Private Bankers on Private Banking:
Financial Risks and Asset Liability Management[♦]

Abstract

We analyse private bankers' views on the raison d'être of their profession, their clients' main financial risks, as well as the professionals' opinion on introducing asset liability management (ALM) to private banking. Although practitioners agree on the importance of tailored solutions for their client's primary risks such as unexpected inflation, they are not satisfied by the current risk management tools at hand to advise their clients, neither by the overall risk management service provided. Against this backdrop, this survey shows that ALM is considered to be a promising concept to strengthen advisory quality in private banking.

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1.   Introduction

Over the past decade, private wealth management has become a profitable business for banks and asset managers around the globe. According to the private banking and wealth management survey by Euromoney [2008], global private banking assets rose to USD 7.6 trillion in 2008 from USD 3.3 trillion in the year before. Along with this growing market, many banks and asset management firms entered this lucrative banking segment, resulting in an increased competition within the industry. These changes in the market environment led the banks to renew their attempts to improve existing client relationships and develop new tools to enhance advisor effectiveness.

Sophisticated and customized risk management is certainly a key element of any successful private banking strategy – and an important means to differentiate between industry competitors[1]. A new promising concept to strengthen both risk management and advisory quality is the so-called asset liability management (ALM) approach. Asset liability management denotes the adaptation of the portfolio management process in order to handle the presence of future financial objectives or constraints. Although widespread used by institutional asset managers, this approach to money management is rather new to private banking. As opposed to recent academic publications (see e.g. Amenc et al. [2007a]) which have brought forward the potential benefits of employing ALM techniques in private banking, practitioners have surprisingly been less inclined to implement this new methodology in their day-to-day business so far.

The objective of this paper is to offer insights into the perception that private banking professionals have on their clients' financial risks and the current situation of risk management in their profession. In addition, we use the case of ALM to explore the private bankers' disposition of introducing a new asset management technique to their industry. To get an idea about the

practitioners' views, we analyse the responses to a survey among a sample of private bankers and asset managers on these topics.

As recently highlighted by Campbell [2006], financial economists have often neglected the financial needs and objectives of households. By assuming complete markets, infinite time horizons, or the absence of borrowing constraints, many of the textbook solutions in finance are completely inappropriate for everyday private banking problems. In this light, not only the need for more research in household finance is evident, but also the judgment of practitioners on new theoretical advances in finance is essential. First of all, private bankers are close to the real needs of customers. Hence, their view is important for academics when devoting research effort to an applied topic like household finance. More important, the opinion of private bankers is crucial when it comes to the decision whether to implement new methodologies to advise wealthy clients or not. Only if private bankers are convinced about the benefits of a new concept, theoretical advantages can generate benefits in practice. We thus hope to fill a gap with this survey, contributing to a better understanding between academic studies and industry practices in private banking.

This paper draws on recent academic advances in asset liability management. An early attempt of incorporating liability constraints in optimal portfolio theory has been made by Merton [1993], who looks at the allocation decision of a university that manages an endowment fund. A more recent reference for ALM in institutional investment in general is by Zenios and Ziemba [2006]. Finally, applications of ALM techniques in private banking are rather new to the literature. Two first works are by Merton [2003] and Amenc et al. [2007a]. Merton [2003] stresses the importance to incorporate family's targeted expenditures, i.e. future liabilities, into the household's financial planning. Amenc et al. [2007a] show that the standard optimal portfolio allocation is no longer optimal in the presence of future financial constraints faced by the client.

By taking into account such constraints, portfolio advice based on ALM techniques can provide substantially better solutions to the needs of private clients.

The ALM approach to private banking is also related to goal-based asset allocation, as brought forward in the behavioral finance literature. Among others, Barberis and Thaler [2003] and Nevins [2004] have stressed that individual investors often prefer investment strategies that focus on their multiple investment goals which may have different time horizons or risk profiles. Similar to goal-based asset allocation, the main point behind using ALM techniques is to recognize that an individual's portfolio should be tailored to his spending or consumption objectives and that the optimal portfolio would be the one that perfectly matches these objectives. ALM then uses the tools of modern portfolio theory to incorporate individual goals into the portfolio construction by creating a single liability benchmark that reflects all objectives. Goal-based strategies share the concern over portfolio customization relative to investment objectives, but separately address each goal. For a detailed overview on goal-based asset allocation, see Brunel [2006a]; Brunel [2006b] and Horvitz and Wilcox [2007] discuss the pros and cons of these investment strategies.[2]

To our knowledge, this study is the first to investigate financial risks, the quality of risk management, and the view of employing ALM techniques in private banking. As compared to many surveys in private wealth management, such as the PWC Global Private Banking Survey [Watherill, 2007], we do not provide an analysis of the private banking market, but rather look at financial risk management practices in private wealth management.

This survey shows that practitioners indicate that the ability to provide customized solutions is the main added value of their business. However, when asked about their the perception of current advisory quality of private banking, many respondents reveal that they are not satisfied by the current risk management tools at hand to advise their clients, neither by the overall quality of the risk services provided.

