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The outperformance of family firms: the role of variance in earnings per share and analyst forecast dispersion on the Swiss market

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Abstract Recent studies provide empirical evidence that family firms are outperforming their non-family counterparts in terms of stock market performance. For the Swiss stock market we find that family firms indeed outperform their non-family counterparts after controlling for firm size and beta. In addition, our data shows that family firms display more stable earnings per share in contrast to their non-family counterparts. Furthermore we find that the variance of earnings per share positively affects analyst forecast dispersion. According to anomaly literature, lower analyst forecast dispersion has been found to induce higher excess return, which our data supports for the Swiss stock market. By linking variance of earnings per share, analyst forecast dispersion and stock performance we provide an insightful explanation for the excess stock market returns of family firms. In addition, our text extends the theory of dispersion effect with an additional empirical element, the variance of earnings per share.

Keywords Family firms · Analyst forecast · Dispersion · Earnings per share

JEL Classification Numbers G14 (information and market efficiency, event studies) · G15 (international financial markets) · G11 (portfolio choice, investment decisions)

1 Introduction

Recent literature reports that family firms are outperforming their non-family counterparts on the stock exchange. For example, Morck et al. (1988) find that

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Tobin's Q, the market value of a company's assets divided by their replacement costs, increases when the founding family holds one of the top two positions for firms incorporated after 1950. Similarly, Anderson and Reeb (2003) find that investors intend to value family firms more highly. On average Tobin's Q was 10% higher for this group of firms. In addition to this, earlier studies by Mc Conaughy et al. (2001) report that firms controlled by the founding family have greater value than non-family controlled firms.

These findings pose one central question: what is the reason for this outperformance? Many studies have analyzed the financial characteristics of family firms. The findings are very diverse, but unanimous at least in two main points.

Firstly, there is strong empirical evidence that family firms exhibit lower leverage levels (Gallo and Vilaseca 1996). The effect of debt levels on firm value has been widely analyzed in economic literature. Traditional financial literature argues that in a world without taxes and perfect capital markets, changes in leverage have no effect on a firm's value (Modigliani and Miller 1958). However, the existence of market imperfections has led financial theorists to agree that an optimal capital structure does exist for each firm.

Secondly, family firms display innate agency advantages (Chrisman et al. 2003). Although family firms display specific agency problems (e.g. agency problems due to altruism, Schulze et al. 2003) they are found to exhibit advantages through cost efficient governance structures that make costly control mechanisms dispensable.

Although these two elements are supported by strong theoretical and empirical evidence, it remains unclear to what extent they help to explain the outperformance of this type of enterprise. In this paper we analyze the role of analyst forecast dispersion in explaining the outperformance of family firms after controlling for firm size and beta. In addition, we investigate whether analyst forecast dispersion is positively linked to past variance in earnings per share. This question stems from the observation that family firms tend to display stable operating profits, which might positively affect the information setting of this type of firm, thereby reducing analyst forecast dispersion, which is known to affect stock market performance.

Our paper is structured as follows. Firstly, we provide a short review of the literature on analyst forecast dispersion. Secondly, we will outline our research questions. Thirdly, we will present our sample and methodology. In the fourth section we outline the results of our investigation. Finally, in the fifth section, we present our conclusions and highlight directions for future research.

2 Literature review

Recent studies by Scherbina (2001), Diether et al. (2002), Dische (2002a), Ciccone (2003) as well as Baik and Park (2003) have uncovered a new anomaly in the cross section of stock returns based on analyst forecast dispersion. The essence of these studies is that firms with a low dispersion in earnings forecasts, measured as the normalized standard deviation of analyst's earnings forecasts,

earn higher subsequent returns in the stock market than firms with a high dispersion. This result is troublesome, as it contradicts standard risk-reward assumptions that are the foundation of modern academic finance theory.

Recently, two theories that explain the pattern of returns found in the data have been proposed. First, Diether et al. (2002) favour a theory that is based on the idea that short-sale restrictions often found in real world markets prohibit the investors with the most negative estimates of a firms' earnings from selling the stock short so that the investors with the most positive estimates drive up the value of the stock. Since the uncertainty surrounding the future earnings of a company dissolves when the actual earnings are announced (Ammann and Kessler 2004), the stock drops because the investors with the highest prior estimates are most likely to be disappointed and start to sell (Wallmeier 2005). Therefore, the higher the dispersion in consensus estimates, the lower the subsequent returns of a stock.

