

Special Stock Option Watch

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The new issue of the ZEW Stock Option Watch concentrates on the remuneration of fund managers. In the first two articles Stefan Ruenzi (University of Cologne) and Richard Deaves (McMaster University) investigate the effects of the compensation schemes of mutual fund managers on their investment decisions and draw conclusions with regard to economic policy and private investors. Stefan Ruenzi shows that the remuneration of fund managers implicitly follows an option-style pattern. The third

article by Boyce Watkins (Syracuse University) analyses the value of inside information revealed by the buy/sell-decisions for stock options. The article of Professor Fischer (Laval University) concentrates on principal-agent conflicts in mutual financial intermediaries. This article complements the analysis of Fischer printed in the preceding issue of the Stock Option Watch.

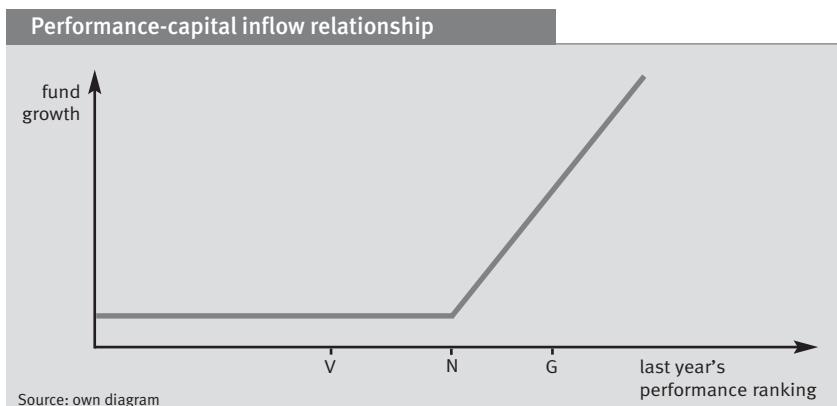
Erik Lüders (*Université Laval, Québec*) und Michael Schröder (ZEW)

Implied Option Contracts and Risk Incentives for Mutual Fund Managers

While stock option programmes are widely used and well known, it is far less known how mutual fund managers are compensated. This is surprising as people invest a lot of money in such funds and the way the managers are compensated significantly affects the way the funds are managed. The fund manager's income usually does not depend on the fund's performance but on the amount invested with the fund. Therefore it is of crucial importance for the fund manager to maximise the investment volume. The investment volume, however, depends on the net capital inflow which in turn depends on last year's fund performance. Hence, the fund manager's income depends implicitly on the fund performance, too. We will discuss in this article the incentives and consequences for the fund manager and his behaviour.

The relationship between performance and capital inflow

Several studies on the mutual fund market show that an investor's decision



for an investment fund primarily depends on performance rankings published in the press. These studies also show that funds with a good performance receive more new investments but that on the contrary there is not that much capital outflow for funds with a relatively poor performance. This leads to a positive and convex relationship between capital inflow and past fund performance.

Sirri/Tufano (1998), for example, show that the best performing funds re-

ceive the largest capital inflow but the badly performing funds suffer very little if any capital outflow. This so-called Performance-Capital Inflow relationship is shown in the diagram on this page. It has an option-like functional form. The N best ranked funds receive capital inflows with the level of inflows depending on the actual rank. If a fund fails to be among the first N funds, then its ranking is irrelevant for the fund flows. The rank N corresponds therefore to the strike price in a classical option setting.

Implied Risk Incentives

Since fund managers' income depends on the investment volume under management their income depends indirectly on their performance. The described convexity of the relationship between capital inflow and performance leads to an option-like remuneration structure of fund managers. Since the option value increases with the volatility of the underlying, fund managers have an incentive to choose certain risk levels for the portfolio return strategically. The level of portfolio risk can be used to maximise expected capital inflows and therefore income. This will be further illustrated in the following example.