In this light, we find that practitioners believe that introducing ALM concepts to private banking is promising: 87% of the survey respondents see the potential benefits of ALM for the private wealth management business. The main advantage of ALM is considered to be its ability to manage the clients' long-term risks. However, there are some challenges as well. Many practitioners perceive ALM techniques to be highly complex. They thus do not only fear a low acceptance by the wealthy individuals, but see as well the challenge of their private banking teams to successful implement this new tool. When analyzing the respondents' motivation for their answers, we reveal that the main reason for the practitioners' positive judgement on ALM is the perceived poor quality of current risk management devices.

This paper proceeds as follows. In the next section, we shortly outline the idea of introducing asset liability management to private banking, and present an illustrating example. Section 3 outlines the methodology and data. The main results of the survey, the practitioners' view on financial risks in private banking, its mission, and the respondents' opinions on ALM, are presented in section 4. The conclusion in section 5 offers some implications of this research for private banking practices.

2. Asset Liability Management in Private Banking

The proximity to clients is often seen as the raison d'être for private wealth management. Especially a private banker's ability to find customized solutions to the very individual clients' needs is important for a successful private banking business. Yet, when it comes to tailor an investment strategy that takes not only the client's risk preferences into account, but also reflects the exact spending objectives and time horizon of his investments, appropriate investment guidance is often missing to date.

Asset liability management (ALM), widespread used by institutional investors, might be a suitable answer to such complex demands of private banking. The basic idea of all ALM tools is to incorporate future liability, such as pension payments or large investments, directly into the portfolio optimization process, thereby providing a better match between investment returns and payment obligations.

In this section, we first present shortly the rise of ALM concepts in institutional investment, and their standard methodologies employed. Then we discuss the possible advantages that ALM could provide for the private banking industry.

2.1. Asset liability management techniques for institutional investors

Before the stock market downturn from 2000 until 2003, institutional investing of pension funds was too often seen as a simple asset management task: the search for the optimal portfolio with a clear focus on high expected returns. In the years that followed, these investments – generally heavily tilted towards equities – lost dramatically in value. In addition, bond prices increased considerably following the cuts in interest rates so that the liabilities of the pension funds augmented, thereby creating a severe mismatch between assets and liabilities. In many cases, the plan sponsor company had to fill the gaps, with sometimes considerable negative financial consequences.

As a result of this disastrous experience, pension funds started again to pay attention to their primary obligations, i.e. the pensions to be paid in the future. This change led in the following to some renewed interest in money management approaches that take the liabilities explicitly into account, called asset liability management (ALM).

The objective of ALM is to construct optimal investment portfolios that reflect the fund's future payment obligations. Thus, ALM always faces the challenge of finding an optimal trade-off between high investment returns and a good congruence between the maturities of investments and pension payments.

The best liability match can be achieved by holding a portfolio of inflation-indexed zero bonds, with maturing dates just when the pension payments have to be spend. This approach, called cash-flow matching, involves hence ensuring a perfect static match between the cash flows from the portfolio of assets and the commitments to the liabilities. The primary drawback is however the very low average returns.

Surplus optimization on the other hand focuses on achieving higher returns of the investment portfolio in a concern to reduce the level of contributions. It involves the introduction of asset classes to the portfolio that are not perfectly correlated with the liabilities, such as stocks. By taking on risky assets, the portfolio however no longer ensure a good liability match.

In attempt to reconcile the objectives low risks and high returns, the liability-driven investment (LDI) techniques have been proposed. Following this approach, a fraction of the assets are invested into a so-called liability-matching portfolio which has a primary focus on ensuring a good match between portfolio payments and the pension obligations. The rest of the assets are invested into a portfolio that maximizes the investment returns, i.e. to generate a high performance. The exact repartition between both portfolios depends finally on the preferences of the investor. LDI is hence a combination of immunization strategies (risk management) and standard asset management (performance generation)[3].

2.2. Applying asset liability management to private banking

Private households often face the same problem as pension funds and institutional investors: setting up an investment strategy that provides enough cash when specific financial obligations are due, but without scarifying too much of potential returns. Given the high expertise in ALM for institutional investments, it appears straightforward to adopt existing expertise to the challenges of private banking. The idea is simple: in analogy to the ALM techniques for pension funds, private banking could create liability-matching portfolios to achieve an optimal trade-off between high returns and a good match of future obligations.

The problem with existing solutions for private asset management, such as private pension or savings plans, is that the relevant factors for an optimal investment (time horizon, savings objective, risk preferences, and savings contribution) are rarely sufficiently combined[4]. Hence, although the bankers' advice might be beneficial from a risk perspective, the client's liabilities are not well taken into account. In contrast, ALM allows to merge the various needs for tailored banking solutions, offering two major advantages: First, the time horizon of the investment is explicitly reflected (as opposed to standard asset management, which often implicitly assumes an infinite time horizon). Second, the client's exact savings objective is specified, allowing for a much better risk hedging of the investment (compared to asset management that implicitly assumes that all investments are identical in terms of risk). By explicitly including individual liabilities into the asset allocation decision, it is possible to construct superior portfolios, since solutions which might be optimal from an asset management perspective are usually no longer efficient when the liabilities are taken into account.

