Momentum Returns and Corporate Governance

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Abstract

We hypothesize that corporate governance affects, first, how a firm is perceived by investors in terms of risk, transparency, and valuation and, second, investors' decisions to buy/sell past winning/losing stocks during good and bad times. Implementing momentum strategies on portfolios of US stocks with different corporate governance scores demonstrate that past winners and losers with weak shareholder rights exhibit significant positive excess returns during expansionary and recessionary periods, respectively. This is consistent with the return behavior of winners and losers when momentum is applied across all stocks. Overall, investors are less (more) reluctant to sell (buy) losing (winning) stocks of weak compared to strong shareholder rights companies. Results show that stocks with weak shareholder rights may be less informationally efficient and subject to biased valuations.

Keywords: corporate governance; shareholder rights; momentum; portfolio returns

JEL classification: G11, G12, G30, G40, G41, O16

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1 Introduction

The momentum anomaly has challenged the efficient market hypothesis for years, while scholars have extensively investigated momentum profits and its sources across different markets (Asness et al., 2013; Avramov et al., 2007; Hong and Stein, 1999; Hong et al., 2000; Jegadeesh and Titman, 1993). The literature on momentum is broadly divided into two schools of thought. The first believes that momentum profits are based on behavioral biases in the buying and selling decisions of market participants (Barberis et al., 1998; Daniel et al., 1997; Hong and Stein, 1999; Hong et al., 2000; Verardo, 2009).[1] The second considers that the source of momentum profits is risk-based factors (Chordia and Shivakumar, 2002; Liu and Zhang, 2008; Bandarchuk and Hilscher, 2013; Kelly et al., 2021).[2]

Gompers et al. (2003) demonstrated that companies with strong shareholder rights (measured by the corporate governance index) yield higher returns than companies with restricted rights.[3] Furthermore, corporate governance is correlated with firm value and future returns, which makes it a relevant variable in the momentum literature. This study aimed to examine the effect of corporate governance, as proxied by an index that captures multiple firm-specific characteristics, on predicting a momentum portfolio's future returns. We used the dataset of Gompers et al. (2003), which covered the period from 1990 to 2007, and assigned a corporate governance score (G-index) from 1 to 24 to each stock, indicating the number of provisions either restricting shareholder rights or increasing managerial power. This study contributes new empirical evidence on corporate governance and momentum returns by investigating the relationship between strong/weak shareholder rights and investor decisions to buy/sell past winners and losers. The analysis focused on stocks with a corporate governance score of five or less, that is, democratic or strongest-rights companies, and stocks with a score of 14 and above, that is, dictatorship or weakest-rights companies. This study applied a momentum strategy separately on firms with strong and weak shareholder rights to measure the impact of corporate governance on momentum returns and analyzed different market states, such as expansionary and recessionary periods. Importantly, we applied a momentum strategy on all companies with a corporate governance score to establish the existence of momentum returns on the overall market from 1990 to 2007.

This study demonstrated that corporate governance, in terms of shareholder rights and anti-takeover vulnerability, affected strongly momentum returns. For stocks with a dictatorship corporate governance structure (G14), past winners and losers produced positive and significant excess returns during expansionary and recessionary periods, respectively. This

result was consistent with the return behavior of winners and losers when the momentum strategy was applied across all companies with a corporate governance score.[4] The mispricing of G14 stocks could be attributed to the fact that companies with weak shareholder rights or strong antitakeover mechanism (G14) are less transparent, hard to value and riskier. For the five-portfolio sort, market momentum performance resembles more closely the return performance of G14 stocks compared to G5 ones, and revealed that investors are more (less) hesitant to buy (sell) G14 winners (losers) compared to G5 winners (losers) during expansionary (recessionary) periods. Among extreme winners and losers (10-portfolio sort), G14 winners produced negative and significant alphas in the expansionary period, indicating that investors were increasingly reluctant to buy extreme past winners in the G14 (dictatorship) category, often underperforming the benchmark when adjusted for risk, while extreme G5 losers generated positive and significant (5FF) alphas during the recessionary period. For the ten-portfolio sort, market momentum performance is more aligned to the return performance of G5 compared to G14 stocks; however, the return significance of G5 stocks was much lower. The 10-portfolio sort results demonstrated that the excess return performance of past winners/losers with weak shareholder rights (G14) was different to the performance of the overall market's past winners/losers, showcasing that corporate governance and extreme past performance influenced profoundly investors' decisions to buy (sell) past winning (losing) stocks.[5] For the 10-portfolio sort, corporate governance score is monotonically increasing the frequency of underperforming stocks as we move from strong to weak shareholder right companies. Overall, the corporate governance score had an impact on how a firm is perceived by investors in terms of risk, transparency, and valuation and, eventually, on investors' decisions to buy and sell stocks during good and bad times. This result is consistent with studies that link better corporate governance with reduced information asymmetry (Dumitrescu and Zakriya, 2022; Derrien and Kecskés, 2013; Hong et al., 2000), increased information disclosure (Bushman and Smith, 2001; Healy and Palepu, 2001; Lang and Lundholm, 1996) and increased informational efficiency of stock prices (Boehmer and Kelley, 2009; Chung et al., 2010; Lee et al., 2016)

The remainder of the paper is structured as follows. Section 2 summarizes the existing relevant literature. Section 3 explains the theoretical framework of the study and the research question. Section 4 details the dataset and methodology used in the empirical analysis, while Section 5 presents the empirical results, and Section 6 concludes the paper.

2 Background

2.1 Sources of momentum profits

Momentum refers to a pattern in the market in which prices that have been moving in one direction continue to do so in the short term (Jegadeesh and Titman, 1993). A momentum trading strategy buys (long) previous winners, sells (short) previous losers, and holds that portfolio for a period of time – generally six months.[6] Although momentum was established to be higher in small-size firms (Fama and French, 2016), studies using the model from Banz (1981) demonstrated that it does appear in mid- to large-size firms (Fama and French, 2012; Rouwenhorst, 1998). Moreover, even after controlling for firm-specific characteristics, momentum returns appeared to be significant (Lui et al., 1999). Other determinants of momentum profits are macroeconomic risk factors (Griffin et al., 2003), country-level individualism (Chui et al., 2010), and market states (Cooper et al., 2004). Furthermore, there is evidence that industry momentum accounts for much of the profits generated by the traditional momentum strategy (Moskowitz and Grinblatt, 1999).

