of planned US disinvestments. In the meantime, Ahold's shareholders have endured one storm after the other. After the announcement of accounting irregularities, shareholders "voted with their feet" by selling Ahold stock. Institutional shareholders have demanded more disclosure and transparency on governance issues leading to a better remuneration policy, disclosure, and better rights for shareholders (see below). But the damage was done. Ahold shareholders and bondholders suffered dramatically and the long-term survival of Ahold is in doubt.

4. Data and methodology

There are two main types of data used in the paper: stock market data and corporate governance data. The former involves the closing daily price of Ahold's ordinary shares listed at Euronext Amsterdam over the period of January 1st 1973 to March 22nd 2004 as well as the closing daily price of Ahold's American Depository Receipts (ADRs) listed at the NYSE between December 31st 1993 and March 22nd 2004. The data were obtained from Credit Suisse First Boston; the start dates represent the first dates for which data were available and the end date represents the time of data collection. In order to compare the performance of Ahold's shares against a benchmark, we used data on the closing daily values of the main stock market index of the Euronext Amsterdam stock exchange (AEX) for the same time period. The AEX index is based on a weighted average of the prices of 25 largest Dutch companies in terms of market capitalisation, and is meant to represent the overall trend of the Euronext Amsterdam stock exchange.

Proprietary data on corporate governance were provided by Deminor Rating SA (shortly Deminor) a corporate governance-rating agency headquartered in Brussels, with offices in major European cities. The objective of Deminor ratings is to provide information to investors about a company's corporate governance standards and practices. While selected aggregate results of Deminor rating activity are available in the public domain, through published reports and website, details are available on subscription. The main users of Deminor ratings are institutional investors, both European and non-European, who use the ratings to inform their investment

decisions. Deminor's customers are often institutions that invest money on behalf of pension funds and large shareholders.

Deminor distinguishes between four building blocks of corporate governance, referred to as categories (Appendix 1). The first category "shareholders' rights and duties" captures the extent to which shareholders, including small ones, can have an impact on actions undertaken by the company. The second category "take-over defences" assesses the barriers (if any) against potential hostile take-overs that shelter the management from the threat of replacement. "Disclosure" measures the availability and quality of information on corporate governance. Within the fourth category "board structure and functioning", Deminor evaluates the diversity and experience of board members as well as their remuneration. Each category consists of sub-categories, summarized in the appendix. Deminor analysts use exclusively publicly available information, with the main sources being corporate websites, stock exchange announcements, and press articles. A company can score between 0 (poor) and 10 (excellent) points on each category, and their sum gives the total corporate governance score. On the basis of the scores, referred to as notations, Deminor assigns a rating from 1 to 5 for each category and the total. In this paper we use notations as they provide fine detail; reflecting the fact that notations are an intermediate step in the rating process, in the paper we will refer to them as "ratings".

Deminor ratings are prepared annually, with the first rating in its current format prepared in 2000. This is the rating we use in conjunction with the latest rating available 2003. The year of the rating stands for the year of its preparation. Thus the ratings used in the paper are based mostly on information valid for the end of 1999 and 2002 respectively. Deminor rates all companies that are constituents of the FTSE Eurotop index. The index consists of the largest 300 European companies according to market capitalisation (stock market price multiplied by the number of outstanding shares).⁴ In some cases, Deminor is not able to obtain sufficient information to rate a company; mergers and acquisitions can be significant impediments to company rating. The ratings for 2000 and 2003 cover 259 and 283 companies respectively.

⁴/ Strictly speaking, the index consists of the largest 300 eligible European companies. To be eligible a company must either have a free float of at least 15% or have a free float above 5% and market

To summarise, the Deminor data allows us to analyse the structure, the state, and the change in corporate governance of Ahold as well as its standing compared with other European companies (see also Wójcik et al. 2004). Of particular interest is the comparison of Ahold with other Dutch companies and the European retail industry. In order to identify retail companies among those rated by Deminor we used the Industry Classification Benchmark prepared by FTSE in collaboration with Dow Jones. It is a new classification to be adopted in the indices of the above vendors in late 2004. The paper now proceeds as follows. The next section involves a quantitative analysis of Ahold's stock price, aiming at identifying distinctive periods in the time-series. Section 6 extends the quantitative analysis by investigating the relationship between Ahold's prices in Amsterdam and New York. Section 7 focuses on corporate governance at Ahold in relation to industry, country, and European benchmarks – making the link between stock price volatility and inter-market trading and corporate response to negative market sentiments.