Assume a fund with a fund rating of N after six months. The manager has two strategic options: (1) Do not change the strategy which most likely will yield a performance ranking of N at year's end. (2) Increase the risk, which means that at the end of the year he might be ranked G or the ranking deteriorates and the rank will be V. The expected capital inflows are much higher if the fund manager chooses the second strategy. Hence, the fund manager has an incentive to increase the risk level of the portfolio. Brown/Harlow/Starks (1996) argue that the incentive to increase the risk is much less for fund managers who were successful during the first part of the year than for managers who are among

the losers for the same period. This can also be illustrated with an example. A fund manager who has a ranking of G after six months and increases the risk level of his portfolio increases also the risk that his ranking deteriorates to N. A fund manager ranked V after six months has nothing to lose. By increasing the risk of his investment strategy he increases his chances of ending up at an outstanding ranking (G). Hence, losers of the first period have higher incentives to increase the risk for the second period than winners.

Indeed, Brown/Harlow/Starks (1996) can confirm this result in an empirical study of the American fund market¹. Hence, fund managers are sensitive to the incentives of their option like remuneration.

Conclusion

Remuneration of fund managers depending explicitly on their performance is not common. However, the convexity of the relationship between past performance and capital inflows leads to implicit incentives for managers to adapt their risk strategy. Since managers are not optimising the portfolio's risk return relationship this might result in suboptimal portfolio allocations – at least from an investor's point of view. Indeed, Bagnoli/Watts (2000) show that the described behaviour leads to an impaired

fund performance. Furthermore, James/Isaac (2001) show that this behaviour can have an influence on security prices. Hence the incentives described in this article are important for investors as well as for regulators.

Ber/Kempf/Ruenzi (2005) show a convex relationship between performance and capital inflow also for the German mutual fund market. However, the convexity appears to be less strong than in the US – whether German fund managers also react to the incentives is an open question.

Stefan Ruenzi

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¹ The results are, however, not stable over time. Kempf/Ruenzi (2005), for example, show that the direction of risk adjustments depends on the period under consideration.

Mutual Fund Games

A mutual fund investor normally considers a variety of factors when selecting a mutual fund for his portfolio. Aside from features of obvious interest such as asset category, style, cost and company service, past performance tends to be paramount. Portfolio managers of course have a strong incentive to put the best face on performance, to make it look as strong as possible. The fund company in its advertising will help. If

the one-year return does not look good, there will be a tendency to highlight the latest quarter, or perhaps the five-year record is impressive.

Focus on portfolio managers

This tendency to "spin" will not surprise anybody, but in reality portfolio managers and fund companies play quite a few more "games" than this. This

piece will concentrate on portfolio managers. It will look at a few behaviours that have been documented by recent research whose intention is to make performance look as good as possible. The following will be described: 1. window dressing; 2. performance pumping; 3. style drift; 4. tournament-like behaviour; and 5. closet indexation.

To make sense of these games there are two things that must be kept clearly

in mind. First, compensation is normally a given percentage of assets under management. If the percentage is 1 percent, and 100 million US-Dollar is under management, then the compensation is 1 million US-Dollar, while, if there is 1 billion US-Dollar under management, then the compensation is 10 million US-Dollar. So obviously there is a strong incentive to attract fund flows.

Second, what attracts fund flows? The evidence is that performance is the key driver. Studies in the U.S. show that the best-performing funds attract the most money.¹ It turns out that there is an asymmetry to this. While the top quartile (best-performing 25 percent of funds) attracts almost all the new money, the others get little in the way of inflows. Additionally, because of inertia, the worst funds do not experience significant outflows. Naturally there is a powerful incentive to show up in the top quartile, to look as good as possible.

For competitive reasons, mutual fund managers do not have to publicise the exact composition of their portfolios at every point in time. The reason is that, if they had to, it would be fairly simple for someone to imitate their strategies. Periodically, however, for regulatory reasons, they do have to disclose their portfolios. Sometimes in advance of this time, certain transactions will occur designed to remove embarrassing items. This is called window dressing.²

For example, suppose a few stocks have been purchased which have performed quite poorly, thus serving to damage performance. While nothing can be done about performance, at least the “dogs” can be ditched for the sake of appearances. But clearly it is in no one’s interest to undertake such transactions which incur transaction costs just for this purpose. Plus the fact that the portfolio composition becomes less informative to investors.