Momentum profits could also be related to firm-specific factors. Sagi and Seasholes (2007) indicated that companies with high revenue growth volatility, low costs, and valuable growth options outperform the traditional momentum strategy by 5% per year. Other sets of firm-specific attributes such as firm size, poor performance, and higher trading costs are also associated with momentum profits (Lesmond et al., 2004). One firm-specific attribution that has generated a great deal of attention is a company's credit rating. Avramov et al. (2007) showed that firms with low credit ratings have a positive relationship with momentum after controlling for return distribution, overall momentum profits, industry momentum, size, and risk factors.[7] Furthermore, Avramov et al. (2016) observed that the momentum strategy generates large (weak) profits in liquid (illiquid) market states, which contrasts with the idea that momentum profits reflect changes in arbitrage constraints. Hong and Stein (1999) hypothesized that, as underreaction drives momentum, information diffusion should significantly affect momentum profits. They found that when information diffuses gradually (measured by firm size and analyst coverage), underreaction appears to be significant, thus leading to higher momentum returns in the market.[8] Momentum is affected not only by the gradual diffusion of information but also by the pace of information diffusion (Andrei and Cujean, 2017).

2.2 Corporate governance and stock market prices

Better-governed firms make more informative disclosures (Beekes and Brown, 2006). Lang and Lundholm (1996) show that more informative disclosure policies have a larger analyst following and more accurate analyst earnings forecasts which can potentially lead to less information asymmetry and lower cost of capital.[9] Lee et al. (2016) showed that better governance structures lead to higher information efficiency of prices by improving the speed and extent of corporate information disclosures. Moreover, Klapper and Love (2004) showed that better corporate governance is highly correlated with better operating performance and market valuation. Additionally, good corporate governance enhances market liquidity and decreases information-based trading (as with momentum trading) (Chung et al., 2010).

Studies have shown that buying companies with strong corporate governance and shorting companies with weak corporate governance can yield 8.5% returns annually (Gompers et al., 2003).[10] Ferreira and Laux (2007) found that firms with fewer anti-takeover provisions display higher levels of idiosyncratic risk, trading activity, private information flow, and information about future earnings in stock prices. Corporate governance could affect the profitability of momentum strategies by reducing information asymmetry (Derrien and Kecskés, 2013; Hong et al., 2000), increasing information disclosure (Bushman and Smith, 2001; Healy and Palepu, 2001; Lang and Lundholm, 1996), and influencing the informational efficiency of stock prices (Boehmer and Kelley, 2009; Chung et al., 2010; Lee et al., 2016). Corporate governance also affects market efficiency by minimizing insider abnormal profits (Cai et al., 2006). However, positive abnormal returns are associated with large firms that are not fully compliant with the rules of corporate governance (US stock exchange regulations), which has a significant impact on firm value (Vidhi and Yaniv, 2007). This implies that companies not in compliance with the rules of corporate governance are less informationally efficient regarding security prices. Researchers have shown that firms with strong corporate governance have higher credit ratings (Ashbaugh-Skaife, Collins, and LaFond, 2006; Weber, 2006). This is not trivial; momentum profits can be explained by a firm's credit rating, as they have a negative relationship with credit ratings (Avramov et al., 2007). Finally, Cuervo (2002) argues that it is necessary to promote the functioning of the market for corporate control to facilitate the achievement of efficient corporate governance in the face of core shareholders and managerial defence measures that limit the achievement of maximization of firm value.[11]

3 Research hypothesis

Market efficiency has a negative relationship with momentum returns because increased efficiency in financial markets makes it difficult for investors to benefit from a momentum trading strategy. The literature also confirms the existence of a positive relationship between corporate governance and information diffusion (Chou and Shiah-Hou, 2010; Kanagaretnam et al., 2007). More, a greater focus on corporate governance contributes to a higher likelihood that asset prices fully reflect all available information (Derrien and Kecskés, 2013; Dumitrescu and Zakriya, 2022; Hong et al., 2000). Therefore, a positive relationship between corporate governance and market efficiency is predicted.

Gompers et al. (2003) report a strong and significant negative relation between firm performance and the G index. Particularly, they document that firms with a low G index score outperform firms with a high G index by an abnormal stock return of 8.5%. One popular explanation is that antitakeover provisions harm shareholders by exacerbating agency costs between managers and shareholders.[12] Cremers, Nair, and John (2009) argue that an exposure to takeovers is a source of systematic risk. They account for this risk by including a "takeover" factor in the asset pricing model, measured as the difference between the returns on high and low takeover likelihood stock portfolios. They find that the excess returns documented by Gompers et al. largely disappear when the takeover factor augments the traditional asset pricing model. Bebchuk et al. (2009) suggested an entrenchment index based on six provisions and found that increases in the index level are monotonically associated with economically significant reductions in firm valuation as well as large negative abnormal returns during the 1990–2003 period.[13] Chen et al. (2011) showed that firms with more antitakeover provisions have higher implied cost of equity (positive relation) after controlling for risk factors, price momentum, analysts' forecast biases, and industry and year effects. Further, their results support the hypothesis that strong shareholder rights reduce the cost of equity by mitigating agency problems from free cash flows.

Ferreira and Laux (2007) provide results consistent with the view that antitakeover provisions hinder the flow of private information to stock prices, making the stocks of firms with more provisions less efficient and, thus, more risky.[14] Companies with different shareholder rights and/or antitakeover provisions may have different degrees of information disclosure and transparency, which, in turn, affects investors' valuation beliefs and decision to buy (sell) past winners (losers). Also, stocks with weak shareholder rights or corporate governance structure (G14) may be perceived as riskier due to higher cost of equity capital and

overinvestment (mitigate agency problems using free cash flows). Thus, strong shareholder rights reduce the likelihood that investors could earn abnormal returns from a momentum strategy. In other words, investors are expected to be more (less) reluctant to buy (sell) G14 winners (losers) when further good (bad) news arrives in the market, leading G14 stocks more often to mispricing (significant negative/positive alphas). Finally, trust is likely to have an impact on stock market participation and the disposition effect (Guiso et al., 2008; Pevzner et al. 2015; Li et al, 2020).[15] If performance reports and news are considered more credible, it will prompt stronger reactions by investors (high flow-performance sensitivity), which mitigates the tendency to sell winners and hold onto losers. On the other hand, trust is known to reduce concerns about expropriation by corporate insiders and, thus, makes investors worry to a lesser extent about agency issues and react less promptly to negative news (low flow-performance sensitivity). In this case, a higher level of trust will enhance the disposition effect. Accordingly, if investors consider performance related news of stocks with weak shareholder right (G14) as less credible, we expect a stronger disposition effect for the same stocks.[16]

This study examined the impact of corporate governance on momentum (as well as winner and loser) portfolio returns (for all stocks with a corporate governance score) and whether these returns were explained by commonly known risk factors, such as market, size, value, profitability, and investment. The relationship between corporate governance scores and momentum returns was determined by investigating winner and loser portfolio return continuations and reversals for stocks with strong (G5) and weak (G14) shareholder rights. Given the existing empirical evidence that momentum returns are more pronounced during expansionary than recessionary periods, winner and loser portfolio returns during different market states were also examined (Cooper et al., 2004).