5. Ahold stock market prices

The upper part of Figure 1 presents the daily stock prices of Ahold from Euronext Amsterdam between January 1st 1973 and March 22nd 2004. On first inspection, we observe a period of rather stable prices until 1982, steady growth between 1982 and 1995, turning into exponential growth that continued until about 2000. Stock price growth in the second half of the 1990s became less smooth with time until it finished with a disastrous price drop of 63% on the single day of February 24th 2003.

In order to substantiate these observations about the path of Ahold stock prices, we first used a wavelet analysis. The wavelet method originates from geophysics (Foufola-Georgiou and Kumar 1995), and has been applied to other areas such as the analysis of El Nino cycles (Wang and Wang 1996). The method involves a transformation of a one-dimensional time-series into a two-dimensional frequency-time image. For each point in time over the time-series we learn about the extent to which the time-series around the point resembles a theoretical wavelet function with a given period (frequency). Wavelet analysis has been of interest in finance for two

capitalisation greater than USD 5bn (USD 2.5bn if it is incorporated in an emerging market country).

reasons. First, if there is any significant similarity between financial time-series and a wavelet function, it implies that the data are not totally random. Second, being able to estimate the degree of randomness over time as well as the period (frequency) of the underlying wavelet function, we can divide the period of the time-series into sub-periods representing different regimes (see Mankiw, Romer and Shapiro 1991).

The bottom part of Figure 1 presents the results of the wavelet analysis of Ahold Amsterdam stock prices. We used a derivative of the Gaussian function as our wavelet function although it should be stressed that the results would be similar if we used other specifications (see for details Torrence and Compo 1998). The shaded area on the graph represents the period of time for which the Ahold time-series is correlated with the wavelet function at the level of significance of at least 95%. If we zoom in on the edges of this area of significance, we can establish that it starts approximately on February 25th 1997 and finishes on February 21st 2003, the last trading day before the crash on February 24th. Within this six-year period of time Ahold Amsterdam prices exhibit some periodicity, oscillating in a way which is not totally random. In contrast, before and after this period we can find no statistically significant traces of non-randomness.

Let us take the analysis further by investigating the volatility of Ahold prices within and between the identified three periods of its stock market history (we will call these periods I, II, and III). Table 1 contains descriptive statistics on the absolute daily changes of Ahold stock price compared to the values of the Amsterdam Euronext stock market index AEX. Since the data for the AEX were only available from October 13th 1992, the results are not quite comparable prior to this period, and a fourth period from 1992 to 1997 was introduced for Ahold data (referred to as I’).

The first observation to be made is that the average daily absolute change was significantly higher for Ahold than for the AEX index throughout the whole period of analysis. This is not surprising, given that the index amalgamates the price changes of 25 different stocks. Second, the volatility of both the AEX and Ahold price grew over time between 1992 and 2003. In fact, the average absolute daily change in Ahold

For details of this and other European FTSE indices see FTSE (2004).

price in periods II and III was significantly higher than in the whole period of analysis I-III. Similarly, for the AEX index the average absolute daily change was significantly lower in period I' and significantly higher in periods II and III than in the period I'-III. The time pattern and the magnitude of volatility growth was however strikingly different between Ahold and the AEX. For the AEX, the mean and median daily absolute changes approximately doubled from period I' to period II, with no further significant growth in period III. By contrast, for Ahold the growth in the daily price changes continued in period III. When we relate the average (median) absolute daily change in Ahold price to the average (median) absolute daily change in AEX, the resulting ratio grew from approximately 1.4 before February 2003 to 2.3 afterwards.⁵

To summarise, in this section we have gained quantitative insight into Ahold's history seen through its Euronext Amsterdam stock market price. Wavelet analysis indicates two important moments in this history, one in February 1997 and other in February 2003. Between these moments, the stock market price of Ahold exhibits some periodicity; the company's stock prices are not entirely random. The analysis of volatility reveals that over this period of time, daily prices changes were significantly higher than between 1973 and 1997. Importantly, the volatility of Ahold stock price grew dramatically after February 2003, far beyond the levels of the volatility of the Dutch stock market as a whole.