In what situations could ALM add value for private banking clients? First of all, ALM could be useful for private retirement plans. In close analogy to the objective of pension funds, the expected real pension level is then the liability of the costumer. By using ALM based investment

strategies, private pension plans could be better protected from inflation risk than standard asset management solutions, as illustrated in the example below. Another, related example could be the situation of a wealthy retiree, who wishes to maintain a certain (real) standard of living, but also to maximize the bequest for her children[5]. Finally, wealthy families might be interested in making a large acquisition in the near future, such as buying a house, plane or boat. When using ALM techniques, the related price risks of such an investment can be much better taken into account[6].

2.3. A motivating example: private retirement plans

Consider the situation of a 65-year-old individual who just retired, and who would like to receive a stream of inflation-protected payments over the next 20 years by investing a fixed amount of money in a private retirement plan. In this case, the investor's liability is given by the stream of annual real pension payments, which we normalize without loss of generality at \$100.[7] Based on this example, we demonstrate the potential benefits of ALM for private banking clients and illustrate the pros and cons of each of the different ALM methods presented in section 2.1.

<u>Cash-flow matching</u>

Quite evidentially, the cash-flow matching approach to ALM offers the best protection against inflation risk. In this example, exact cash-flow matching can be achieved by forming a portfolio of 20 zero-coupon inflation-protected securities (TIPS) with maturities from 1 to 20 years.[8] This way, the retiree can hedge all inflation risk since the probability of not meeting the desired level of pension payments (shortfall probability) is equal to zero. However, cash-flow matching is very expensive since the present value of this perfect liability-matching portfolio (LMP) is very high.

In a simulation based on standard assumptions on inflation and the real risk-free rate, one can show that the amount of money that has to be invested is about $1,777, which is very close to the expected real payments of $2,000 (20 year times $100).[9] Put differently, little is gained by pursuing this save investment strategy.

Surplus optimization

Next, we turn to surplus optimization strategies that attempt to generate higher returns by including riskier assets such as stocks and nominal bonds into the portfolio. First, we examine the optimal fixed-mixed portfolio when the liability matching portfolio of TIPS (see above) is available; then we examine the optimal solution without the LMP. The results of the simulation are displayed in exhibit 1, which relates the expected surplus of the investment (expected returns from the pension scheme exceeding the scheduled pension when investing the equivalent of the present value of the LMP in the portfolio, i.e., $1,777) to the surplus variance for different degrees of risk-aversion.

[EXHIBIT 1 goes here]

We can draw two important conclusions from this graph. First, the higher the risk-aversion of the retiree, the more the portfolio of his pension scheme will consist of low-risk bonds and the LMP, and thus the lower both the expected surplus and surplus variance (region between points A and B in the graph). If the investor is infinitely risk-averse, the solution coincides with the cash-flow matching solution, and the investor puts all his money in the risk-free LMP (point A).

Second, the figure underlines the importance of the LMP for the optimal investment portfolio. As the difference between the thin and the bold line in exhibit 1 shows, for a given expected surplus level, the surplus volatility is much lower if the LMP is available. When comparing for example

point B and B', the expected surplus of $377 can be achieved only at a 50% higher volatility if the construction of a LMP is not possible. Of course, the difference between optimal portfolios decreases with the investor's risk aversion: risk-seeking investors will mostly invest in stocks and bonds anyway, see e.g. the points C and C'.

Including riskier assets can augment the returns, but increases the riskiness of the pension plan. To see this more clearly, we examine the surplus optimization strategy (with LMP) in terms of shortfall probability and necessary nominal contribution for the investment (i.e., the amount of money that has to be invested in order to generate an expected surplus equal to zero). If the risk preferences of the investor are captured by point B in the graph, for example, there is a probability of around 12% not meeting his objective. In contrast, necessary nominal contributions reduce from $1,777 to $1,557, which corresponds to a relative saving of 12% compared to the cash-flow matching.

Next, exhibit 2 compares the set of optimal ALM solutions with the efficient portfolios obtained from the standard asset management approach of investing.

[EXHIBIT 2 goes here]

This exhibit shows the primary advantage of ALM techniques compared to standard asset management: for all given levels of surplus variance, the ALM approach yields higher expected returns than the AM (asset management) approach. Hence, portfolios that are efficient in the AM sense are generally not efficient in the ALM sense.

Liability-driven investment (LDI)

Finally, we turn to liability-driven investment (LDI) solutions. LDI can be either static, i.e., with a constant repartition between the LMP and the performance seeking portfolio, or in a dynamic style so that the relative fraction of both components can change over time depending on the market situation. By adjusting to changing market conditions, dynamic LDI solutions allow to limit losses while maintaining the upside potential of riskier asset classes. Since LDI solutions are most beneficial when set up dynamically, we will focus on this variant.