4 Data and methodology

4.1 Data

This study's data on corporate governance of US companies were based on the dataset compiled by Gompers et al. (2003) covering the time period from 1990 to 2007. The governance score, which measured the level of firms' corporate governance, was based on 24 different provisions that either restrict shareholder rights or increase managerial power.[17] The G-index variable was constructed as an equally weighted index based on the 24 different provisions. Given that all variables have a negative sentiment to them, a high G-index score indicated that a company has in place devices that provide managerial protection by restricting

shareholder power to change charter provisions, to call for a shareholder meeting, or to overrule the management during a takeover attempt (low level of takeover vulnerability or "dictatorship" structure). A company with a low G-index score was categorized as one with a high level of takeover vulnerability (small number of anti-takeover provisions) or a "democracy" structure. Monthly stock return data (RET) were collected from the Center of Research for Stock Prices (CRSP) for all companies with a G-index score in Gompers et al. (2003). Due to the limitations of the G-index data, this study was limited to matching the time period of the governance score data.[18]

The Gompers et al. (2003) dataset have been used and analyzed by many researchers. For space considerations, we just outline a few key findings from the descriptive statistics of Gompers et al. (2003). The corporate governance (G) index was positively correlated with S&P 500 inclusion, size, share price, trading volume, and institutional ownership. The correlation of G index with five-year sales growth was negative and significant. Moreover, about half of the dictatorship portfolio was drawn from S&P 500 firms compared with 15 percent of the democracy portfolio. Finally, the dictatorship and democratic portfolios were similarly dispersed in terms of different industries. Overall, firms with weaker shareholder rights tend to be large S&P firms with relatively high share prices, institutional ownership and trading volume, and relatively poor sales growth. Finally, the number of stocks included in the winner/loser portfolios over time range from 30 (15) to 24 (12) for the 'democracy' portfolio and from 16 (8) to 14 (7) for the 'dictatorship' portfolio in the 5(10)-portfolio sort case. However, when all companies with a G-index score are considered (market momentum), the number of stocks included in the winner/loser portfolios range from 305 (153) to 281 (140) in the 5(10)-portfolio sort case.

4.2 Methodology

The momentum portfolio creation followed Jegadeesh and Titman (1993). The momentum strategy used an overlapping portfolio, whereby in any given month t, the strategy held a series of portfolios that had been selected in the current month as well as portfolios in $K-1$ months (K holding periods). Returns were observed from time t to $t-J$ (J observation periods). In a given month t, all companies were ranked based on their previous returns. As many as five (ten) portfolios were formed based on quantiles (deciles), where P5 (P10) was the top 20% (10%) of all companies ranked based on their average past returns and P1 was the lowest 20% (10%) of all companies ranked based on the same metric. The momentum strategy observed stocks for three, six, nine, or twelve months before selecting them and then held them for three,

six, nine, or twelve months, resulting in a total of 16 different strategies. The same strategy was repeated each month to create overlapping portfolios. The monthly momentum return was the equally weighted return across all monthly overlapping portfolios.

To examine whether the level of corporate governance affected investor decisions to buy winners and sell losers, the momentum strategy was modified based on the G-index score. First, all companies were ranked based on their corporate governance score. Then, the momentum strategy was applied separately for those with a governance score of 14 or above [the dictatorship or weakest-rights companies (G14)] and those with a score of 5 or below [the democratic or strongest-rights companies (G5)]. At time t, stocks were observed for the previous J months, and G14 and G5 stocks were ranked based on the average past return performance over the same period. Five (ten) portfolios were created, one for each quantile (decile). Stocks were assigned to portfolios, with the top quantile (decile) referred to as the winner portfolio and the bottom quantile (decile) as the loser portfolio. The momentum strategy bought (long) the winner portfolio and sold (short) the loser portfolio. The same strategy was repeated at the beginning of each month t until the end of the sample window. Aggregate returns were the average returns for the periods. To investigate whether momentum portfolio returns and winner/loser portfolio returns were explained by exposure to commonly known risk factors, returns were regressed on the three- and five-factor models (Fama and French, 2016).

5 Empirical analysis

The momentum of the overall market and momentum of stocks with different corporate governance levels were analyzed. Two major time periods were examined, an expansionary (1990–1999) and a recessionary (2000–2004) period, to assess the impact of market states or trends on the momentum strategy (see online appendix for overall period results). Finally, the effect of risk factors on corporate governance momentum returns was investigated for each period.

5.1 Expansionary period (1990–1999)

5.1.1 Market momentum

A market momentum (all companies with a corporate governance score) strategy during the expansionary period and across different observation/holding periods and portfolio partitions (5,10) was considered. In summary, extreme winners and losers contributed more to

the overall momentum, with the ten-portfolio partition showing higher momentum returns than the five-portfolio partition. In addition, market momentum returns (for all companies with G-index score) increased when the observation and holding periods increased up to 12 months. These findings are consistent with those of Jegadeesh and Titman (1993).

Panel A of Table 1 reports momentum returns for the five-portfolio partition. Of the 16 different momentum strategies, 14 exhibited positive returns. The 12-on-3 strategy produced the highest momentum returns (9.96% annual return), while the 3-on-3 strategy produced the lowest momentum returns (-2.02% annual return). Momentum returns were driven by winner portfolios return continuations and increased at longer observation/holding periods. Although the five-portfolio momentum generated positive returns, these were mainly explained by the risk factor models. Regressing winner and loser portfolios separately produced a better understanding of the results (see Table 2). Winner portfolios generated positive and significant alphas, whereas loser portfolios produced negative and insignificant alphas. This indicated that the risk factors overexplained the reversing returns of loser portfolios.

(Insert Table 1)

Next, the analysis looks at momentum based on the ten-portfolio partition (Table 1, Panel B). This classification is focused on the most extreme winners and losers in the market. Concentrating on extreme stocks, the analysis demonstrated that all 16 strategies generated positive momentum returns that were significantly higher than five-portfolio ones. The lowest returns (1.22% annual return) were for the 3-on-3 strategy, and the highest (12.48%) were for the 9-on-6 strategy. Similarly, the winner portfolio return continuation was the main driver of momentum returns, while the loser portfolio reversal attenuated momentum returns. Risk factors explained momentum returns when regressed on the three- and five-factor models. Regressing winner and loser portfolios separately, winner portfolios exhibited positive significant alphas, while loser portfolios exhibited again negative and insignificant alphas (Table 2).[19]

(Insert Table 2)

5.1.2 Corporate governance momentum

A momentum strategy was implemented by corporate governance (G-index) score and aimed to examine whether weak or strong shareholder rights influenced investor decisions to buy (sell) winning (losing) stocks in the market.