Second, Johnson (2004) presents a further approach for the explanation of the dispersion effect. He distinguishes between two components of the total uncertainty that investors face. The stochastic evolution of the underlying value itself is fundamental to the economy and is independent of the informational environment. This variability is referred to as fundamental risk. In contrast, the uncertainty about the current value of that process is purely determined by the informational setting and therefore referred to as parameter risk. Johnson (2004) considers forecast dispersion to be a form of idiosyncratic risk that proxies for parameter risk but not for fundamental risk.

The Johnson (2004) model has the implication that raising the uncertainty about the underlying asset value of a levered firm while holding asset risk premium constant, therefore adding idiosyncratic risk, lowers its expected returns. The reason is that more unpriced risk raises the option value of the equity claim, which again lowers its exposure to priced risk.

Johnson's model 2004 is built around the empirical findings of Ackert and Athanassakos (1997), Diether et al. (2002), Dische (2002b), Ciccone (2003) and Baik and Park (2003), who find that firms with a high dispersion in consensus estimates earn comparatively low subsequent returns, by stating that dispersion is a measure of idiosyncratic risk.

3 Research questions

Our investigation examines whether past earnings per share variance can help to explain forecast dispersion. It is hypothesized that firms with low variance in their net profits, measured by the standard deviation of earnings per share, have lower forecast dispersion. We hypothesize that analysts consider past earning volatility and extrapolate from past experience to the future performance of these firms and adapt their estimates accordingly. Hence, analyst forecast dispersion is expected to be lower for firms with less variable earnings per share. Consequently, these firms are considered to be more transparent and therefore

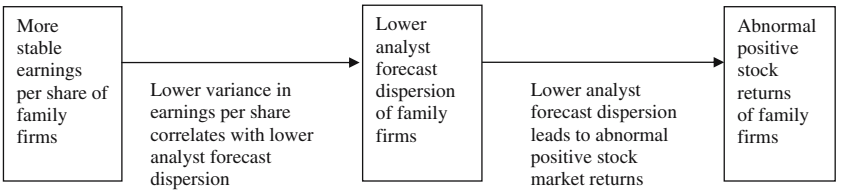

Fig. 1 Interrelation between earnings per share, forecast dispersion and stock performance

represent lower idiosyncratic risk, leading to abnormal positive returns via the dispersion effect.

Firstly, it will be tested whether family firms display abnormal stock returns compared to their non-family counterparts even after controlling for market beta and size effect. By answering this research question the present study strives to further substantiate the preliminary findings by Zellweger and Fueglistaller (2004) on the performance of family-controlled firms on the Swiss stock market.

Secondly, our research endeavours to investigate if the dispersion effect can be observed in the Swiss stock market.

Thirdly, the study investigates the correlation between past earnings per share variance and forecast dispersion for all firms in the Swiss stock market. As discussed above, it can be argued that firms with low variance in their profits, measured by the standard deviation of earnings per share, should have lower forecast dispersion.

Fourthly, the outperformance of family firms is investigated more closely. We will examine if family firms in the Swiss stock market display lower earnings per share standard deviation and forecast dispersion in contrast to non-family firms. The assumption that family firms display less variance in earnings per share stems from in the finding that family firms tend to display more stable operating profits since business families have a large proportion of their private wealth directly tied to their firms and therefore have a preference for less risk (Ward 1997). Subsequently, it will be analyzed whether or not family firms display lower analyst forecast dispersion. Figure 1 illustrates the elements and the interconnections that we examine.

If our hypotheses are confirmed, we will provide an insightful explanation to the excess stock returns of family firms via the dispersion effect which can be explained by the stable earnings per share of this type of enterprise.

4 Sample description and methodology

The sample consists of publicly listed family and non-family firms quoted on the Swiss stock exchange. Of the 390 companies quoted on the Swiss stock exchange in August 2004, 270 are headquartered in Switzerland or Liechtenstein and are therefore considered for the present analysis.

In line with the definition by La Porta et al. (1999) a firm is considered a family business when 20% of the voting rights are controlled by a single shareholder or a group of individual shareholders. Applying this definition to the 270 firms headquartered in Switzerland or Liechtenstein results in 99 family and 171 non-family firms. We gathered the data for the analysis of the shareholder structure from the Swiss stock exchange that requires declaration of ownership structures for corporate governance reports. Where necessary the annual reports of the firms were consulted as an additional source of information.

In addition, to be included in the sample of this study, earnings estimates from at least three analysts needed to be reported in the Institutional Brokerage Estimate System (IBES) for each firm in the considered month so that dispersion data could be calculated.

To satisfy the criteria mentioned above, the sample of 270 firms was reduced to 159 firms of which 59 are considered as family firms and 100 fall under the definition of non-family firms. Descriptive statistics on the size and the industry of the family and non-family firms are reported in Tables 8 and 9 in the Appendix.