Portfolio pumping

A related game is portfolio pumping. Some managers have been known to get

a quick performance boost on the last day before required portfolio posting by buying shares in less liquid small-cap stocks that they already hold.³ This buying activity can push up the share prices artificially, temporarily pushing up returns. Once again the point is to transact for the sake of appearances. Again needless transaction costs are incurred and performance distorted.

Style investing

Style investing has increasingly come into vogue. For example, investors who seek to diversify over equity styles can choose both a growth fund and a value fund. The hope is that the growth fund manager can find underpriced growth stocks and the value fund manager can find underpriced value stocks. This way they can both stick to their specialty.

A problem arises when a fund calls itself a value fund (or when it is even objectively slotted into the value category by a company such as Morningstar), but then the manager starts to believe that growth stocks will soon be a better investment than value stocks, so she tilts towards growth. This is called style drift.⁴ The problem with this is that it can defeat style diversification. If someone style-diversifies, he is after all holding some of his money in a growth stock fund, and, if he himself wanted to tilt towards growth, that is a decision that he personally should be making, not the manager of his value fund. It is in fact the job of the manager of the value fund to pick the best value stocks that she can find, that is, to outperform in the value category.

In sports tournaments, the top performers – especially the winner – receive generous compensation. Those not quite reaching this level get very little. This is analogous to mutual funds, where, as I have said, the top funds get almost all the new money. Let’s say “top” is viewed as being in the first quartile (top 25 percent). Once again, the pretty good but not quite top funds get very little.

Sally Strive is the manager of a fund. Performance is measured on an annual basis, but people can do periodic comparisons in advance of the one-year “finish line.” Sally notices that after a half year, she is doing pretty well though not sensationaly. While safely in the second quartile, she is definitely within striking distance of the top quartile. What should she do? Work harder? She already puts in 60-hour weeks so this can’t help. The answer is she can take on more risk.⁵ By doing so she is more likely to rise up to the first quartile. Of course, risk being a double-edged sword, she is also more likely to drop down to the third quartile. But look at it from her perspective. A move up will push her into the first quartile, bring in substantial fund flows and increase her compensation dramatically. Dropping down to the third quartile will not hurt much. So it makes sense to go for it, to exhibit tournament-like behaviour.

Why is this bad? An investor bought Sally’s fund because of its attributes, and one of these was the risk that the fund manager was typically assuming. Assume that normally her risk level was moderate. That’s what the investor wanted. But now she has changed her stance to high risk. This is not what was bargained for.

Now consider another competitor in the same race to the finish line. This individual at the half way point has put up great numbers. As long as he doesn’t stumble he will remain in the first quartile. One way to play it safe is to engage in closet indexation. The idea is to re-arrange the portfolio so that performance will approximate the return on your benchmark index from that point on. Essentially, the manager is playing it safe and placing no bets. He is slavishly imitating the index. But this takes no skill. Why would anyone want to generously compensate a manager for doing what anybody else can easily do?

Individuals behave according to incentives

What are we to make of all these games? One lesson to be learned is that rational individuals behave in accordance with the incentives that are present in their environment. Mutual fund

¹ See Sirri and Tufano (1998). Similar evidence is found elsewhere. For example, see Deaves (2004) for Canadian evidence.

² See Musto (1999).

³ See Carhart, Kaniel, Musto and Reed (2002).

⁴ See Barberis and Shleifer (2003).

⁵ See Brown, Harlow and Starks (1996).

investors are well to be forewarned that, in the current setting, these games will be played and, as a result, performance numbers should be viewed with some scepticism. Going forward, it is in the best interest of all parties to seek to redesign incentive contracts so as to minimise this sort of form-over-content activity. Let's leave games to the athletes!