5.1.2.1 Strong shareholder rights (G5)

Panel A of Table 3 presents portfolio momentum returns for the two G-index scores and observation/holding periods ranging from 3 to 12 months. First, momentum returns were examined for strong shareholder rights (democratic) companies (G5) and a five-portfolio sort. The results demonstrated that 14 out of 16 tested momentum strategies generated positive returns. Momentum returns seemed to increase (decrease) at longer observation (holding) periods. The highest momentum return (12.3% annually) was observed on the 12-on-3 strategy, while the lowest return (-3.9%) was observed om the 3-on-3 strategy. Overall, past winners continued to win, and past losers strongly reversed over the holding period. As a momentum strategy buys the winner and shorts the loser, strong winning continuation offsets the losses from the losing portfolio reversal and results in positive momentum returns. Regressing momentum returns of strong shareholder rights companies (G5) on the three- and five-factor models generated positive but insignificant alphas (see Table 4 Panels A and B). However, examining winner and loser portfolios separately, winner portfolios generated positive significant alphas mainly for strategies 9-on-3, 9-on-6, 9-on-9, and 12-on-3, while loser portfolios generated uniformly negative and insignificant alphas. The highest 3 (5) FF alpha was found on the 12-on-3 strategy at 0.0064 (0.0067). In summary, all of the winner portfolios generated positive alphas; however, only a small number of those alphas were significant.

(Insert Table 3)

The results, reported in Table 3 Panel B, demonstrated that implementing a ten-portfolio momentum strategy for G5 companies would yield similar momentum returns to those of the five-portfolio momentum (again, 14 out of 16 strategies yielded positive momentum returns). The lowest (highest) momentum returns were -3.4% (11.3%) and were observed when implementing the 3- (9-) on-3 (6) strategy. Likewise, winner portfolios continued to win, whereas loser portfolios reversed. In particular, there was a strong continuation in the winning stock returns as the observation period increased and the holding period remained relatively short (3 to 6 months). Loser portfolios reversed more strongly for longer observation and holding periods (for instance, the 9-on-12 and 12-on-12 strategies). Positive returns on the momentum strategy were driven by return continuation of winner portfolios, whereas losers' reversals reduced momentum returns. Even though momentum strategies yielded positive returns, regressing their returns on the three- and five-factor models generated slightly positive (7 out of 16) or slightly negative (9 out of 16) insignificant alphas. Momentum returns were

largely explained by the Fama and French risk factors (see Table 4 Panels C and D). Regressing the winner and loser portfolios individually, winner portfolios generated positive significant alphas mainly for the 9-on-3 and 9-on-6 strategies, while loser portfolios still produced negative and insignificant alphas. The highest three- (five-) factor alpha was observed when implementing the 9-on-3 strategy at 0.0079 (0.0093). Overall, the ten-portfolio sort generated higher winning portfolio gains and losing portfolio reversals compared to the five-portfolio sort, and thus led to insignificant differences in momentum returns between the two portfolio sorts.

5.1.2.2 Weak shareholder rights (G14)

Further, we analyzed momentum returns among weak shareholder rights companies (G14) for the five-portfolio sort. As many as 13 out of 16 momentum strategies yielded positive returns. The highest return (7.3%) was exhibited by the 9-on-6 strategy, and the lowest (-2.5%) was exhibited by the 3-on-3 strategy. Similar to the G5 stocks, G14 winners continued to win, while G14 losers exhibited strong reversals, which reduced momentum returns significantly. Winner portfolios continued to win as the observation period increased without losing strength when the holding period extended to 6, 9, and 12 months. Loser portfolio reversal decreased (increased) slightly as the observation period increased and for holding periods of 3 (9) to 6 (12) months. Momentum returns were driven by the strong continuation of winner portfolios. However, they were much smaller in size due to strong reversal of the G14 compared to G5 losing stocks. When momentum returns (of the G14 stocks and the five-portfolio sort) were regressed on the three- and five-factor models, insignificant alphas were observed across all observation/holding periods (only the 12-on-12 strategy showing a negative significant alpha). In addition, winner portfolios exhibited positive significant alphas, which were highest between observation and holding periods of six and nine months. Loser portfolios, instead, yielded (positive) insignificant alphas in all 16 strategies.

The ten-portfolio sort focused on the most extreme winner and loser G14 stocks on the market. All 16 strategies generated negative returns. These negative momentum returns were driven by the strong reversal of loser portfolios, offsetting any continuation of winner portfolios. In some cases, such as the 3-on-3 and 6-on-3 strategies, the losing portfolio (reversing) returns were more than twice the winner portfolio returns. Winning stock return continuation was not affected by the holding/observation period, while it was significantly smaller in size compared to the returns of the G5 (strong shareholder rights) winning stocks. G14 (extreme) losing stocks reversed strongly at short holding periods, with the effect

asymmetrically decreasing as the observation and holding periods increased. Interestingly, G14 losing stocks reversed more strongly than G5 losing portfolios for short holding periods (3 to 6 months), while the opposite was true for longer holding periods (9 to 12 months). Investors were less reluctant to sell losing stocks with weak shareholder rights but more reluctant to sell losing stocks with strong shareholder rights. Although the strong reversal in loser portfolios offset the continuation of winner portfolios, the reversing returns were explained by the Fama-French risk factors, as they generated (positive) insignificant alphas. Finally, regressing winner portfolio returns on risk factors generated significant and negative alphas in most cases. The risk factors overexplained the returns of the (extreme) winner portfolios among the weak shareholder rights companies. One explanation for this is that investors' buying pressure for extreme G14 winners wore out quickly or simply that the same stocks were sold early due to fears of being highly mispriced or unable to recover the investment.

Overall, applying a five- and ten-portfolio momentum strategy to companies with strong (G5) and weak (G14) shareholder rights produced unique results. For the five-portfolio sort, G5 stocks generated higher momentum returns than G14 stocks due to the high reversing returns of G14 loser stocks. However, G14 winners produced higher returns and positive significant alphas more often than G5 winners. For the ten-portfolio sort (extreme winners and losers), G5 stocks produced significantly higher momentum returns than G14; however, it is the high continuing returns of G5 winning stocks (compared to G14 winners) and the high reversing returns of G14 losing stocks (compared to G5 losers) that caused this difference.[20]

(Insert Table 4)

5.1.3 Risk factor analysis and corporate governance

A momentum strategy applied to all stocks with a corporate governance score generated positive returns from 1990 to 1999 (expansionary period); however, these returns were mainly explained by the Fama-French three and five risk factors. A momentum strategy applied separately to stocks with weak (G14) and strong (G5) shareholder rights produced results that were novel. First, companies with strong shareholder rights (G5) generated positive (and insignificant) momentum (excess) returns. G5 winners continued to win and produced significant positive alphas mainly at intermediate horizons (for both the five- and ten-portfolio sorts). In addition, G5 winners loaded positively and significantly only on the market and size factors. G5 losers reversed over the holding period; however, their alphas were insignificant. In terms of the risk factor exposure, G5 reversing returns loaded strongly on the size and

investment factors. Investors on the winning side chose G5 stocks of small size, while, on the losing side, they oversold stocks of small size and low investment. Second, companies with weak shareholder rights (G14) generated positive/negative but insignificant momentum excess returns. G14 winners continued to win and produce significant positive alphas more often at intermediate horizons (for both the five- and ten-portfolio sorts). Moreover, G14 winners loaded positively and significantly on the market, size, value, and profitability factors. G14 losers reversed over the holding period; however, their alphas were insignificant. Furthermore, the G14 reversing returns did not overload on the market, size, value, or investment factors, although the effects were positive and significant. It is important to note that on the winning side, investors chose G14 stocks of value (high B/M ratio) and profitability, whereas on the losing side, they did not oversell stocks with a particular risk characteristic. Furthermore, despite similar exposures of G5 and G14 winners to the market and size risks, when tested against the three-factor model, G14 stocks were more frequently mispriced. Therefore, corporate governance (or shareholder rights as a characteristic) was a candidate for explaining excess returns. Finally, compared to the G5 category, the high reversing returns of the G14 category revealed that investors disproportionally and more aggressively sold G14 stocks compared to G5 stocks, while their risk factor exposure indicated that they did not pay extra attention to commonly known characteristics, such as size, value, and investment (see appendix for detailed discussion, results available upon request).