Systematic collection of earnings estimates for companies listed on the Swiss stock exchange on IBES started in March 1987. The time horizon of this study is thus March 1987 until September 2004. The last possible month to start tracking the performance of a stock over 12 months is therefore September 2003.

The dispersion of analyst consensus is defined as the standard deviation of earnings forecasts scaled by the absolute value of the mean earnings forecast and is obtained on the first trading day of each month. The mean earnings per share estimate for the following fiscal year is obtained on the first trading day each month and represents the consensus forecast.

Diether et al. (2002) report a bias in the historical IBES earnings estimate data that is due to the way IBES accounts for stock splits. IBES reported earnings are based on today's number of shares and not on the historical number. After a stock split, IBES divides the historical data by a split adjustment factor and then rounds to the nearest cent, which induces the bias. In this study, we do not use individual analysts' estimates but a precalculated coefficient of variation (data type F1CV in Datastream) to measure the actual dispersion. F1CV is also adjusted for stock splits but is reported with three digits after the decimal point. Since the highest split factor in our data is 100, we have no indication to believe that the bias reported by Diether et al. (2002) affects our study.

To control for market beta and size effect (Fama and French 1992, 1995) we calculate market- and size adjusted abnormal returns $AR_{s,m,t}$ for the individual stocks on a monthly basis for holding periods of up to 12 months. The performance of the Swiss performance index (SPI), a market value weighted total return index that includes all Swiss listed companies with a free float higher than 20%, is defined as the market performance. The return differential between the Swiss performance index small (SPIS) and the Swiss performance index large (SPIL), two sub-indexes of the SPI for small- and large-caps, is used to quantify the size-effect in the respective periods. As historical returns for the SPIS and

the SPIL are only available for periods after November 1993, the time period for the calculation of the abnormal returns $AR_{s,m,t}$ is reduced accordingly.

To calculate the market risk premium (MRP) the period-adjusted 12-months LIBOR in Swiss francs is used as a proxy for the riskless interest rate r. We therefore calculate for each month m with a holding period t:

$$MRP_{m,t} = SPI_{m,t} - r_{m,t} \tag{1}$$

and

$$SPR_{m,t} = SPIS_{m,t} - SPIL_{m,t} \tag{2}$$

The betas versus MRP (β_{MRP}) and versus SPR (β_{SPR}) are calculated for each stock s in the sample for each month m by applying a two-factor linear regression based on data on the 60 months prior to month m. The return $R_{s,m,t}$ of a stock s in month m for a holding period t is therefore calculated as:

$$R_{s,m,t} - r_{m,t} = AR_{s,m,t} + \beta_{MRP;s,m,t}MRP_{m,t} + \beta_{SPR;s,m,t}SPR_{m,t} + \varepsilon_{s,m,t} \tag{3}$$

where $AR_{s,m,t}$ denotes the abnormal return of a stock s in month m for a holding period t.

The time frame of the return data used for this study is further reduced by 60 months by the requirements for the calculation of β_{MRP} and β_{SPR}. Therefore, we use a time frame from November 1998 to September 2003 with monthly abnormal stock returns of up to 12 months following portfolio formation to examine the dispersion effect in the Swiss stock market.

In order to analyse the dispersion effect, five portfolios are built based on the differences in dispersion. The individual observations of stocks with the respective ex-post returns are assigned to the five portfolios in ascending order each month. Portfolio P1 holds the quintile of the stocks that showed the smallest dispersion and portfolio P5 holds the quintile of the stocks with the largest dispersion in each respective month.

Each stock with its monthly abnormal performance in subsequent periods of up to 12 months is treated as a discrete item in every month and sorted in the portfolio with respect to its consensus dispersion on the first trading day of that particular month. No overlapping time periods are used for the calculation of the dispersion effect. For each respective month, the portfolios P1, P2, P4 and P5 include the same number of stocks. Portfolio P3 includes a slightly larger number of shares since the remaining shares are placed in it when the number of stocks analyzed in any given month is not dividable by five.

As the presence of heteroskedasticity in the dispersion data can be assumed, the sort sequence used to assign the individual stocks to the portfolios is solely based on the ordinal ranking of dispersion in the respective month and is therefore robust against changes in variance of dispersion. An equal representation of stocks from every month in the considered time period in all portfolios P1–P5 can therefore be assumed.

The dispersion data is skewed right with most of the effect taking place in the P5-portfolio as can be seen in the higher mean dispersion compared to median dispersion as dispersion cannot become smaller than zero but can easily exceed 100 for the most opaque firms in the market (see Table 2).