6. Ahold stock market prices—Amsterdam v New York

In this section, we model the relationship between Ahold stock market prices on Euronext Amsterdam and on the NYSE, using the Granger (1969) causality test. In general, the test measures the significance of past values of variable X in explaining variable Y, taking into account the effect of past values of variable Y itself. Usually causal relations are tested both ways, from X to Y and from Y to X. Specifically, we estimate the following two regressions:

$$\text{AMS}(t) = c1 + \alpha \times \text{AMS}(t-1) + \beta \times \text{NYSE}(t-1) + u1(t)$$

⁵. In 2003 based on closing monthly prices, Ahold was the single most volatile stock in EuroStoxx 50, and had the worst shareholder return of all companies included in the index. Between 1997 and 2003 Ahold lost more market value than any but a few European companies (Fernandez and Villanueva 2004).

$$\text{NYSE}(t) = c_2 + \gamma \times \text{NYSE}(t-1) + \delta \times \text{AMS}(t) + u_2(t)$$

Where $\text{AMS}(t)$ ($\text{AMS}(t-1)$) are the daily closing price on day t (day $t-1$) for Ahold shares listed on Euronext Amsterdam; $\text{NYSE}(t)$ ($\text{NYSE}(t-1)$) are the daily closing price on day t (day $t-1$) for Ahold ADRs listed on the NYSE; c_1 and c_2 are constant; α , β , γ , and δ are regression coefficients; u_1 and u_2 are residual terms. $\text{NYSE}(t)$ is regressed on $\text{AMS}(t)$ instead of $\text{AMS}(t-1)$, since the time difference between New York and Amsterdam is so significant that the NYSE closes four or five hours after the close of trading in Amsterdam.⁶ Causal relations in the Granger sense are inferred through statistical significance of coefficients β and γ . In other words, we estimate the equations to determine whether $\text{NYSE}(t-1)$ ($\text{AMS}(t)$) provides any significant information about $\text{AMS}(t)$ ($\text{NYSE}(t)$) in the presence of $\text{AMS}(t-1)$ ($\text{NYSE}(t-1)$). Notice we tested for the importance of higher order lags but were not able to identify statistically significant lags other than those of 1 day.

The test was conducted for four periods of time. The first period covers the whole time-series for which data on the NYSE prices are available from the end of 1993 to March 22nd 2004. The division of this period into three sub-periods is based on the earlier findings establishing February 25th 1997 and February 21st 2003 as major cut-off points in Ahold's stock market history. The values of the coefficients and their statistical significance are presented in Table 2. In addition, the table reports the values of F-test statistics for both the AMS and NYSE regressions. For the whole period of the analysis as well as for each of the sub-periods, $\text{AMS}(t)$ provides highly significant information about $\text{NYSE}(t)$. In contrast, the contribution of $\text{NYSE}(t-1)$ to explaining $\text{AMS}(t)$, though statistically significant between 1993 and February 2003 is much smaller in terms of magnitude and after February 2003 disappears altogether.

Before interpretation, we should compare our results with the findings of previous research. Investigating Italian companies traded in the 1980s on SEAQ-International

⁶. We could model the hour or two of overlap between markets, using intra-day data (compare Hupperets and Menkveld 2002). This would be a significant undertaking, not least of which because of the costs of acquiring such data. While it may add insight about the temporal sensitivity of the trading process, the point we are making here is both conceptual and functional: in the first instance, having to do with the relationship between the two markets, and in the second instance, having to do with the order or temporal and spatial sequencing of market information across the Atlantic.

in London, Pagano and Röell (1991) found that the London market used prices from Milan to set their quotes. Grammig, Melvin and Schlag (2004) investigated three months of intra-day prices of US-listed German stocks in 1999 to find Frankfurt Stock Exchange's XETRA prices dominated NYSE prices, even though the latter explained almost 18% and 10% of total variation of XETRA SAP and DaimlerChrysler prices respectively. However, there is research showing that the home stock exchange does not always dominate price discovery. Hedvall, Liljeblom, and Nummelin (1997) found that for Nokia the NYSE played the dominant price-discovery role, at the same time accounting for a large part of Nokia's stock trading volume. Eun and Sabherwahl (2003) found that for Canadian stock listed in the US significant price discovery takes place in the US. In addition, they suggest a positive relationship between the fraction of total trading that takes place in the US and the contribution of the US market to price discovery.