Overall, the results here show that a momentum strategy among stocks with strong shareholder rights (G5) produces higher momentum returns than stocks with weak shareholder rights (G14); however, excess momentum returns are insignificant for both categories. We can't draw an immediate comparison with the result of Gompers et al. 2003 as we focus on the performance of past winners and losers.[21] However, a novel and important result of this study is that, during an expansionary period, past winners with weak shareholder rights (G14) produce positive and significant excess returns more often than past winners with strong shareholder rights (G5). Investors are more hesitant to buy winning stocks with weak shareholder rights compared to strong ones; this result is consistent with stronger disposition effect among stocks that are less transparent, hard to value and have strong antitakeover provisions.

5.2 Recessionary period (2000–2004)

5.2.1 Market momentum

Establishing the relationship between a company's shareholder rights and momentum strategy requires testing in different market states. The previous section analyzed an expansionary period, whereas this section repeats the analysis while focusing on the recessionary period from January 2000 to December 2003.

The results for the five-portfolio sort demonstrated that all 16 strategies exhibited negative momentum returns (see Table 5, Panel A). Momentum decreased further at longer periods. The lowest (highest) momentum was for the 12- (3) on-6 (3) strategy, yielding a negative -13% (-3%) annual return. Separating winner and loser portfolios, loser portfolios always reversed. The reversal increased as the observation period increased, indicating that the losing stocks experienced increased selling pressure over the same period. Bad news regarding losing stocks, especially during recessionary (or low-sentiment) periods, amplified their sale, leading to mispricing of the stocks. Mispricing was corrected eventually during the holding period. Winner portfolios continued to win; however, their returns decreased as the observation/holding periods increased. Good news for winning stocks diffused slowly during the recessionary period (cognitive dissonance effect, Antoniou et al. 2013), while the gradual decline in the buying pressure during the holding period was consistent with a delayed price reaction.

(Insert Table 5)

During recessionary periods, winner stocks continued to win at a decreasing rate as the observation/holding period increased, and loser stocks reversed at an increasing rate as the observation period increased. In other words, among losing stocks, significant selling pressure was prevalent during the formation period, which turned into buying pressure during the holding period. Among winners, the buying pressure gradually declined over the holding period, while the buying (selling) pressure increased (declined) over the formation period. When regressed on the three-factor model, winner portfolio returns were explained by risk factors (see the positive insignificant alphas in Table 6, Panel A). However, loser portfolio returns produced positive significant alphas in nine of the 16 strategies in the three-factor model (at the 10% significance level). There were positive significant alphas for the longer observation and holding periods. For example, the 9-on-6 strategy produced the highest monthly alpha of 0.0161.

(Insert Table 6)

Table 6, Panel B reports the alphas from regressing momentum winner and loser returns on the five-factor model. Loser portfolio returns produced positive significant alphas in 9 (10) of the 16 strategies at the 5% (10%) significance level. All winner portfolio strategies had insignificant alphas during the recessionary period. Momentum returns (winner-loser) revealed a significant negative alpha in 9 of the 16 strategies. As momentum returns are usually stronger for extreme winning and losing stocks, the next analysis examined the ten-portfolio sort. As shown in Panel B of Table 5, all momentum strategies generated negative returns that were far more negative than in the five-portfolio sort. The highest negative momentum return of -21.3% was for the 12-on-6 strategy. Looking separately at winner and loser stocks, loser stocks reversed strongly as the observation period increased, while winners continued to win at a decreasing rate as the observation/holding period increased. As the losers' reversal was greater than the winners' continuation, there were negative momentum returns. Similar to the five-portfolio sort (and even stronger here), among losing stocks, significant selling pressure was dominant during the formation period, which turned into buying pressure during the holding period.

Table 6, Panels C and D report alphas from regressing (the ten-portfolio sort) momentum returns on the three- and five-factor models. Momentum portfolio returns generated negative alphas when regressed on the three- and five-factor models. As many as 9 of these 16 negative alphas were significant (at the 10% significance level). Winners generated positive insignificant alphas across all strategies. Losers generated positive significant alphas in 12 of 16 different observation and holding periods. The positive significant alphas indicated that loser returns could not be explained by the risk factors alone. In a down-trending market, further bad news on losing stocks applied extra selling pressure during the formation period, which turned into buying pressure and strong reversal during the holding period. Overall, implementing a momentum strategy during a recession period generated negative returns, which were mainly driven by the strong reversing returns of loser portfolios and weak continuing returns of winner portfolios.

5.2.2 Corporate governance momentum

The analysis of corporate governance momentum returns and the extent to which risk factors could explain them is analyzed below the recessionary period.

(Insert Table 7)

5.2.2.1 Strong shareholder rights (G5)

Examining winners and losers separately, winner portfolios continued to win at a decreasing rate as the observation and holding periods increased. Loser portfolios demonstrated reversing returns that decreased at longer observation/holding periods. As winner continuation was greater than loser reversal, there were positive momentum returns. Regressing G5 stock momentum returns on the Fama-French factors produced insignificant alphas in all cases (Table 8, Panel A). Winner and loser portfolios generated positive insignificant alphas (only the 3-on-12 strategy winners produced a positive significant alpha at the 10% significance level). The same results held true when regressing momentum as well as loser and winner portfolio returns on the five-factor model (Table 6, Panel B).

(Insert Table 8)

In the ten-portfolio sort, momentum returns for G5 companies were mainly positive and larger than the five-portfolio sort (Table 7, Panel B). Momentum returns peaked for the 9-on-3 strategy with a 19.1% annual return but reached negative values for the 12-on-6, 12-on-9, and 12-on-12 strategies. Similarly, loser portfolio returns reversed at a diminishing rate as observation and holding periods increased, while winner portfolios exhibited continuation in returns that decreased at longer periods. The ten-portfolio sort for stocks with strong shareholder rights (G5) produced higher reversing (continuing) returns for loser (winner) stocks than the five-portfolio sort. However, at longer observation and holding periods such as 12-on-6, 12-on-9, and 12-on-12, loser portfolios produced reversing returns higher than the continuing returns of the winner portfolio, resulting in negative momentum returns. Running a regression of the (ten-portfolio sort) winner and loser portfolio returns on the three-factor model generated largely positive insignificant alphas with only three exceptions for winner portfolios (at the 10% significance level).