5 Results

5.1 The performance of family firms

In the time period covered in this study (1998–2003), family firms in the sample yielded an annualized market- and size-adjusted abnormal return of +5.62% on average, non-family controlled firms yielded an annualized market-adjusted return of −1.63% on average. As can be seen in Table 1, the average outperformance of family firms versus non-family firms in a holding period of 1 month was 0.6049%, which is statistically significant at a 0.01 level. The stock market performance of family and non-family firms was calculated by applying Eq. 3 for a time period t of 1 month but separated in family and non-family firms.

Hence, we provide additional evidence to the results of Anderson and Reeb (2003) that the outperformance of family firms is still significant after controlling for market risk and size effect.

5.2 The dispersion effect in the Swiss stock market

As outlined above, we use a time frame from November 1998 to September 2003 with monthly abnormal stock returns of up to 12 months following portfolio formation to examine the dispersion effect in the Swiss stock market. As hypothesized, the P1-portfolio, the portfolio consisting of the stocks with the lowest analyst forecast dispersion, reports significantly higher abnormal returns than the P5-portfolio, the portfolio with the highest analyst forecast dispersion

Table 1 Abnormal cumulative monthly returns for family and non-family firms

Year	Abnormal cumulative monthly returns (0,1)		
	Family firms	Non-family firms	Outperformance family firms
1999	1.0342	−0.0780	1.1123
2000	1.0987	0.5372	0.5615
2001	−0.1937	−0.0218	−0.1719
2002	−0.6489	−1.5520	0.9031
2003	1.0053	0.2994	0.7059
Average	0.4759	−0.1289	0.6049(3.40)

The table reports abnormal cumulative returns in percentage for a period of 1 month for portfolios of family and non-family firms in the Swiss stock market. No overlapping time periods are used. T-statistic is in parentheses. For the calculation of abnormal returns and the sample description refer to Sect. 4

(Table 2). The P1-portfolio reports an average abnormal return of 80 basis points per month over a 6 months period, the P5-portfolio one of -24 basis points (averages of first 6 months in Table 2 for portfolio P1 and P5, respectively). Hence, the proposition that high dispersion leads to lower subsequent returns holds true for the Swiss stock market.

Table 2 also shows that a long P1/short P5 portfolio would yield 103 basis points per month on average over a holding period of 6 months in the time period covered by this study. This result is especially noteworthy as the returns shown in Table 2 are adjusted for market beta and size effect.

The *t*-statistics provided in parentheses show that the dispersion effect is significant at the 0.01-level for holding periods of up to 9 months following the original portfolio formation. The finding that the dispersion effect becomes insignificant after a holding period of 9 months could be interpreted as further evidence that the anomaly is based in heterogeneous beliefs and short selling restrictions as argued by Diether et al. (2002), rather than on idiosyncratic risk as proposed by Johnson (2004) (Table 3).

5.3 Variance of past earnings per share and analyst forecast dispersion

To test the relationship between the variance in earnings per share and analyst forecast dispersion a correlation analysis is performed. In order to apply a correlation analysis appropriate to the distribution of the analyst forecast dispersion data, a Komolgorov–Smirnov test with respect to the normal distribution of the dispersion coefficient was applied. The significance level of 0.000 found in the analysis indicates that the distribution of the analyst forecast dispersion data significantly differs from a normal distribution. We therefore assume the data to be ordinally scaled and consequently we only use non-parametric tests for the correlation analysis.

Table 4 reports the Spearman-Rho correlation between the normalized standard deviation of earnings per share (EPS) and the mean dispersion of the respective stock. The Spearman-Rho correlation between the variance in earnings per share and analyst forecast dispersion amounts to 0.559 and is significant on a 0.01 level (two-sided) (Table 4).

We therefore find significant empirical evidence for a positive relationship between the stability of earnings per share and a low level of consensus dispersion in the Swiss stock market.

5.4 The case of family firms

The two preceding subchapters have shown two things: firstly, we provided evidence that a lower analyst forecast dispersion leads to high abnormal stock returns. Secondly, we find a positive relationship between the stability of earnings per share and a low level of consensus dispersion in the Swiss stock market. In this section we test whether family firms display more stable earnings per share and less analyst forecast dispersion than the non-family firms.