An interesting variant of dynamic LDI strategies recommends that the fraction of wealth invested to the performance seeking portfolio is equal to a constant multiple of the so-called cushion, which is defined as the difference between total asset value and a self-imposed floor. Referring to the previous simulation study, one can show that dynamic LDI strategies can significantly lower the shortfall probability compared to surplus optimization strategies. For example, an LDI investment strategy that yields an expected surplus of $204 (with a surplus volatility of $389) exhibits a shortfall probability of 6.7%, which is only half of the shortfall probability of the surplus strategy represented by the point B (which comes at only a slightly higher volatility of $424).

3. Methodology and Data

3.1. Methodology

The survey was carried out using an online questionnaire. An e-mail containing a link to this questionnaire was sent out to private bankers and family offices, the target audience of the study on ALM, but also to asset management companies and related institutions that have a special

focus on optimal asset management strategies of wealthy clients. The mail was sent out in January 2008. The first response was received on January 17, 2008, the last on March 7, 2008. The questionnaire consisted of eight multiple choice questions, including the possibility to add some further comments related to the issue. In a first series of questions, the survey participants were asked about their view on the major task of financial management for wealthy individuals and the private banker's fundamental source of added value for their customers. The next set of questions turned to the role ALM techniques could potentially play within the private banking industry, including an analysis of possible advantages and limitations when implementing them in practice. In the last set of questions, the questionnaire finally asked the participants about their view on the most important risk factors for private banking clients and whether these risks are currently adequately managed.

3.2. Data

Most of the 59 respondents of the survey are based in Europe, a large part of which are from France, Switzerland, and the UK. The exact repartition of the respondents' profession can be seen on exhibit 3. With 37% out of the survey participants, private bankers and wealth managers are the largest professional group represented in this study. Asset management companies follow directly after, with roughly 32% of the sample. The next largest group (8%) is institutional investment consultants. Professionals working at family offices and risk managers represent another 5% of the respondents each. The remaining 12% finally belong to other professionals within the financial service industry, such as insurance companies or brokers.

[EXHIBIT 3 goes here]

3.3. Limitations

Of course, similar to any survey, the survey suffers from some problems. First of all, the survey respondents had no real economic incentive to report their true beliefs on the issues addressed in the questionnaire. Although this might pose a problem to the results of the study, we do not see any compelling motivation for manipulating the answers in one or the other direction. Especially the rather critical answers about the respondents' own profession (see exhibit 6 in section 4.1) might indicate that the answers correspond to the true beliefs, at least on average.

Next, the sample of survey participants was not drawn randomly from the target population for this study, i.e. private bankers and family offices, but send out to broad sample of contact persons of whom we got valid e-mail addresses. This could create a sample selection bias for the study. What is more, participation was entirely voluntarily, adding a nonresponse bias to the sample. Private bankers that responded to the questionnaire could have on average different views than the overall average of private bankers. The most obvious reason for such a bias is the respondent's knowledge of ALM: any banker who is familiar with the concept is more likely to respond to the questionnaire than someone to whom the idea is completely new[10]. Although the results of this study might be biased towards practitioners that are familiar with ALM, the results are themselves interesting. Since only informed practitioners can decide upon introducing ALM within their business, they have ultimately an impact on the industry practices. Hence, we believe that the overall survey results are representative for the view of a population of relatively sophisticated European private banking practitioners.

4. Results

In this section, we present the main results of this survey and discuss possible explanations for the respondents' answers. First, we analyse the financial managers' perception of the main financial risks in private banking. We then explore what they consider to be the mission of their profession. Using this information, we investigate the practitioners' view of introducing asset liability management techniques to private banking and analyze the motivation for their beliefs. Finally, we check whether private bankers and family offices differ in their views from the rest of the sample.

4.1. Financial risk and the quality of risk management in private banking

Exhibit 4 shows what practitioners believe to be the main financial risks that private banking clients are generally exposed. Most of the respondents (74 %) indicated that (unexpected) inflation was one of the most severe risks for their clients. Next important is the risk induced by stock price movements (48%), followed by the risk related to changes in interest rates (45%) and property prices (29%). Finally, 28% of the participants reported other additional sources of risk for private banking clients. Within this category, the most cited risks are unexpected changes in taxation (10%), misleading advice by the bankers themselves (7%), and very individual risks such as sudden changes of the client's family or employment situation (5%). Whereas inflation and unexpected changes in asset prices are widely accepted sources of financial risk, it is striking that some practitioners see misleading advice by their own profession as main risk for their clients.

[EXHIBIT 4 goes here]

Next, financial managers were asked about their satisfaction with the tools for asset allocation and risk profiling they have at hand when advising clients. Two thirds (66%) of the respondents are outright dissatisfied with their devices; only about 16% are happy with the tools they have at their disposal (see exhibit 5).[11]

[EXHIBIT 5 goes here]

More than the majority of the survey participants think that the various risks cited above are not well managed within current private wealth mandates at present (56%), as shown in exhibit 6. A quarter of the respondents (25%) argue that the goal in private banking is not to manage those risks, but to deliver the best risk-return ratio. Only 7% are satisfied by the way asset and personal wealth managers cope with their clients' risk exposure.