Momentum returns, however, had small negative or positive alphas of no significance (Table 8, Panel C). When regressed on the five-factor model, momentum returns largely had negative insignificant alphas; only the 12-on-12 strategy was significant (Table 8, Panel D). Winner portfolios had positive insignificant alphas (only the 6-on-6 strategy was positive and significant at the 10% level), while loser portfolios had positive significant alphas in 7 of the 16 different strategies (at the 10% significance level).[22] The strong reversing returns of the extreme G5 losing stocks could not be explained by the market, size, value, profitability, or investment factors for nearly half of the strategies.

5.2.2.2 Weak shareholder rights (G14)

The analysis of weak shareholder rights companies (G14) examined whether their portfolio returns had similar characteristics to strong shareholder rights companies (G5) during the recessionary period. Table 7, Panel A shows the results from the five-portfolio partition. Momentum returns were highly negative for weak shareholder rights companies. In particular, momentum for G14 companies ranged from -6% to -23% annual returns. Loser portfolios always reversed, and their reversal increased at longer observation and holding periods. Conversely, winner portfolios continued to win at a decreasing rate. As loser portfolios generated large reversing returns during the holding period, and winner portfolios produced weak continuing returns, the momentum returns were justifiably negative.

Selling pressure on G14 losing stocks was considerably higher than G5 losing stocks during the formation period, and consequently, any mispricing was corrected by strong buying pressure over the holding period for the same stocks. For example, the reversing returns of G14 losing stocks were almost three times larger than those of G5 stocks. During recessionary periods, investors were not reluctant to sell losing weak shareholder rights stocks, as they were harder to value (less transparent) in the case of further bad news, riskier, and could become more illiquid. When regressed on the three- (or five-) factor model, momentum portfolios generated negative significant alphas in ten of the 16 momentum strategies, concentrated on longer observation and holding periods (Table 8, Panel A). Winners generated positive insignificant alphas; however, loser portfolios produced positive significant alphas in 14 of the 16 strategies. Even when regressed on the five-factor model, the loser portfolios generated positive significant alphas in 12 of the 16 strategies (Table 8, Panel B). The results indicated that commonly known risk factors (market, size, value, profitability, and investment) could not explain the highly reversing returns of losing stocks with weak shareholder rights.

Table 7, Panel B shows results for the ten-portfolio partition among weak shareholder rights companies (G14) to examine the return characteristics of extreme winners and losers in terms of reversals and continuations. Momentum returns were negative across all observation and holding periods. The lowest momentum was observed when implementing the 12-on-6 strategy with -27.4% annual return. Similar to the five-portfolio sort, loser portfolio returns reversed strongly at an increasing (decreasing) rate with longer observation (holding) periods. Winner portfolios demonstrated a return continuation at a decreasing rate as the observation and holding periods increased. Among stocks with weak shareholder rights, the loser portfolio

reversal was significantly greater than the winner portfolio continuation. Momentum returns were negative.

During recessionary times, G14 losing stocks were under significant selling pressure over the formation period, which led to strong reversals across the holding period. Instead, G14 winning stocks were under selling (or weak buying) pressure across the formation period, which turned into delayed (and gradually declining) buying pressure over the holding period. Overall, investors were less (more) reluctant to sell (buy) losing (winning) stocks of weak shareholder rights companies compared to stocks of strong shareholder rights companies. Table 8, Panels C and D show the results from regressing momentum, loser, and winner returns of the G14 stocks on the three- and five-factor models. Momentum (winner-loser) portfolios had negative insignificant alphas in all strategies (at the 10% significance level). Moreover, extreme winner and loser portfolios of weak shareholder rights companies had positive insignificant alphas across all strategies. Commonly known risk factors (market, size, value, profitability, and investment) fully explain the strong (weak) reversing (continuing) returns of losing (winning) stocks with weak shareholder rights.

In summary, for the five-portfolio sort, G5 stocks generated higher momentum returns than G14 stocks due to the strongly reversing returns of G14 losing stocks (almost three times bigger) compared to G5 ones. Furthermore, the reversing returns of G14 losing stocks produced positive and significant three- and five-factor alphas in most cases. For the ten-portfolio sort (extreme winners and losers), G5 stocks produced significantly higher momentum returns than G14 stocks; however, it is the high continuing returns of G5 winning stocks (compared to G14 winners) and the high reversing returns of G14 losing stocks (compared to G5 losers) that caused this difference.

The separate analysis of winners and losers demonstrated that past winning stocks with weak shareholder rights (G14) gained considerably less compared to winning stocks with strong shareholder rights (G5), and they both largely produced positive insignificant alphas. Investors' buying pressure for extreme G14 winners weakened and were sold early due to fears of being highly overvalued or of not being able to recover the investment (riskier). G14 losing stocks reversed more strongly than G5 losing stocks across all strategies. In particular, investors more aggressively (and quickly) sold losing stocks with weak shareholder rights, but they were reluctant and slow to sell losing stocks with strong shareholder rights. Moreover, losing stocks with strong shareholder rights (G5) generated positive and significant five-factor alphas (in 7 of the 16 strategies) at longer observation/holding periods. In recessionary times, investors managed losing G5 stocks at odds with exposure to commonly known risk factors.

Overall, investors were less (more) reluctant to sell (buy) losing (winning) stocks of weak shareholder rights companies compared to stocks of strong shareholder rights companies.

5.2.3 Risk factor analysis and corporate governance

In summary, a momentum strategy applied to all stocks with a corporate governance score generated negative momentum returns from 2000 to 2004. These returns were overexplained (produced negative significant alphas) by the risk factors as the observation and holding periods increased. The momentum strategy was then applied separately to stocks with weak and strong shareholder rights. Companies with strong shareholder rights (G5) generated positive (and insignificant) momentum (excess) returns. G5 winners continued to win and produced insignificant positive alphas in most cases (for both the five- and ten-portfolio sorts). G5 winners loaded positively and significantly only on the market and size factors. G5 losers reversed over the holding period; however, their alphas were insignificant across all strategies. In terms of the risk factor exposure, G5 reversing returns loaded positively (negatively) and significantly on the market (profitability) factor for the five-portfolio sort and positively (negatively) and significantly on the value (profitability) factor for the ten-portfolio sort. On the winning side (and during recessionary periods), investors chose small G5 stocks with a high correlation with the market portfolio, while on the losing side, they oversold stocks with a high B/M ratio (value) and low profitability (see appendix for detailed discussion, results available upon request).