Table 2 Abnormal returns of portfolios formed by consensus dispersion

Dispersion portfolio	Abnormal average monthly returns											
	(0, 1)	(1, 2)	(2, 3)	(3, 4)	(4, 5)	(5, 6)	(6, 7)	(7, 8)	(8, 9)	(9, 10)	(10, 11)	(11, 12)
P1 (most favorable)	0.8023	0.7953	0.9200	0.9435	0.6038	0.7086	0.7154	0.7454	0.8014	0.4310	0.2985	0.1971
P2	0.4357	0.2941	0.5931	0.0943	0.5615	0.3072	0.3364	0.1433	−0.0322	0.0874	0.2111	0.3328
P3	−0.0112	0.7664	−0.1139	0.5286	0.0829	0.4275	0.3498	0.3916	0.4533	0.2917	0.1300	−0.0317
P4	−0.4346	−0.8237	−0.4904	−0.7921	−0.6040	−0.7516	−0.2299	−0.1320	−0.0762	−0.0103	0.0556	0.1215
P5(least favorable)	−0.2105	−0.2479	−0.3254	−0.2050	−0.0791	−0.3569	−0.6327	−0.5962	−0.5796	−0.1915	−0.1634	−0.1353
P1–P5	1.0129	1.0432	1.2454	1.1485	0.6829	1.0655	1.3482	1.3416	1.3810	0.6225	0.4620	0.3324
	(3.37)	(3.49)	(4.25)	(3.96)	(2.35)	(3.76)	(4.73)	(4.70)	(4.72)	(2.13)	(1.49)	(1.07)

The table reports market-adjusted abnormal monthly returns for portfolios based on consensus dispersion from November 1998 to September 2003. For sample description and calculation of market-adjusted abnormal returns refer to Sect. 4. The P1-portfolio contains the stocks with the smallest dispersion in consensus, the P5-portfolio contains the stocks with the largest dispersion. T-statistics are reported in parentheses

Table 3 Descriptive statistics of analyst's forecasts

Year	No. of firms	Median no. of analysts	Median dispersion						Mean dispersion					
			Total	P1	P2	P3	P4	P5	Total	P1	P2	P3	P4	P5
1987	55	6	20.9	5.3	11.3	20.9	32.3	48.9	26.2	5.1	11.1	20.9	32.7	62.3
1988	63	5	17.2	3.8	9.7	17.2	31.3	47.9	25.4	4.4	10.1	17.3	31.8	64.9
1989	80	6	10.4	3.8	6.6	10.4	18.2	40.4	16.7	3.6	7.0	10.7	19.1	43.8
1990	85	7	11.1	4.6	7.8	11.1	19.5	40.3	19.3	4.6	7.8	11.3	21.1	52.6
1991	86	7	14.3	4.5	8.0	14.3	27.0	44.6	29.2	4.2	8.0	14.6	27.3	93.8
1992	83	9	16.0	5.1	9.5	16.0	32.0	64.4	42.5	5.0	9.6	17.1	32.4	152.5
1993	88	10	16.1	4.4	9.2	16.1	29.7	59.8	36.4	4.2	9.5	17.0	30.1	124.3
1994	86	11	13.6	4.3	7.9	13.6	25.7	48.6	27.1	4.1	8.1	14.1	26.9	84.3
1995	95	12	11.8	4.4	6.7	11.8	19.9	40.2	24.9	3.9	7.1	11.7	20.1	83.4
1996	100	12	9.9	3.6	6.0	9.9	17.6	35.8	22.8	3.4	6.1	10.2	18.2	77.5
1997	108	11	10.6	3.7	6.3	10.6	17.0	34.4	17.8	3.5	6.4	10.7	17.6	51.9
1998	110	9	9.1	3.8	6.2	9.1	13.5	22.9	14.8	3.5	6.3	9.3	13.7	41.9
1999	112	8	9.1	3.5	6.1	9.1	13.8	26.0	18.0	3.4	6.1	9.1	13.8	58.8
2000	122	8	9.7	4.0	7.1	9.7	14.2	25.0	17.1	4.0	7.0	9.7	14.4	51.0
2001	135	7	12.1	4.6	8.4	11.9	17.1	44.4	22.6	4.6	8.8	12.9	20.4	66.8
2002	129	7	15.4	5.2	10.6	15.4	28.9	62.4	32.8	5.0	10.5	16.2	30.0	103.4
2003	120	7	16.1	4.8	9.6	16.1	31.2	91.1	41.4	4.7	9.9	16.7	31.3	147.4
Average	97	8	12.1	4.4	7.9	11.9	19.9	44.4	25.6	4.2	8.2	13.5	23.6	80.0

The table reports the median number of analysts per covered firm, the median analysts forecasts dispersion for different forecast dispersion portfolios. The P1-portfolio contains the stocks with the smallest dispersion in consensus, P5-portfolio contains the stocks with the largest dispersion. In order to provide the longest possible timelines, we report the descriptive statistics starting in 1987 but note that the actual calculation of the dispersions effect shown in Table 2 uses a shorter time period due to the method used for calculation of abnormal returns. For the sample description and the definition of analyst forecast dispersion refer to Sect. 4