> **Result 1:** *Practitioners within the private banking industry are neither satisfied by the risk management tools at their disposal, nor by the overall quality of risk management services provided.*

The judgement on the quality of risk management could depend on the type of risk which is perceived to be most important by the private bankers. Interestingly, the perception of poor quality of risk management is fairly independent of the respondents' view on main financial risks. The only exception is interest rate risk. 42% of practitioners that are concerned about interest rate risk are dissatisfied about the risk management quality, which compares to 69% of the other respondents. A Fisher Test shows that this difference is statistically significant $(p<0.05)$[12]. Apparently, practitioners with a focus on interest rate risk face fewer challenges in their risk management, though the rate of dissatisfaction is still rather high.

[EXHIBIT 6 goes here]

The negative perception of the overall risk management quality might be a direct consequence of the practitioners' poor risk management devices. Indeed, it appears to be a sensible conjecture that private bankers' dissatisfaction with risk tools has an effect on the perceived risk management quality. We can observe such a relationship in the data: 71% of the respondents who are dissatisfied by their tools believe that the client's financial risks are not well managed, while only 29% of the other respondents believe that risks are not well managed (Fisher test: $p < 0.01$).

> **Result 2:** *Practitioners who are dissatisfied with their advisory tools are more critical about the overall risk management quality in private banking.*

This strong effect indicates that better risk management tools could enhance the overall risk management quality.

4.2. The mission of private banking

As exhibit 7 reports, a large majority (95%) of the survey participants agrees that financial consultancy in private banking should go beyond mere tax and legal advice, but should also take the clients' financial constraints and private wealth objectives into account. Quite evidently, this stresses the importance of tailored solutions to achieve the clients' financial goals.

[EXHIBIT 7 goes here]

In a similar vein, 71% of the survey participants cited the ability to provide customized financial management to clients as primary source of added value in private banking (exhibit 8). 22% of the respondents see the predominant benefit in their availability to act as contact person for their clients' various requests. Only 3% think that the principal added value of private bankers is to provide access to special investment products which are not available in the retail banking segment. Similarly, a mere 3% stress the importance of tax and legal advice as key skill for private bankers, which is consistent with the answers to the previous question.

[EXHIBIT 8 goes here]

Result 3: *The majority of practitioners consider the provision of customized financial solutions as the primary source of added value in private banking.*

The bottom line is that practitioners of private banking see the personalized financial advice as their most important aspect of their day-to-day business.

4.3.   Applying asset liability management to private banking

Finally, the survey turned the issue of applying asset liability management to private banking. The large majority of the survey participants – 86% of the respondents – share the opinion that ALM techniques could be a source of progress in private banking (see exhibit 9).

[EXHIBIT 9 goes here]

Result 4: *Asset Liability Management is perceived to be a source of substantial improvements within the private banking industry.*

What kind of possible obstacles do practitioners have in mind when introducing this rather new technology into the private banking business? As shown in exhibit 10, it turns out that the main drawback for implementing ALM in private banking is assumed to lie within the private banking teams themselves: 55% of the respondents expressed concerns about the difficulties of finding the relevant expertise among the bankers to successfully generate added value with this new tool, which is perhaps the most striking result of this study. The inherent complexity of ALM, a much related point, is seen as the next important challenge for its successful application (47%). It is interesting to note that a possible lack of understanding from the side of the clients is perceived as a challenge by a lower percentage of respondents (33%) than is the potentially missing expertise of private bankers. Another 24% mention that the long-term ALM techniques are not really appropriate for clients who have a rather short-term view of their relationship with their private wealth manager.

[EXHIBIT 10 goes here]

Result 5: *The main concern about applying asset liability management is lack of expertise within private banking teams.*

When it comes to the benefits of ALM, most of the respondents (59%) see its main advantage in ALM's ability to manage the client's long-term risks (see exhibit 11). Next important, roughly 51%, argue that ALM tools help to establish more coherence to the client's financial choices.

Related to this advantage, many bankers (41%) see in the ALM a welcomed possibility to get more consultancy structure when advising a client. Educational benefits are also attributed to the ALM concept. 39% of the survey participants point out that by using ALM in their everyday financial advisory business, their clients could become more sensitized to their risk exposure and

its role for long-term investment strategies. Another 20% of the respondents also believe that ALM could avoid the current practice of banker's offerings that are solely based on a short-term performance and thus might create client loyalty. Finally, 8% cited other reasons for which ALM could be helpful in the private banking business. Some of these additional comments indicate that ALM is likely to improve the understanding of the client's true financial goals; others see the ALM as one of the key tools to differentiate the various private banking competitors.

[EXHIBIT 11 goes here]

Result 6: *The main advantage of asset liability management is perceived to be its ability to manage the client's long-term risks.*

In summary, although an overwhelming majority recognizes that ALM offers new possibilities and advantages; challenges for successful implementation are clearly recognised as well. In the following, we will analyze the motivation for the respondents' answers in more detail.