In the context of the existing research, our results underscore the significance of the home base in the stock market price formation of a cross-listed company. In addition, we show that in crisis Amsterdam dominated New York as traders went back to Amsterdam so as to minimise the space-time information "gap" (reinforcing the results of Halling et al. 2004 on the "gravitational pull" of home markets expressed through the notion of "flow-back"). Admittedly, we do not have historical data on the trading volumes of Ahold shares in Amsterdam and its ADRs on the NYSE. Nevertheless, 2003 data from Citibank (2004) suggests that in 2003 trading on the NYSE represented only several percent of trading in Amsterdam.

Notwithstanding the insignificance of the NYSE in price discovery, there is another factor to be acknowledged. As Broekstra, Sornette, and Zhou (2004) report, in 1996 Ahold's annual sales in the US passed for the first time annual sales in the Netherlands. The consolidated financial statements of Ahold reveal that between 1999 and 2003 the share of the US in terms of Ahold net sales increased from 65% to 70% while the share of Europe fell from 30% to 25% (Ahold 2004). In light of the high and growing level of "Americanisation" of Ahold's sales operations, it is striking to see the negligible role of the NYSE in price discovery and its disappearance with time. Consolidating the results, the period when Amsterdam totally dominated New York in

terms of price discovery was the period following the corporate governance scandal. It was also the period when the volatility of Ahold share price reached its peak.

7. Corporate governance at Ahold

Using proprietary data provided by Deminor, we now analyze Ahold's corporate governance and compare it with other European companies. Table 3 represents Ahold's standards of corporate governance, broken down into four building blocks: shareholders' rights and duties, take-over defences, disclosure, and board structure and functioning (for details see the Appendix). Ahold's scores are set against the median scores of the Dutch, continental European retail, all continental European, and all European companies. Each of the first three groups is a relevant subset of the universe of European companies rated by Deminor, while the last group represents all companies included in Deminor ratings. The table presents both the state and structure of corporate governance in 2003 as well as its dynamics between 2000-2003.

The results of Table 3 show Ahold's corporate governance in a very unfavourable light. Ahold's scores were much below Dutch standards, despite the fact that the latter were low compared to a European benchmark and at best mediocre compared to a continental European benchmark. In addition, Ahold's scores were low in comparison with continental European retail companies. The total corporate governance rating of Ahold did increase between 2000 and 2003. However, progress was considerably below the typical improvement experienced in European and particularly Dutch companies. If we look inside the structure of Ahold's corporate governance, its disclosure was rated as average by European standards. Second, the company has had strong take-over defences but this is typical across continental Europe (Frentrop 2003). Thus, what contributed most to Ahold being a laggard in corporate governance were exceptionally poor ratings in terms of shareholders' rights and duties as well as board structure and functioning.⁷

⁷. In addition to Deminor we have also analysed Ahold's ratings for January 2004 provided by GovernanceMetrics International (GMI). Ahold's GMI ratings were above average in terms of market for control, average for corporate behaviour, remuneration, and board accountability, below average for shareholder rights, and well below average for financial disclosure and internal controls. Overall the GMI rating for Ahold was below average.