Richard Deaves

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Stock Options and the Use of Inside Information

Option-based compensation and insider trading are inextricably linked. It is typically correct to assume that corporate managers may have access to information unavailable to outside investors. Signaling theory also dictates that outside investors observe the behavior of such managers in order to determine the nature of inside information not available to the public. One of the signals managers may send to other investors is their own decision to exercise stock options and trade in the firm's stock. A vast number of publications are in existence for the sole purpose of using insider trading as an indicator of future market performance.

Insider trading is defined by the Securities and Exchange Commission (SEC) as "...buying or selling a security, in breach of a fiduciary duty or other relationship of trust and confidence, while in possession of material, nonpublic information about the security". The Securities Exchange Act of 1934 defines most insider trading as illegal, with the exception of corporate insiders, who may exercise options as part of their compensation packages. Section 16(a) of the Securities Exchange Act defines corporate insiders as officers, directors, and beneficial owners of more than 10 percent of equity. The trades of these investors must be registered with the SEC. Typically, insiders with larger companies engaging in the trade of large quantities of stock may even issue

a statement to the media explaining the reasons for the trade.

Explaining the reasons for the trade

The reasons for trade are important. A manager may trade stock for a number of reasons, only one of which involves speculation or the desire to profit from privileged information. Other reasons for trade can be related to liquidity or diversification needs. Liquidity may be important because the manager may have a substantial portion of his/her portfolio in the form of illiquid company stock. Diversification is critical because many managers already have most of their human capital and a substantial portion of their financial wealth tied to the firm. Such a lack of diversification is in contrast with the recommendations of standard financial theory. The final reason that the cause of trade is critical is because the timing of option exercise by firm insiders in order to take advantage of privileged information is not looked upon favourably by the market or regulatory agencies. The ability to profit from this information can reduce faith in capital markets, and thus lead to increased risk and reduced market valuations. Therefore, it behooves federal agencies to protect the integrity of financial markets by monitoring the trade of all investors, especially insiders.

Although there are consequences for managers who blatantly trade in order to take advantage of privileged information, the strong incentive to do so has led to a tremendous amount of research on insider trading. Managers attempting to take advantage of inside information will rarely admit to doing so, which forces outside observers to use inference to determine their reasons for trade. Purchases of stock are easier to decipher than sales, since a purchase of shares typically implies that the investor expects the value of the firm's shares to increase. Sales do not necessarily imply that the insider expects the share price to decrease. Rather, the insider may be liquidating shares in order to pay taxes on the trade, or to diversify his or her portfolio.

Do managers profit from their trades in an abnormal fashion?

One of the ultimate questions being answered in this stream of academic research relates to whether or not such managers profit from their trades in an abnormal fashion, and whether or not outside investors can simply mimic the trades of insiders to earn abnormal profits of their own. Additionally, there are strong theoretical motivations for studying insider trading. A market that is strong form efficient is one in which an investor cannot earn excess returns from

trading on private information. If it is determined that insiders have the ability to profit from their privileged information, this constitutes a violation of strong form market efficiency. Secondly, a semi-strong form efficient market is one in which investors cannot earn abnormal profits by trading on publicly available information. If outside investors are able to earn abnormal profits from mimicking the trades of insiders, this would constitute a clear violation of semi-strong form market efficiency.

Profits from inside information

Early research unearthed meaningful indications that insiders do indeed profit from inside information. The early work of Lorie and Niederhoffer (1968), DeVere (1968), Jaffe (1974) and Finnerty (1976) showed that insiders tended to earn higher returns than the market by trading their own stock. Trades by insiders were found to be predictive of future returns for the given firm in both the positive and negative direction. Additionally, several studies found that the profitability of insider trades was greatest for small firms, those with high earnings/price ratios, and those for which the trading insider had a powerful position within the firm.