Table 4 Correlation between normalized standard deviation of earnings per share and mean dispersion—full sample

			Normalized standard deviation of EPS	Mean dispersion
Spearman-Rho		Correlation coefficient	1.000	0.559*
	Normalized standard deviation of EPS	Significance (2-sided)		0.000
		N	143	143
		Correlation coefficient	0.559*	1.000
	Mean dispersion	Significance (2-sided)	0.000	
		N	143	143

The table reports Spearman-Rho correlation between the normalized standard deviation of earnings per share (EPS) and the mean dispersion of the respective stock. For a sample description refer to Sect. 4

*This correlation is significant on the −0.01 level (2-sided)

Our assumption that family firms display lower variance in earnings per share roots in the finding that business families have a large proportion of their private wealth directly tied to their firms and therefore have a preference for lower risk (Ward 1997).

In order to analyze the differences in the stability of earnings per share between family and non-family firms, we check for differences in means and variances. To prevent outliers from influencing our findings, we remove firms with a variance in earnings per share that is more than two standard deviations away from the average variance from the sample. In our sample we find that the mean standard deviation of earnings per share of family firms in the period from 1987 to 2003 was 146% whereas the mean standard deviation of earnings per share in the same period for non-family firms was 238%. The comparison of variances shows that variances in earnings per shares differ significantly between family and non-family firms. A comparison of means under the assumption of non-equal variances shows that the differences in the mean standard deviation between family and non-family firms are significant (Table 5).

As outlined above, there is a monetary reason that motivates such behaviour. Drastic changes in net income can have a direct impact on family wealth,

Table 5 Independent samples *T*-test for equality of means of normalized earnings per share standard deviation of family and non-family firms

	F-test		*T*-test	
	F	Significance	*T*	Significance (2-sided)
Equal variance assumed	2.727*	0.0001	–1.901	0.0595
Equal variance not assumed			–2.028*	0.0446

The table reports a *F*-test on equality of variances and a *T*-test on equality of means of normalized earnings per share standard deviation of family and non-family firms. For the sample description refer to Sect. 4

*Significance level 5%

knowing that on average 70% of the family estate is invested in the firm. In the eyes of the family firm, a low-risk business strategy is therefore not only desirable with respect to the firm but also to the family and its wealth.

We compared the median and mean dispersion data for family and non-family firms in Table 6 and Table 7. As expected, our results show that dispersion in family firms is lower. This holds true in all but 2 years (1996 and 2000) when looking at median numbers and in 10 out of 17 years when looking at mean numbers.

In summary, based on the anomaly literature of Diether et al. (2002) who find a positive relation between analyst forecast dispersion and abnormal stock returns and the empirical data presented in this study, we provide an explanation for the outperformance of family firms on the Swiss stock exchange.

Evidence is presented here that more stable earnings per share significantly correlate with lower analyst forecast dispersion in the Swiss stock market. Additionally we find that family firms display more stable earnings per share and, as expected, also lower analyst forecast dispersion. Furthermore we find that lower analyst forecast dispersion leads to abnormal positive returns after controlling for size and market beta, as observed by Diether et al. (2002). This provides us with an insightful explanation for the outperformance of family firms found in the Swiss stock market. Our argument is summarized in Fig. 2.

6 Conclusion and limitations

To date there is little empirical research that investigates how stability of earnings and differences of opinion affect asset prices. Since two of the main pieces of literature that incorporate differences of opinion produce conflicting theories (Diether et al. 2002, Johnson 2004), the debate can only be resolved with further empirical investigation. This paper takes a step in this direction by probing Swiss stock market data for dispersion anomalies.

Our analysis reveals that earnings per share variance partly explains analyst forecast dispersion. It is shown that firms with stable earnings per share tend to have lower analyst forecast dispersion leading to positive abnormal stock returns. This phenomenon extends the dispersion anomaly literature by an additional empirically tested element.

Furthermore, applied to family firms, which display lower earnings per share variance and lower analyst forecast dispersion, it delivers an explanation to the outperformance of family firms, at least on the Swiss stock market. By analysing the influence of stable earnings per share to the dispersion effect, we provide an explanation for the outperformance of family firms on the stock markets. One could argue that family firms have a more transparent information setting than non-family firms, nurtured by more stable earnings per share. This positively affects analyst forecast dispersion and finally stock returns.