In light of Ahold's poor corporate governance score sheet, it is not surprising there was a corporate governance scandal at the company. While we would be reluctant to argue that corporate scandals can be easily predicted using corporate governance ratings, we would nevertheless suggest that the Ahold case underscores the value and significance of such ratings (compare Larcker et al. 2004). Indeed, the Deminor data can be used albeit retrospectively to identify structural weakness in Ahold's corporate governance. As noted above, Ahold has a relatively dispersed ownership structure. According to Deminor, Ahold's free float increased from 49% in 2000 to 78% in 2003, making Ahold's ownership the most diluted of all continental European retail companies rated by Deminor. Diluted ownership structure does not, however, necessarily translate into a threat of takeover: there are other barriers not related to the ownership structure. Ownership dispersion at Ahold limited the effectiveness of large shareholders as disciplining agents on management; there was no other mechanism for governing the agency problem. Given the weakness of Ahold's small shareholders and the weakness of its board, Ahold's management was on its own.

Consider Ahold's poor corporate governance in conjunction with the previous results on the growing volatility of Ahold stock market prices. Recall Clark and Wójcik's (2003) hypothesis on the relationship between corporate governance and stock price volatility. In their view, poor corporate governance and disclosure, in particular, implies a high premium on the internal circulation of information, leading to higher uncertainty among outside investors with regard to the fundamental value of the company and hence greater stock price volatility. Empirical support for this hypothesis can be found in research commissioned by Institutional Shareholder Services (Brown and Caylor 2004). Covering over 5,000 US corporations, their study established a negative relationship between the quality of corporate governance and stock price volatility.⁸ The study showed that the aspect of corporate governance most strongly related to volatility was board composition. Existing research indicates a positive relationship between poor corporate governance and stock price volatility—a relationship that strengthened once Ahold's poor governance practices came to light.

⁸/. Considering the relationship between corporate governance and stock market volatility it is interesting to mention that Fernandez and Villanueva (2004) show that between 1998 and 2003 the EuroStoxx Index was much more volatile than Dow Jones Industrial Average or the S&P500.

Interpreting the corporate governance scores of Ahold, we need to consider the role of cross-listing. Ahold was the only retail corporation included in the FTSE Eurotop 300 and rated by Deminor that had its ADRs listed on the NYSE. The issue is whether the NYSE listing had any impact on Ahold's corporate governance. In our view, the NYSE listing could have been an important factor explaining Ahold's relatively good disclosure score, in contrast to all other scores. Nevertheless, the overall poor state and dynamics of Ahold's scores suggests that the NYSE listing had no general positive impact on the company's corporate governance.

Insight about the "value" of a NYSE cross-listing is available from our findings on the relationship between Ahold prices on the NYSE and Euronext Amsterdam. As noted, traders on the NYSE followed Amsterdam prices, particularly after the shock of February 2003. The likely disadvantage of overseas and foreign traders and investors in terms of access to quality information is well-documented in finance literature (e.g. Bacidore and Sofianos 2002). It should be stressed that geographical information asymmetry was compounded by poor corporate governance. We would suggest that US traders having information about Ahold provided through the NYSE, but being far from the headquarters and management of a badly governed Ahold, should have had little trust in the New York market information. US-based traders had every reason to believe in the superiority of Amsterdam prices, despite US retail sales accounting for the majority of Ahold's revenue. The 2003 scandal revealed the magnitude of corporate governance problems at Ahold, and reinforced the lack of trust of institutional investors in the available public information.

There is other evidence to substantiate our claim about the relationship between the location of stock market price formation and corporate governance. Hupperets and Menkveld (2002) analysed price discovery in mid-1990s for seven Dutch blue chips cross-listed between the NYSE and Amsterdam. They found the contribution of New York in relation to Amsterdam to be high for Royal Dutch Shell and Unilever, low for KLM, Philips, and Aegon, and absolutely negligible for KPN and Ahold. Strikingly, if we used 2003 Deminor data and arrayed the above companies in descending order of total corporate governance score, their order would be exactly the same. This finding supports our hypothesis about the relationship between price discovery of cross-listed stocks and corporate governance. The worse a company's corporate

governance, the more likely that price discovery is based solely on information originating in the home market of the company.

To summarise, the analysis of corporate governance at Ahold, beyond being interesting in its own right, provides crucial opportunities to put the findings of the preceding sections into perspective. Moreover, the analysis of this section has led us to propose a possible conceptual explanation of the links between corporate governance, stock market volatility, corporate stock price crash, and price discovery of cross-listed stocks. To use a metaphor, while stock market price behaviour over time and space may be seen as one side of the coin of global capital markets, corporate governance can be seen as the reverse of the same coin.