Companies with weak shareholder rights (G14) generated negative and significant momentum (excess) returns for the five-portfolio sort but negative and insignificant returns for the ten-portfolio sort. G14 winners continued to win and produced insignificant positive alphas across all strategies and portfolio partitions. G14 winners loaded positively and significantly on the market and size factors only. G14 losers reversed over the holding period, and their (positive) alphas were highly significant for longer observation/holding periods, particularly for the five-portfolio sort. Furthermore, for the five-portfolio sort, G14 reversing returns loaded significantly on the market, profitability, and investment factors, whereas for the ten-portfolio sort, extreme G14 losing stocks loaded significantly on only the market and size factors. On the winning side, investors chose G14 stocks of small size and high correlation with the market index, while on the losing side, they oversold stocks with low profitability, low investment, and high correlation with the market returns.

During the recessionary period, G14 losing stocks of the five-portfolio sort were frequently mispriced when regressed on the three- and five-factor models, whereas for the ten-portfolio

sort, the extreme G5 losing stocks produced positive and significant alphas. Therefore, corporate governance (or shareholder rights as a characteristic) could explain excess returns. Overall, investors were less (more) reluctant to sell (buy) losing (winning) stocks of weak shareholder rights companies compared to stocks of strong shareholder rights companies, particularly during recessionary periods.

6 Conclusion

This study investigated return continuations and reversals of stocks with different corporate governance scores (or shareholder rights) and attempted to shed light on whether corporate governance structure (and takeover vulnerability) affected momentum returns and investors' decisions to buy past winners and losers. The analysis used the dataset of Gompers et al. (2003), for the period 1990 - 2007, and assigned to each stock a corporate governance score from 1 to 24 indicating the number of provisions either restricting shareholder rights or increasing managerial power. We focused on stocks with a corporate governance score of 5 or less, the democratic or strongest rights companies, and stocks with a corporate governance score of 14 and above, the dictatorship or weakest rights companies. This study hypothesized that companies with weak shareholder rights or strong antitakeover mechanism (G14) may be perceived less transparent in terms information disclosure, hard to value and riskier and; therefore, investors might be more (less) reluctant to buy (sell) G14 winners (losers) when further good (bad) news arrives in the market, leading to mispricing (significant negative/positive alphas).

Our findings demonstrated that corporate governance structure, or shareholder rights, influenced importantly momentum returns. For stocks with a dictatorship corporate governance structure (G14), past winners and losers produced positive and significant excess returns during expansionary and recessionary periods, respectively. This result was consistent with the return behavior of winners and losers when the momentum strategy was applied across all companies with a corporate governance score.[23] The mispricing of G14 stocks could be attributed to the fact that companies with weak shareholder rights or strong antitakeover mechanism (G14) are less transparent, hard to value and riskier. The findings of this study confirmed that investors were more (less) reluctant to buy (sell) G14 winners (losers) after receiving further good (bad) news in the market, often leading to mispricing (significant negative/positive alphas). Furthermore, the risk factor analysis revealed that during good times, investors who bought G14 winners considered stocks with low profitability (apart from being small and highly

correlated with the market index). When investors sold G14 losers, during the recessionary period, they particularly chose stocks with low profitability, low investment, and high exposure to the market portfolio. For the five-portfolio sort, market momentum performance resembles more closely the return performance of G14 stocks compared to G5 ones, and confirmed that investors are more (less) hesitant to buy (sell) G14 winners (losers) compared to G5 winners (losers) during expansionary (recessionary) periods.

Among extreme winners and losers (10-portfolio sort), G14 winners produced negative and significant alphas in the expansionary period, indicating that investors were increasingly reluctant to buy extreme past winners in the G14 (dictatorship) category, often underperforming the benchmark when adjusted for risk. Extreme G14 losers produced insignificant alphas for both the expansionary and recessionary periods. Conversely, extreme G5 winners generated few positive and significant alphas, indicating that investors were less reluctant to buy extreme winning G5 stocks (democracy), which leads to a few instances of mispricing in good or bad times. Extreme G5 losers generated positive and significant (5FF) alphas during the recessionary period, but largely insignificant alphas during the expansionary one. For the ten-portfolio sort, market momentum performance is aligned more to the return performance of G5 compared to G14 stocks; however, in terms of significance the return performance of G5 stocks was much lower. The 10-portfolio sort results demonstrated that the excess return performance of past winners/losers with weak shareholder rights (G14) was different to the performance of the overall market's past winners/losers, showcasing that corporate governance and extreme past performance influenced profoundly investors' decisions to buy (sell) past winning (losing) stocks.[24] For the 10-porfolio sort, corporate governance score has significantly increased the frequency of underperforming stocks as we move from strong to weak shareholder right companies.

Although the corporate governance score measured firm characteristics that were less tangible compared to other ones that have been used in conjunction with momentum strategies such as credit rating, illiquidity, or analyst coverage, the corporate governance score clearly had an impact on how a firm is perceived by investors in terms of risk, transparency, and valuation and, eventually, on investors' decisions to buy and sell stocks during good and bad times. This result is consistent with studies that link better corporate governance with reduced information asymmetry (Dumitrescu and Zakriya, 2022; Derrien and Kecskés, 2013; Hong et al., 2000), increased information disclosure (Bushman and Smith, 2001; Healy and Palepu, 2001; Lang and Lundholm, 1996) and increased informational efficiency of stock prices (Boehmer and Kelley, 2009; Chung et al., 2010; Lee et al., 2016). Finally, future research could

reinforce the findings of this study by examining other corporate governance indexes and countries.

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Declaration:

We solemnly declare that there are no conflicts of interest regarding the research article titled 'Momentum Returns and Corporate Governance' that we wish to submit to the '**??????????**'.

[1] One explanation for the momentum effect is investors' underreaction to news. Focusing on irrationality, underreaction to news is based primarily on collective behavioral biases in the market (Hong and Stein, 1999; Barberis et al., 1998; Daniel et al., 1997; Jegadeesh and Titman, 1993).

[2] Chordia and Shivakumar (2002) provide a possible role for time-varying expected returns as an explanation for momentum payoffs. Liu and Zhang (2008) find that macroeconomic risk plays an important role in driving momentum profits. Using instrumented principal components analysis, Kelly et al. (2021) estimate latent factors with time-varying factor loadings that depend on observable firm characteristics and show that estimates of conditional risk exposure can explain a sizable fraction of momentum and long-term reversal returns. Avramov et al. (2007) revealed that companies with low credit ratings offer opportunities for large and significant momentum profitability (nonexistent among high-credit-rated firms), and momentum is thus associated with higher risk-taking behavior. See also Berk et al. (1999), Conrad and Kaul (1998), Johnson (2002), Lee and Swaminathan (2000), Lewellen (2002), Yao (2012).

[3] The G-index contains 24 provisions that either restrict shareholder rights or increase managerial power and thus measure the level of corporate governance in a company. Some provisions include antigreenmail, blank check, golden parachutes, poison pills, confidential voting, and supermajority. For a full list of provisions, please see the appendix of Gompers et al. (2003).