In fact, there might be three reasons why practitioners could be inclined to think positively about ALM: first, the negative judgement on current risk management devices (see exhibit 5), second, the poor perception overall financial risk management (see exhibit 6), and third, the perceived importance of customized solutions for the private banking business (see exhibit 8).

To analyse which of these reasons is most important for the positive view on ALM in general, we first examine what the ALM *supporters* (i.e. those who believe that ALM could be a source of progress) think about these essential issues in private banking. We find that 73% of the ALM supporters have a preference for customized private banking. Equally, 73% of these supporters are not satisfied with current risk management tools. Finally, less pronounced, 59% of the supporters believe that financial risks are not well managed within the private banking mandates at present.

Next, we analyze how these results differ from the judgments of the *non-supporters* of ALM. We discover that respondents that are not convinced about ALM are also less worried about the current situation of private banking and the importance of customized banking solutions. 59% of the non-supporters are concerned about customized banking solutions, only 38% are worried about the current risk management quality, and a mere 13% is dissatisfied about their risk management tools at hand. Especially the last difference is highly significant (Fisher-test: $p<0.01$). Put differently, non-supporters of ALM tend to be satisfied with their current risk management devices.

> **Result 7:** *The main motivation for the respondents' positive judgement on ALM is the lack of satisfactory risk management tools and the desire to offer customized banking solutions for private banking clients.*

Especially the perception that high-quality risk management tools are missing seems to be the most important motivation for many practitioners' positive view on ALM: almost all of the critics of current risk tools (97%) are convinced by the improvements ALM can offer.

4.4. Self-assessment of private bankers and family offices

Since this study is devoted to private banking, the target group of the survey – private bankers and family offices – might answer more favourably to questions about the quality of private banking; either because of self-misjudgement, or to present their profession in a good light. We hence tested whether private bankers and family offices report differently about the quality of risk management in private banking.

We cannot reject to the hypothesis that private bankers respond differently to the questions on the quality of risk management and the quality of risk management tools. However, we find that only 40% of the private bankers and family offices are worried about finding relevant expertise within private banking teams to implement ALM techniques, compared to 67% of the rest of the respondents (Fisher test: $p < 0.1$).

> **Result 8:** *Private bankers and family offices do not differ in their views about the current quality of risk management and risk management tools within private banking compared to the rest of the survey respondents. However, they perceive private banking teams to be more competent than other respondents.*

These results indicate that private bankers are similarly critical about the service quality of private banking, but that do not attribute this to the lack of competence within the private banking teams.

5.   Conclusion

This paper presents the results of a first comprehensive survey across private bankers and related practitioners on the current situation of risk management in private banking, and the potential advantages and challenges of introducing asset liability management to this industry segment.

The results show that the majority of practitioners consider the provision of customized financial solutions as the primary source of added value in private banking. However, practitioners are currently not satisfied by their risk management tools to advise their clients; neither by the overall quality of risk management services provided. Against the backdrop of this critical judgement, ALM is perceived to be a source of substantial improvements within the private banking industry. The main advantage of asset liability management is perceived to be its ability to manage the client's long-term risks. Still, practitioners worry about is lack of expertise within private banking teams when it comes to implementing this new technology.

When analyzing the respondents' motivation for their answers, we reveal that practitioners who are dissatisfied by their advisory tools are more critical about the overall risk management quality. In this vein, we find that the main reason for the practitioners' positive judgement on ALM is the perceived poor quality of current risk management devices.

The results in this paper have a number of implications for the private banking industry. First of all, the overwhelming practitioners' dissatisfaction with their risk management tools and the quality of risk management services provided is a clear sign that private banking needs a general overhaul of their risk management strategies and concepts. Indeed, by showing that better risk management tools could enhance the overall risk management quality in private banking, we underpin the relevance of sophisticated risk devices for a successful private banking business.

Second, ALM might offer a solution to current these challenges in private banking, providing structured guidelines for better risk assessment and management. Still, as our results show, a number of challenges remain before such concepts may be widely implemented. Given that introducing ALM to private banking is a recent proposal, the existence of such challenges is no surprise.

Our results highlight that the management of financial risks for private clients faces at present some challenges which could be overcome by implementing new risk management devices, such as ALM techniques. From the survey results, we also suggest that future research on ALM should try to address the specific need of private banking in more detail, for example, by including tax issues.