8. Conclusions

In this paper, we looked at an instance of "failure" in European corporate governance. The Ahold case is interesting in its own right just others have looked similar cases in the UK, the US and elsewhere. There is a veritable industry in assessing these cases and the lessons to be learned about the nature and practice of corporate governance. The Ahold case is more interesting than some, particularly because of its implications for the study of globalisation (below). It is important, as well, to acknowledge that the Ahold case joins together issues of corporate governance with issues of the geography of finance crossing over disciplinary boundaries while encouraging us to look at corporate governance from the perspective of institutional investors located in different parts of the world.

The paper provides a detailed analysis of the temporal and spatial components of a firm's stock prices, taking advantage of recent developments in time series analysis. As well, it provides a framework for analysing the information effects of inter-market trading using the Granger causality tests to determine the interplay between leading and lagging stock markets on a 24 hour basis. Since much of the variance in market prices is to be found in day-to-day trading, this is a complement to studies of longer-term stock price trends in individual markets. Another contribution of the paper is to be found in the use of proprietary data on corporate governance to measure and assess the responsiveness of one firm to its own circumstances and its place amongst other firms in Europe. We showed that "reform" of corporate governance at the firm level

could be done very quickly (on a year to year basis) when confronted with a sudden and dramatic loss of investor confidence. Our approach could be the basis for large-scale, comparative studies of firms' inter-market performance and their current and past standards of corporate governance.

A recent GMI report on corporate governance ranked US standards above those of the UK for the first time in many years, and clearly above those of continental Europe. Coming on the heels of the scandals associated with Enron and WorldCom, it appears that the Sarbanes-Oxley regulatory regime has had a significant impact upon the form and substance of American corporate governance. It represents, once again, an important reference point for other nation-states and for foreign corporations seeking access to Anglo-American capital markets. We should take care, of course, not to exaggerate the significance of the convergence issue for many small firms whose capital and consumer markets are firmly ensconced behind the borders of their home countries. At the same time, we argue that the globalisation of the capital markets and standards of corporate governance often filters down from national champions to the myriad of smaller listed firms in any national economy (Clark and Wójcik 2005).

For some, globalisation carries with it important positive incentive effects driving nation-state regulatory regimes and the behaviour of larger firms towards best-practice. But in our analysis of Ahold we found that globalisation without rigorous capital market scrutiny based upon high standards of disclosure and transparency can lead to the destruction of corporate value. At a time when corporate managers were rapidly expanding the global reach of Ahold Dutch, institutional investors in the firm discounted their Ahold holdings while expanding their global portfolios. In combination, market information became more important than ever before. Relatively poor disclosure practices and a lack of transparency in terms of managers' goals and objectives meant, however, that market agents could not perform their pricing responsibilities in a manner consistent with the needs of the average shareholder whether located in Europe or in the United States. We showed that as the company became embroiled in crisis over its projected revenue figures, market agents retreated to Amsterdam and the gossip networks so important, it appears, when making judgments about integrity or otherwise of corporate management. These results are consistent, moreover, with those of Goldstein and Kavajecz (2004).

Our findings are also consistent with those of Stulz (1999, 28-29) who wrote, "it is not the case, however, that all effects of globalisation necessarily increase the monitoring of management in the short run. The reason for this is that globalisation can disrupt existing relationships within a country that led the monitoring of management or large shareholders." His observations were based upon a close analysis of the circumstances when Japanese banks relaxed the standards used to assess domestic debt offerings in the face of competition from foreign banks. He goes on to suggest "in the case of Japan, therefore, globalisation in the short run reduced the power of banks, but did not replace that power by the power of the market." The Ahold case exposed investors to a series of risks that may have been well-handled in Anglo-American markets with experience in assessing corporate earnings statements and related strategies but were poorly handled by Dutch analysts who had neither the experience nor, perhaps, the independence of judgment necessary to be critical of popular corporate officials. Cross-listing on the NYSE did not add to market information; in fact, New York followed Amsterdam prices when circumstances began to spin out of control.