However, the dispersion effect presumably does not account for the full outperformance effect related to the characteristics of family firms. Further studies find that family ownership can have a positive impact on family firm

Table 6 Descriptive statistics of analysts' forecasts—family firms only

Year	No. of firms	Median no. of analysts	Median dispersion						Mean dispersion					
			Total	P1	P2	P3	P4	P5	Total	P1	P2	P3	P4	P5
1987	20	4	19.0	5.0	9.6	19.0	27.3	59.5	28.8	4.7	9.8	19.2	29.3	89.5
1988	24	5	14.5	3.6	7.9	14.1	22.7	39.3	24.2	3.9	8.0	14.4	23.8	75.3
1989	33	5	9.6	3.2	6.2	9.6	13.8	29.2	13.7	3.2	6.3	9.5	14.3	35.5
1990	36	6	10.8	5.7	7.5	10.8	15.6	30.5	19.0	5.2	7.5	10.8	16.3	57.8
1991	36	6	10.6	4.1	6.6	10.6	22.1	34.1	29.9	3.9	6.7	11.6	22.0	114.0
1992	33	8	15.1	4.3	9.0	15.1	24.1	62.7	36.6	4.4	8.8	15.0	25.9	137.1
1993	36	9	14.3	4.4	6.8	14.3	22.4	40.3	29.7	4.2	7.3	13.9	22.4	105.0
1994	36	10	12.8	4.7	7.0	12.8	19.1	36.5	18.8	4.6	7.2	12.7	20.1	50.3
1995	39	11	11.7	4.5	6.7	11.7	16.2	29.9	15.5	4.3	7.0	11.5	17.0	38.7
1996	40	12	9.9	3.6	6.0	9.9	15.4	33.7	23.4	3.5	6.1	10.1	16.1	88.5
1997	41	12	9.3	3.3	5.6	9.3	15.4	27.9	16.1	3.3	5.8	9.5	15.8	47.9
1998	39	9	8.8	3.7	5.7	8.8	13.5	20.6	15.9	3.4	5.8	8.9	13.5	49.6
1999	41	8	8.2	3.5	6.1	8.2	11.8	23.4	18.7	3.4	5.9	8.3	12.1	67.0
2000	44	8	9.9	3.9	7.3	9.9	14.4	22.1	18.3	4.0	7.1	10.0	14.6	58.5
2001	48	7	12.0	4.5	8.0	11.1	17.2	38.4	21.0	4.5	8.6	12.9	20.7	60.8
2002	46	7	14.3	5.2	9.6	14.3	33.8	72.4	33.4	5.2	9.5	15.1	34.1	108.6
2003	40	6	13.7	4.6	7.8	13.8	26.9	85.7	34.1	4.4	7.8	15.0	26.8	122.2
Average	37	8	11.7	4.3	7.0	11.1	17.2	34.1	23.4	4.1	7.4	12.3	20.3	76.8

Descriptive statistics of analyst forecasts for all listed Swiss family controlled firms. The table reports the median number of analysts per covered firm, the median analyst forecasts dispersion for different forecast dispersion portfolios. The P1-portfolio contains the stocks with the smallest dispersion in consensus, P5-portfolio contains the stocks with the largest dispersion. In order to provide the longest possible timelines, we report the descriptive statistics starting in 1987 but note that the actual calculation of the dispersions effect shown in Table 2 uses a shorter time period due to the method used for calculation. For the sample description and the definition of analyst forecast dispersion refer to Sect. 4

Table 7 Descriptive statistics of analysts' forecasts—non-family firms only

Year	No. of firms	Median no. of analysts	Median dispersion						Mean dispersion					
			Total	P1	P2	P3	P4	P5	Total	P1	P2	P3	P4	P5
1987	35	7	21.9	5.4	11.3	21.9	34.6	47.7	24.7	5.4	10.9	22.8	35.3	50.0
1988	39	6	18.8	4.3	11.9	18.3	37.9	52.2	26.1	5.0	11.6	20.7	36.8	56.9
1989	47	6	12.2	3.9	7.1	12.2	23.2	42.1	18.8	4.0	7.7	12.2	24.0	47.4
1990	49	8	11.5	4.3	7.9	11.5	28.6	41.4	19.5	4.2	7.8	12.0	27.1	47.1
1991	50	8	17.0	4.7	8.9	17.0	31.5	46.4	28.8	4.4	9.1	17.1	32.3	82.2
1992	50	9	19.6	5.6	9.5	19.6	40.1	73.9	46.4	5.4	9.7	20.4	38.4	168.0
1993	52	11	21.1	4.3	11.8	21.1	35.0	70.7	41.3	4.5	11.3	21.3	35.6	137.9
1994	50	12	14.6	4.2	8.3	14.6	34.0	52.5	33.1	3.9	8.6	16.5	33.1	108.7
1995	56	12	12.4	4.1	6.6	12.4	23.0	55.4	31.6	3.7	7.2	12.1	24.0	113.8
1996	60	13	9.8	3.6	5.9	9.8	20.3	38.4	22.3	3.4	5.8	10.6	21.0	73.3
1997	67	11	11.5	3.8	6.6	11.5	18.8	35.0	18.9	3.6	6.7	11.6	19.3	54.6
1998	71	8	9.3	3.8	6.3	9.3	13.8	25.8	14.2	3.6	6.5	9.5	14.2	38.1
1999	71	8	9.8	3.4	6.3	9.8	15.1	26.8	17.6	3.4	6.4	9.7	14.8	54.5
2000	78	8	9.5	4.1	6.8	9.5	14.1	28.2	16.3	3.9	6.8	9.6	14.6	47.6
2001	87	8	12.2	4.6	8.5	12.1	17.9	46.3	23.4	4.7	8.7	13.2	21.0	71.2
2002	83	7	16.5	4.7	11.1	16.5	28.5	56.3	32.4	5.1	10.9	16.9	29.5	101.3
2003	80	7	17.8	5.6	10.4	17.8	33.4	97.4	45.4	5.2	10.8	18.0	36.1	162.3
Average	60	8	12.4	4.3	8.3	12.4	28.5	46.4	27.1	4.3	8.6	15.0	26.9	83.2