These original studies were, however, confused by several confounding issues: First, most of them did not properly adjust for differential risk among various securities. Analysing profits without properly controlling for risk can be problematic, and early stage research did not have the benefit of conventional methods of risk adjustment. Secondly, transactions costs were not properly considered in the measurement of stock returns. Third, it was difficult to decipher whether perceived predictability was due to the use of key fundamental information, or due to the market reaction in response to the trade itself. As investors interpret insider signals, this is going to lead to price reactions, especially in the short run. Fourth, many of the early studies tended to focus on intense buying and selling behaviour, rather than the broader cross-section of insider trading. Only focusing on the extreme trading events can provide misleading results.

Seyhun (1986, 1988, 1992) studied the ability of the market to use aggregated insider trades to predict future market return variation. He finds that a large percentage of future return variation can be predicted by the aggregated trading decisions of firm insiders. This is not surprising, given that insiders in possession of their own private signals for trade may be effectively reacting to broader macroeconomic changes. He argues in his research that managers are not always able to decipher the difference between firm-specific and systematic information in the signals they receive, which can lead to them trading in unison response to the same kind of information. The fact that their aggregated trading behaviour is predictive of future returns serves as evidence that they use private information in their timing decisions.

Mimicking insider trades

Rozeff and Zaman (1988) argue that the reason investors seem to be able to profit by mimicking the trades of insiders is that risk has not been properly measured. The fact that small firms and those with high earnings/price ratios seem to present the greatest profit opportunity is consistent with the small firm effect and the earnings/price effect in stock returns. Small firms and those with high earnings price ratios tend to have higher returns than other stocks, and Rozeff and Zaman (1988) make the argument that the abnormal returns apparently coming from insider trading are due to confusing the two phenomena. When they control for the size and earnings price ratio effects, the excess returns disappear. This paper concludes that while insiders might be able to earn profits from insider trading, outsiders are not likely able to profit by mimicking their trades.

Lin and Howe (1990) further support this argument by showing that high transactions costs preclude investors from being able to profitably mimic the trades of insiders in OTC (Over The Counter) markets. Finally, Eckbo and Smith (1998) study the Oslo Stock Exchange (considered to be an insider's market) and show that even the insiders themselves do not appear to profit from their information.

Meaningful information for investors

Other research seems to show that while all insider trading is not informative, some of it provides meaningful information to investors. Bettis and Vickrey (1997) show that if an investor mimics only the extremely large trades of insiders, they can earn abnormal profits. Additionally, Lakonishok and Lee (2001) show that even in the presence of modern risk adjustments, the insider trades in small firms can be used to predict future returns of the company's stock.

Carpenter and Remmers (2001) perform one of the most comprehensive studies to date on the relationship between stock options and insider trading. They also focus on the "swing rule", which required those in possession of stock options to hold the security six months after the exercise date. After 1991, the rule was changed, effectively removing the holding period. They find that before the removal of the rule, firm executives appeared to time their exercise of stock options in such a way that they were able to earn abnormal profits. Purchases were informative, but sales were not. However, after the removal of the holding period restriction, there is no evidence of timing. The only exception appears to be top executives at small firms. Jeng, Metrick and Zeckhauser (2001) confirm the evidence of Carpenter et. al by showing that insiders can earn abnormal profits, but again, their sales are not informative. They too find that firm size and the position of the insider are highly relevant.

Markets not strong form efficient

The general conclusion of this body of literature is that the markets do not appear to be strong form efficient. There are many cases in which insiders appear to be able to use stock options to take advantage of inside information, and the profits seem to exceed those reasonable for the level of risk incurred. The profitability of insider trades is difficult to measure because the trades are very "noisy" (have multiple possible motivations), econometric models for risk-adjustment are still quite primitive, and it is very difficult to ascertain the true

holding periods of firm insiders. The markets do, however, appear to be semi-strong form efficient.

While the evidence regarding the ability of insiders to profit is mildly mixed, there is very strong proof that investors attempting to mimic the trades of insiders are not able to earn profits beyond the level expected for the risk of the investment. This is especially true for large firms and those that are heavily traded, and is not surprising when analysed in conjunction with literature in other areas of financial research.