The Ahold case reminds us that whatever the significance of globalisation in terms of corporate strategy, the nation-state retains a crucial role in setting the terms and conditions of corporate governance. In the European case, where pressures have been brought to bear to discount the power of majority investors, Becht, Bolton, and Röell (2003, 114) concluded their survey of European corporate governance and control noting, "limiting the power of large investors can also result in greater managerial discretion and scope for abuse". Here, there are two options. Europe could continue along the path of *de facto* inter-jurisdictional competition, using the UK and the US as reference points for incremental reform on the basis of country-specific corporate governance problems. To do so would be to hope that the lure of global capital markets combined with the power of institutional investors will be sufficient to prompt Europe's largest firms to improve their governance regimes. Alternatively, a pan-European regulatory regime could be established in favour of the interests of national and international portfolio investors. Either way, it would be added to corporate managers' responsibilities. This "solution" is an issue of political economy that would put in play national regimes of accumulation and the relationships between

competing claimants for corporate income such that “national models” may have to be jettisoned in favour of the Anglo-American model (Dore 2000).

Finally, the Ahold case could be thought as an instance of what Clark and Hebb (2004) refer to as “pension fund corporate engagement”: an instance where major institutional investors intervened directly with the firm to force-through reform in the interests of preserving value and (perhaps) enhancing stock market performance. It seems that domestic and EU regulatory agencies came last to the Ahold crisis; legal proceedings have been instituted to assess the liability of auditors and the like. But the swiftest response to the crisis came from those with the biggest (albeit now small) ownership stakes in the firm. And consistent with the interests of minority investors, the “reforms” undertaken sought to improve the capacity of those investors to assess public information about current circumstances and prospects. This is not unlike the impact that institutional investors have had on Royal Dutch/Shell, and the pressures on that company to improve their internal accountability and external transparency. In effect, Dutch standards of corporate governance have been dramatically improved through the actions of institutional investors, acting in ways consistent with their role as “universal owners” (Hawley and Williams 2005).

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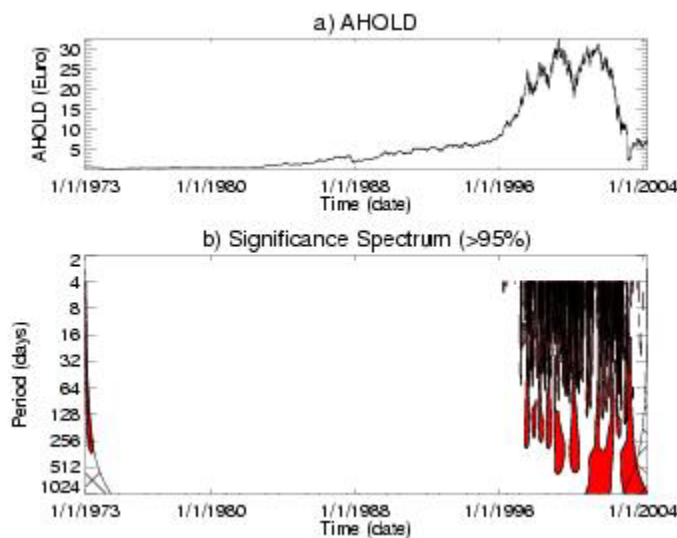
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Figure 1. The historical stock market price of Ahold as listed in Amsterdam and its wavelet significance spectrum



Source: Authors' calculations based on data provided by CSFB, London.

Table 1. Daily absolute basis point changes for Ahold stock price (Amsterdam) and AEX Index

Period	I-III	I	I'	II	III
Ahold	02/01/73 - 22/03/04	02/01/73 - 24/02/97	13/10/92 - 24/02/97	25/02/97 - 21/02/03	22/02/03 - 22/03/04
N	8145	6300	1140	1564	281
Mean	124	104	86	170	304
Median	73	57	65	121	218
Std. Deviation	173	139	81	171	476
Kurtosis	213.2	11.7	5.3	7.8	92.9
Skewness	8.0	2.5	1.9	2.2	8.1
Minimum	0	0	0	0	0
Maximum	6297	1623	587	1456	6297