Descriptive statistics of analyst forecasts for all listed Swiss non-family controlled firms. The table reports the median number of analysts per covered firm, the median analyst forecasts dispersion for different forecast dispersion portfolios. The P1-portfolio contains the stocks with the smallest dispersion in consensus, P5-portfolio contains the stocks with the largest dispersion. In order to provide the longest possible timelines, we report the descriptive statistics starting in 1987 but note that the actual calculation of the dispersions effect shown in Table 2 uses a shorter time period due to the method used for calculation. For the sample description and the definition of analyst forecast dispersion refer to Sect. 4

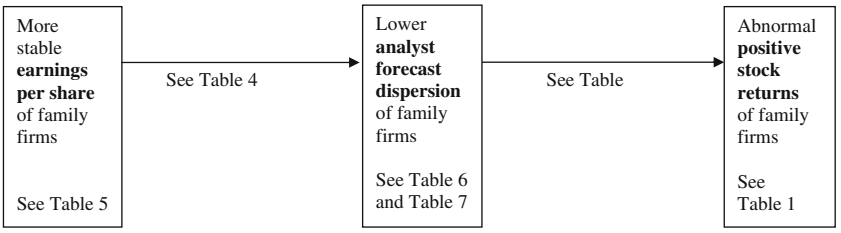

Fig. 2 Interrelation between earnings per share, forecast dispersion and stock performance

performance up to an ownership level of 12%, but that performance suffers beyond that inflection point (Anderson et al. 2003).

Our analysis shows that the presence of a family shareholder creates more stable earnings per share, which reduces the diversity of opinions amongst analysts regarding this type of firm. Although family firms are often said to be opaque (Ward 1997), we find that family firms provide better visibility towards their future earnings compared to their non-family counterparts, given the lower variability in the earnings of family controlled firms.

A limitation of the present study is the assumed causal relation between variance of earnings per share and analyst forecast dispersion. Although we find a significant correlation between these two variables, further research to confirm this relationship is needed.

Our results suggest that further research is required on the variables affecting analyst forecast dispersion and how the presence of a strong individual or family shareholder affects the information setting on one hand and the performance on the other.

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Appendix

Table 8 Descriptive statistics for market capitalization of family and non-family firms

		Market capitalization in ′000 CHF		
	n	Mean	Standard error of mean	Significance
Non-family firms	100	4′887′555	1′655′295	0.253
Family firms	59	2′357′296	1′191′052	

The table reports descriptive statistics on the market capitalization of family and non-family firms, including a *T*-test on equality of means

Table 9 Industry distribution of family and non-family firms

		Family firms(%)	Non-family firms(%)
1	Homebuilding/construction	8.3	8.4
2	Metal/machinery	22.9	23.1
3	Textile	1.0	1.4
4	Chemistry/pharmaceuticals/plastics	9.4	11.9
5	Nutrition/beverages	4.2	4.2
6	Watches	3.1	0.7
7	Electronics/optics	8.3	11.2
8	Wood/paper/graphical industry	6.3	0.7
9	Other sectors industry	2.1	1.4
10	Wholesale	1.0	
11	Retail	4.2	1.4
12	Restaurants	5.2	0.7
13	Consulting	1.0	
14	Bank/insurance/financial services	15.6	25.2
15	Energy utility	2.1	4.2
16	Transport	4.2	4.2
17	Other services	1.0	1.4
		100	100

The table reports the distribution of family and non-family firms on the Swiss stock exchange across industries, in %

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