The policy implications of this body of research are compelling. It appears that although insiders have the ability to profit from insider trading, the magnitude of this trading relative to other types of trading in the market is very small. At the same time, sufficient monitoring of this trading activity is necessary in light of the SEC's role of maintaining fair markets. While the probability of any outside investor losing money to an insider is very low, the fact that any trader can be a victim of an information asymmetric trade can disrupt the trust and perceived integrity of the financial markets. Fortunately, it appears that most option exercises, especially those which result in an

immediate sale, are due to liquidity or diversification needs, and do not reflect the use of private information. It may behoove the SEC to focus primarily on

trades at small firms, and those trades involving top management. These are the ones most likely to be problematic.

Boyce D. Watkins

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Controlling Agency Costs in Mutual Financial Intermediaries (Part 2)

In the last number of "ZEW Stock Option Watch" we presented the differences in the nature and gravity of the shareholder-manager conflict between joint stock banks and mutual financial intermediaries. We further reviewed the nature of the problem and briefly reviewed classical (motivational) mechanisms to control agency conflicts in mutuals. In this article we evaluate empirical evidence and approach the less studied and more interesting organisational mechanisms adopted by systems of mutuals to compensate for systemic weaknesses in the governance structure of the institutions.

Empirical evidence

Expense preferences theory was tested by several authors on United States Savings and Loans and credit unions. Akella and Greenbaum (1988) perform a test comparing expense preference behaviour by mutual and joint stock savings and loans. Their result is that mutual savings and loans tends to expand deposits and loans beyond profit maximising levels. More recently, Gropper and Beard (1995) arrive to similar conclusions. Emmons and Schmid (1999) test their own theory and find that the data is consistent with the hypothesis

that larger costs associated with financial distress translate into increased relative wage levels. Mester (1987), (1991) and (1993) performed a battery of tests on mutual and stock savings and loans. She finds consistently a higher level of expense preference in mutual savings and loans when compared to stock savings and loans. However, Valnek (1999) finds contrary evidence when comparing UK building societies and stock banks.

In the developing world, a number of tests have recently been undertaken on data covering Benin (Gueyie, et al., (2004)) Colombia (Barona, et al., (2004)) and the Philippines (Desrochers and

Lamberte, (2004)) that test the relationship between size – a proxy of ownership dilution in a mutual institution – of the mutual institution and the exposure to expense preferences or cost efficiency. The results suggest with a remarkable consistency a negative relationship between size and efficiency.

The evidence obtained from savings and loans cooperatives and mutuals is corroborated in other types of financial mutuals. Cummins, Weiss and Zi (1999) find that stock cost frontier dominates the mutual cost frontier. They also find evidence that stocks are more successful than mutuals in minimising costs suggesting the existence of agency problems in the mutual organisational form.

“Coordination” mechanisms to control agency costs in Co-ops

There is a different approach to control shareholder-management conflicts based on organisational tools (hence “coordination”) that is widely used by financial cooperatives and other financial mutuals. Unlike devices that address directly the utility function of agents, coordination mechanisms seek to avoid or reduce the scope of the problem by introducing modifications in the organisation of production. The goal is to control the problem without expensive motivational mechanisms to modify managers’ behaviour in a desired direction. There are two approaches that have found widespread application among financial cooperatives:

- control of financial cooperatives’ size through hybrid organisations,
- use of network “scorecards”.

Both approaches are related to the creation of networks of financial cooperatives tied together by “neo-classical” or hybrid types of contractual relations.