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Exhibits

Exhibit 1: Efficient retirement portfolios when the liability matching portfolio (LMP) consisting of TIPS is available (bold line) and when it is not available (thin line).
Key assumptions of this simulation: Long-term mean reversion level of the real interest rate: 2.8%; long-term mean reversion level of the inflation rate: 4.8%. Equity markets are assumed to follow a regime-switching model with mean excess returns of 0.8% and -1.1%, respectively. The example is taken from Amenc et al. [2007b], which is based on a model by Ahlgrim et al. [2004]. For further information of the employed parameters and models chosen, please refer to these documents.
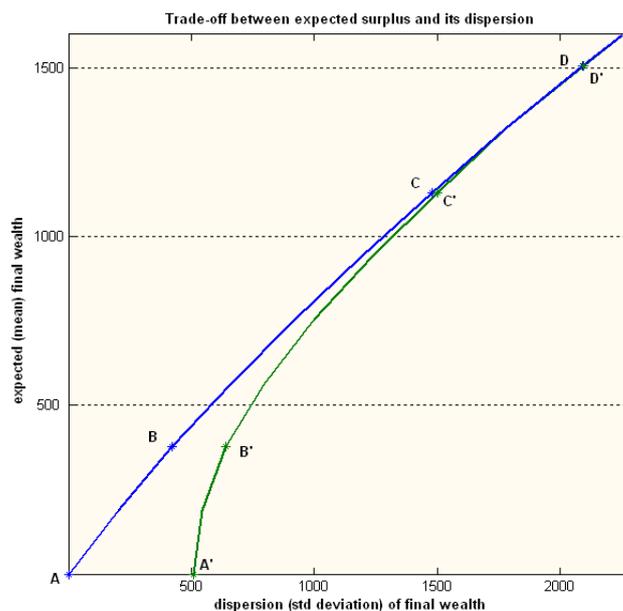
Exhibit 2: Efficient retirement portfolios when implementing an ALM solution (surplus optimization) when the liability matching portfolio exists (bold line) and efficient portfolios when implementing a standard AM (asset management) portfolio in a mean-variance surplus space.

Key assumptions of this simulation: Long-term mean reversion level of the real interest rate: 2.8%; long-term mean reversion level of the inflation rate: 4.8%. Equity markets are assumed to follow a regime-switching model with mean excess returns of 0.8% and -1.1%, respectively. The example is taken from Amenc et al. [2007b], which is based on a model by Ahlgrim et al. [2004]. For further information of the employed parameters and models chosen, please refer to these documents.
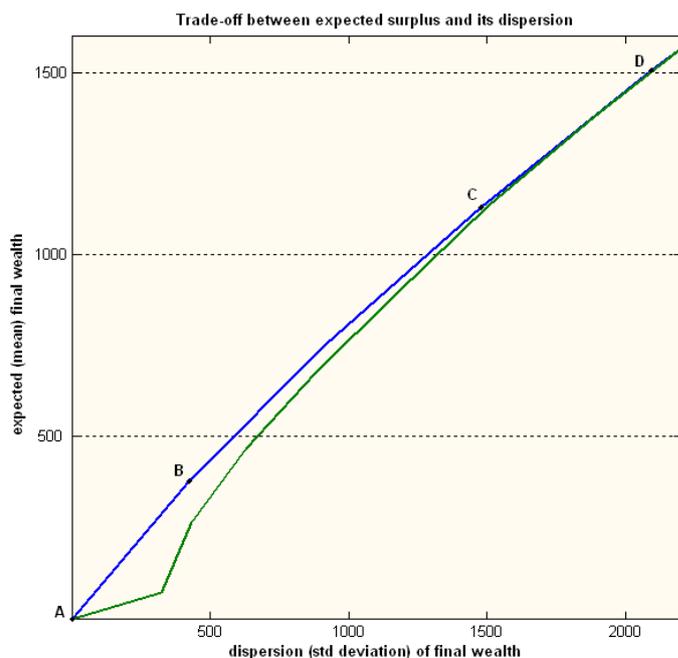
Exhibit 3: Type of Activity of the Respondents (multiple-choice question, select one).

	Respondents	Percentage
Private Banker / Wealth Manager	22	37%
Asset Management Company	19	32%
Institutional Investment Consultant	5	8%
Family Office / Family Office Consultant	3	5%
Risk Manager	3	5%
Other	7	12%
Total	59	100%

Exhibit 4: What are the main financial risks to which private wealth clients generally are exposed (multiple-choice question, select many)?

	Respondents	Percentage
Inflation	43	74%
Share prices	28	48%
Interest rates	26	45%
Property prices	17	29%
Other risks	16	28%
thereof: Changes in taxation	6	10%
Misleading advice from bankers	4	7%
Individual risk (private business employment risk)	3	5%
Total	58	

Exhibit 5: Are you satisfied with the allocation and risk profiling tools that private wealth managers have at their disposal (multiple-choice question, select one)?

	Respondents	Percentage
Yes	9	16%
No	38	66%
No answer	11	19%
Total	58	100%

Exhibit 6: Do you think that the risks are well managed within current private wealth mandates (multiple-choice question, select one)?

	Respondents	Percentage
Yes	4	7%
No	33	56%
The goal is not to manage those risks, but to deliver the best risk-return ratio	15	25%
No answer	7	12%
Total	59	100%

Exhibit 7: Do you agree with the idea that financial management, rather than simply legal and tax consulting, should take the client's constraints and private wealth objectives into account (multiple-choice question, select one)?

	Respondents	Percentage
Yes	56	95%
No	2	3%
No answer	1	2%
Total	59	100%

Exhibit 8: What do you think is a private banker's principal source of added value (multiple-choice question, select one)?