	I'-III	I	I'	II	III
AEX Index	13/10/92 - 22/03/04	N/A	13/10/92 - 24/02/97	25/02/97 - 21/02/03	22/02/03 - 22/03/04
N	2902		1108	1519	275
Mean	99		57	125	131
Median	70		47	94	93
Std. Deviation	103		46	116	131
Kurtosis	9		2	4	9
Skewness	2		1	2	2
Minimum	0		0	0	1
Maximum	998		254	774	998

Note: The Ahold means for periods II and III are significantly different at 1% level from the Ahold mean for I-III; the AEX means for periods I, II and III are significantly different at 1% level from the AEX mean for I-III; the Ahold means for periods I, II and III are significantly different at 1% level from the AEX means for periods I, II, and III respectively.

Source: Authors' calculations based on data provided by CSFB, London

Table 2. Granger test results

Period		F-test statistic								AMS NYSE	
		alpha p-value	beta p-value	gamma p-value	delta p-value	AMS	NYSE				
31/12/93 - 22/03/04	~I'-III	0.91	0.00	0.08	0.00	0.36	0.00	0.75	0.00	14.2	3826.0
31/12/93 - 24/02/97	~I'	0.95	0.00	0.04	0.03	0.71	0.00	0.35	0.00	5.0	279.9
25/02/97 - 21/02/03	II	0.75	0.00	0.21	0.00	0.14	0.00	1.02	0.00	22.4	6321.5
22/02/03 - 22/03/04	III	1.02	0.00	-0.05	0.30	0.56	0.52	0.48	0.00	1.1	200.8

Note: "~I" means that this period of time corresponds approximately with period I' in table 1

Source: Authors' calculations based on CSFB data.

Table 3. Deminor ratings for Ahold compared to median ratings of FTSE Eurotop 300 firms

	2003					Change in ratings 2003-2000				
	Dutch firms		Continental firms		All firms	Dutch firms		Continental firms		All firms
	Ahold	retail	retail	European	Ahold	retail	retail	European	Ahold	retail
N	1	19	7	194	283	1	16	6	135	193
Total rating	15.0	17.6	17.2	18.3	21.1	2.3	4.7	2.2	3.3	2.8
Shareholders' rights&duties	3.7	5.2	6.1	6.2	6.5	-0.2	0.8	-0.2	0.0	0.4
Take-over defences	1.0	1.0	0.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0
Disclosure	6.4	6.7	6.4	6.3	6.9	1.7	1.9	2.0	2.3	1.9
Board structure & functioning	3.9	5.0	5.1	4.6	5.6	0.8	1.4	0.4	1.1	0.8

Source: Authors' calculations based on data provided by Deminor

Appendix 1: Major criteria considered within the Deminor corporate governance rating categories (based on Deminor, 2003)

Shareholders' rights and duties. The major criterion concerns the respect of the one-share one-vote one-dividend principle, the violation of which implies that some shareholders are privileged over others. It is also important whether there are procedures in place to make voting easy for shareholders. Other criteria include shareholders' rights to propose items to be considered at the Annual General Meeting, attendance rates at the Annual General Meetings and whether existing shareholders maintain pre-emptive rights.

Take-over defences. Involves the presence and the strength of devices that could be used to protect the company from a hostile take-over. Some of them result from the ownership structure. A majority shareholder for example makes a take-over impossible unless it is agreed with them, irrespective of the interests of minority shareholders. Other devices making a take-over impossible or unattractive to a hostile-bidder include management or board members making themselves impossible to dismiss (board and management insulation) or dismissible only after a hefty payment (golden parachutes).

Disclosure. Analyses the transparency of a corporation measured by the quantity and quality of non-financial information on its governance structure, including the shareholder structure, the composition and functioning of the board, availability of documents in English, accounting standards, and environmental information. Other criteria include information on executive and board remuneration, stock options, as well as the rotation and fees of auditors.

Board structure and functioning. The major factor refers to the composition of the board. The board should include members who are independent from both the company management and major shareholders. Board members should be experienced and have a diverse background, and the same person should not take the positions of the chairman of the board and the chief executive officer. Board members should meet frequently and their work should be well organised. Other criteria consider the election and the remuneration of the board.