[4] The market (all stocks with a governance score) momentum strategy results showed that during the expansionary period, highly positive momentum returns were driven by the high return continuation of past winners, whereas during the recessionary period, negative momentum returns were driven by the strongly reversing returns of loser portfolios. Although market momentum returns produced largely insignificant alphas, winner (loser) portfolios generated positive and significant excess returns during the expansionary (recessionary) period.

[5] Investors are increasingly hesitant to buy extreme past winning stocks with weak shareholder rights, especially if these are perceived as riskier (increased managerial power and antitakeover provisions) and subject to more biased valuation beliefs (lower information disclosure, transparency, and analyst coverage).

[6] Researchers have tested the momentum strategy on shorter holding periods (weekly) and found that it generates abnormal returns (Gutierrez and Kelley, 2008). Fama and French (2016) introduced a model for asset pricing with profitability and investment added to the three-factor model. However, this five-factor model could not explain momentum in small firms.

[7] Low-credit-rating firms tend to take greater risks, and momentum profits arise from a reaction to information regarding a company's operating performance. These companies also tend to have higher return volatility and high analyst dispersion, which is common, given their operating risk. Moreover, the findings could be interpreted as momentum being based on risk and not behavioral factors.

[8] Hong and Stein (1999) documented that information diffusion could be the driver of momentum profits and that the amount of analyst coverage is an appropriate proxy. Thus, it appears that analyst coverage affects prices and the overall market. Hong et al. (2000) demonstrated that momentum is higher among companies that have lower analyst coverage compared to those with high analyst coverage. They believed that analysts neglect poorly performing small companies; thus, information on these companies spreads gradually and makes momentum profits greater. Furthermore, studies have found that companies with more transparency and those that file voluntary filings are followed by more analysts, as information about such companies' governance is readily available, without requiring a significant time commitment. These findings are in contrast to the intuition that increased transparency means that investors receive company information directly from companies (Lang and Lundholm, 1996). They concluded that the benefits of disclosure reduce information asymmetry as well as a company's cost of capital.

[9] Analyst coverage affects financial markets and stock prices and helps disseminate information quickly in the market (Healy and Palepu, 2001). More, analysts serve to act as a monitoring tool in the market and have a positive impact on market efficiency (Bushman and Smith, 2001).

[10] Cremers and Nair (2005) showed that a portfolio that buys firms with a high takeover vulnerability and shorts firms with a low takeover vulnerability (with both portfolios having high institutional ownership) generated an annualized abnormal return (alpha) of 10% to 15%. Cremers, Nair, and John, (2009) proposed a "takeover" asset pricing factor that largely explains the abnormal returns associated with governance-spread portfolios. Dumitrescu and Zakriya (2022) found that poor governance stocks outperformed good governance ones after 2008. For the same period, poor governance stocks demonstrated a distinct decline in price informativeness, whereas well-governed stocks demonstrated an upward trend.

[11] More, Lee and Chung (2016) show that takeover threats from the market for corporate control actually increase rather than decrease the need for better internal governance mechanisms (adopt a large number of governance standards). Although prior research suggests that the market for corporate control reduces managerial entrenchment through its disciplinary role, Lee and Chung (2016) demonstrate that the market for corporate control could exacerbate the managerial myopia problem and that firms mitigate this problem through internal governance mechanisms.

[12] Straska and Waller (2010) show that antitakeover provisions increase the value of firms with low bargaining power as the bargaining benefits of antitakeover provisions outweigh their costs.

[13] Their six antitakeover provisions are staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, and supermajority requirements for mergers and charter amendments. More, the other eighteen provisions not in the entrenchment index were uncorrelated with either reduced firm valuation or negative abnormal returns.

[14] More, companies with weak shareholder rights might be of less interest to financial analysts (low analyst coverage). News about these companies takes longer to disseminate and get incorporated into current prices, pushing stocks away from fundamental values for longer periods.

[15] Guiso et al. (2008) show that lack of trust can explain why individuals do not participate in the stock market even in the absence of any other friction.

[16] Hooper et al. (2009) demonstrate that better developed governance systems (quality of institutional environment) have stock markets with higher returns on equity and lower levels of risk. The results lend support for the view that a precondition for financial market development is the improvement of the institutions which govern the process of exchange. More, Sherif and Chen (2019) show that the quality of governance as captured by accountability, government effectiveness, and control of

corruption, significantly affect the international momentum profits. In particular, the quality of governance is negatively correlated with momentum returns in most countries and is of significant importance in understanding pricing effects and stock market anomalies.

[17] See Gompers et al. (2003) for the full list of provisions. Some of them are antigreenmail, blank check, fair price, golden parachutes, poison pills, and supermajority.

[18] Gompers et al. (2003) provided data for a set of companies every two years. Therefore, when the G-index score was updated, it is possible that some companies might have been dropped from the dataset or some companies might have been added to the dataset.

[19] For instance, for observation period 9 and holding periods 3, 6, 9, and 12, there were significant (at 1% significance level) monthly (five-factor) alphas of 0.0084, 0.0081, 0.0070, and 0.0053, respectively.

[20] Examining extreme winners and losers, past winning stocks with weak shareholder rights gained considerably less compared to winning stocks with strong shareholder rights and generated negative significant alphas. It seems that investors' buying pressure for extreme G14 winners deteriorated quickly or the same stocks were sold early due to fears of being way overvalued or unable to recover the initial investment. G14 losing stocks reversed more strongly than G5 losing stocks for short holding periods (3 to 6 months), while the opposite was true for longer holding periods (9 to 12 months). In particular, investors appeared to be aggressive and quick in selling losing stocks with weak shareholder rights (G14) but were reluctant and slow in selling losing stocks with strong shareholder rights (G5).

[21] This was mainly caused by the higher return earned by G5 winners compared to G14 winners. Although a higher reversing return was earned by G14 loser stocks compared to G5 loser stocks, a significantly lower return was earned by the winner stocks in G14 compared to G5. As the loser stocks always reversed, a momentum strategy would produce significantly lower returns than an investment strategy that buys both the winner and loser stocks.

[22] Another four strategies produced positive significant alphas for the losing stocks, if the significance level was increased to 10%.

[23] The market (all stocks with a governance score) momentum strategy results showed that during the expansionary period, highly positive momentum returns were driven by the high return continuation of past winners, whereas during the recessionary period, negative momentum returns were driven by the strongly reversing returns of loser portfolios. Although market momentum returns produced largely insignificant alphas, winner (loser) portfolios generated positive and significant excess returns during the expansionary (recessionary) period. Analysis of return continuation and reversal for stocks with strong (G5) and weak (G14) shareholder rights demonstrated that G14 winning stocks produced positive and significant alphas during the expansionary period, while G14 losing stocks generated positive and significant alphas during the recessionary period.

[24] Investors are increasingly hesitant to buy extreme past winning stocks with weak shareholder rights, especially if these are perceived as riskier (increased managerial power and antitakeover provisions) and subject to more biased valuation beliefs (lower information disclosure, transparency, and analyst coverage).