Control of financial cooperatives’ size through hybrid organisations

Sub-goal pursuit predicted by expense preference theory can be expected to be accentuated with diffusion of ownership (Nicol (1967)) which increases managerial discretion. In the case of cooperative institutions, and consistent with Downs “Law of Diminishing Control”, managerial discretion is

positively correlated with the size of the institution. Thus, larger mutuals can be expected to display increasing deviations from the cost minimising optimum. As noted above, the hypothesis was tested and corroborated in several countries. One way financial cooperatives have found to control for expense preference while achieving cost minimising economies of scale is to limit size of institutions through the organisation of networks. These networks exploit economies of scale and scope by pooling the procurement of inputs and the management of infrastructure while keeping individual financial cooperatives independently owned, but tied together through a “neo-classical” (McNeil, (1978)) type of long-term contract. These networks are thus hybrid organisations in the sense of Williamson (1999). This prevents the need to undertake radial growth or mergers to achieve optimal economies of scale and scope. When networks are formed, optimal economies of scale and scope are achieved conserving the size of the individual financial cooperative small. This limits ownership diffusion and thus managerial discretion, reducing dead-weight agency costs and their impact on performance. This technique is used by a large number of financial cooperatives movements worldwide, with examples present in Europe, North America, South America, Africa, and Asia.

Use of network “scorecards”¹

Also associated with hybrid organisations are private ordering mechanisms. These mechanisms are designed to curtail opportunism and insure compliance with norms established for all parties belonging to the network. They are required in hybrid contractual relations due to the fact that “neo-classical” contracts are rarely enforceable through courts and thus require private enforcement substitutes. Private ordering mechanisms are not limited to networks of financial cooperatives. They appear in most inter-firm alliances that involve high commitment of resources to the relation, or more generally, high appropriability hazard. Networks of financial cooperatives typically create regulatory mechanisms which consist of monitoring structures that

establish standards of performance (“scorecards”) for alliance members and monitor their compliance. These scorecards cover a variety of aspects related to the management of the financial cooperatives including risk exposure, cost performance and other manifestations of expense preferences. Most advanced networks of financial cooperatives display these mechanisms. In the case of the Desjardins (Quebec) system of caisses populaires it is the Bureau de la surveillance. In the German Raiffeisen system it is the Auditing Federation. Further, results of the monitoring exercise are broadcast to all members of the networks. Thus, managers of individual financial cooperatives are permanently subject to comparative performance assessments by the monitoring structure and network peers. This exposure, while not eliminating sub-goal pursuit, brackets the deviations from cost minimisation that managers in individual financial cooperatives may engage into. Still unpublished research reveals that networks of financial cooperatives where such private ordering mechanism exist, display lower variance in ratios in measures of expense preference than in absence of these mechanisms.

Conclusion

There exists a certain consensus that mutual financial intermediaries (e.g. financial cooperative end mutual savings and loans associations) are particularly susceptible to the effect of manager-shareholder conflicts. This is due to the high level of diffusion of ownership that is characteristic to these institutions. To control these agency costs, mutual financial intermediaries are not able to deploy the complete set battery of devices available to stock institutions, particularly market based devices such as stock options. However, they have, instead, introduced alternative mechanisms including “motivational” devices (those aimed at modifying the incentives to which managers are subject) and

¹ In our context we are using the expression simply to designate an instrument that translates operations and performances measures into a set of numerical scores. They are usually based on the concept of Kaplan and Norton (1992). Other mechanisms of network control exist. See Wenninger-Zeman (2003) for a treatment of scorecards and other controlling mechanisms in business networks in general.

“coordination” devices (those aimed at modifying the exposure to agency costs through organisation of production). The organisation of networks of many rather smaller institutions that limit ownership diffusion and deploy private ordering mechanism within the network are examples of these “coordination” mechanisms. They tend to limit the impact of agency costs, improve performance and technical efficiency and allow financial cooperatives to achieve high levels of performance in competitive financial markets.

Klaus P. Fischer

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About the authors

Richard Deaves, Ph.D.,

is professor at DeGroote School of Business, McMaster University Hamilton, Ontario/Canada, and affiliated to the Center for European Economic Research (ZEW).

Dr. Stefan Ruenzi

is assistant professor at the Seminar für ABWL und Finanzierungslehre – Cologne University and member of the Centre for Financial Research (CFR) Cologne.

Boyce D. Watkins, Ph.D.,

is assistant professor at Syracuse University, New York/United States.

Klaus P. Fischer, Ph.D.,

is professor at Laval University, Quebec/Canada.

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