	Respondents	Percentage
Capacity to provide customized financial management	42	71%
Being available to reply to the client's various requests	13	22%
Providing access to particular investment products that cannot be found in the retail markets	2	3%
Employing tax and legal skills in order to optimise the client's tax affairs and protect the client's assets	2	3%
Total	59	100%

Exhibit 9: Do you agree with the idea that the use of Asset-Liability Management techniques could be a considerable source of progress and added value for private banking (multiple-choice question, select one)?

	Respondents	Percentage
Yes	51	86%
No	3	5%
No answer	5	8%
Total	59	100%

Exhibit 10: What would limit the use of ALM techniques in private banking (multiple-choice question, select many)?

	Respondents	Percentage
Difficult to find the relevant expertise within private banking teams	32	55%
Complexity	27	47%
Not easy to explain to the client	19	33%
Techniques are not really appropriate for clients who have a short-term view of their relationship with their private wealth manager	14	24%
Total	58	

Exhibit 11: What do you see as the advantages to an ALM approach to private banking multiple-choice question, select many)?

	Respondents	Percentage
Enables the client's long-term risks to be managed	35	59%
Lends coherency to the client's financial choices	30	51%
Tool that provides structure for the consultancy approach with the client	24	41%
Instructive and educational in terms of risk and a long-term approach	23	39%
Avoids competition between offerings that are solely based on a short-term performance and creates client loyalty	12	20%
Other	5	8%
Total	59	

Biographies

Noël Amenc is Professor of Finance and Director of Research and Development at EDHEC Business School, where he heads the Risk and Asset Management Research Centre. He has a Masters in Economics and a PhD in Finance and has conducted active research in the fields of quantitative equity management, portfolio performance analysis, and active asset allocation, resulting in numerous academic and practitioner articles and books. He is Associate Editor of the *Journal of Alternative Investments* and a member of the scientific advisory council of the AMF (French financial regulatory authority).

Felix Goltz is head of applied research at the EDHEC Risk and Asset Management Research Centre. He conducts research in empirical finance and asset allocation, with a focus on alternative investments and indexing strategies. His work has appeared in various international academic and practitioner journals and handbooks. He obtained a PhD in finance from the University of Nice Sophia-Antipolis after studying economics and business administration at the University of Bayreuth and EDHEC Business School.

David Schröder is a Lectuter in Finance at Birkbeck College, University of London. David obtained his PhD in Economics from the University of Bonn. During his doctoral studies, he was also affiliated with the Centre de Recherche en Economie et Statistique (CREST) in Paris. His research focuses on empirical asset pricing, and investment & decision theory. He is a member of the Econometric Society, and has presented at many international economic and finance conferences.

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[1] A review of new advisory tools for wealthy individuals is by Gray [2004]. Bronson et al. [2007] give a broad view on the process of determining an optimal investment strategy for individual investors.

[2] A more formal treatment is offered by e.g. De Giogi [2009].

[3] The actual implementation of these ALM techniques (cash-flow matching, surplus optimization, and liability-driven investment) can however be cumbersome. For more details see Zenios and Ziemba [2006].

[4] It must be noted that private banking has always been promoting ALM techniques to some extent, though not explicitly. Clients are usually asked about their saving objectives, i.e. the motive for their savings, a step which corresponds to determining the "liabilities". In this context, the time horizon of the investment is also discussed. Next, sometimes using even sophisticated tools, the client's personal risk-return preferences are analyzed before optimizing his portfolio composition. Finally, to design the best possible investment plan, the contribution scheme must be taken into account, i.e. how much money the client is ready to set aside regularly.

[5] Related literature on optimal retirement plans is by Garland [2005], or Hauser [2002].

[6] More applications and examples can be found in Amenc et al. [2007b].

[7] To facilitate the analysis, we assume away the complexity of mortality risk, which can be dealt with through an annuity contract by an insurance company.

[8] If these TIPS do not exist in the market, it is possible to use a combination of OTC interest rate and inflation swaps to synthetically generate inflation-protected payment streams.

[9] All simulations presented in this example are taken from Amenc et al. [2007b]. For further information of the employed parameters and models chosen, please refer to this document.

[10] The fact that only 8% of the survey participants' have no clear opinion on ALM, as shown in exhibit 9, might be a sign of nonresponse bias.

[11] This dissatisfaction is completely independent of the respondent's view of the main financial risks in private banking as displayed in exhibit 4.

[12] Fisher's exact test [1922] is a statistical significance test to examine the significance of association of contingency tables. We do not report the complete contingency tables, but provide only the p-values under which the null hypothesis of no association (i.e. independence) is rejected. All statistical tests in this paper are based on the Fisher's exact test which provides for small samples of categorical data more accurate test results than the asymmetric Chi-squared testing procedure. In most cases, both tests yield however identical results. It must be noted that Fisher test can only perform one-sided tests in the case of 2x2 tables. Otherwise, it can only be used to test whether the distribution of answers is different between the two different groups, but not in which sense (two-sided test).