Schroders
Investment Risk Group

Investment Risk Group

Schroders provides investment management services for a broad spectrum of clients including institutional, retail, private clients and charities. The long term objectives of any investment programme that we implement for our clients cannot be achieved, however, without taking some degree of risk. Having said that, it's not sufficient for portfolio managers to simply select their favoured investments, combine them together into a portfolio and presume that, over time, the client's ultimate investment objectives will be met. Along the way there are bound to be potential pitfalls which might include changing market conditions and periods of abnormal volatility that will conspire to challenge even the most skilful fund manager's portfolio strategy. Consequently, the modern investment management company needs to have the tools and resources in place to be able to measure and manage portfolio risk effectively across the range of its products.

At Schroders we have a dedicated Investment Risk Group (supported by a team of software developers) who are principally responsible for providing:

— Sophisticated and up to date investment risk tools that cover all asset classes therefore allowing our fund managers to know and understand the levels of investment risk inherent in their portfolios.

— Research insight into risk management trends, market behaviour, and the potential impact of these upon a fund manager's portfolio.

— A point of independent oversight and review to ensure that the risks being taken within a given fund are appropriate and consistent with its risk and return profile.

Consistent performance, making sure that investment products are structured in line with their objectives, and ensuring that risk budgets are set, managed and spent consistently are some of the goals of implementing an effective risk management process. Benefits of devoting sufficient resources to the risk management function accrue to both client and investment manager alike – there's something for everyone in "doing risk" properly.

What is Risk Management?

Schroders' fundamental investment philosophy is that markets are inefficient and that, through detailed and careful research, our portfolio managers can exploit those inefficiencies to achieve superior returns. Some of our investment mandates have explicit market – related benchmarks whilst others are more focussed upon absolute returns in which case cash is often the implicit benchmark. Either way, in order to achieve their return targets our fund managers need to take active risk-inducing positions to outperform. Careful balancing of these positions can generate the investment results that our clients seek. Failure to take appropriate levels of investment risk may result in an inappropriate risk and return profile for client portfolios and exposure to excessive levels of return volatility.

One of the keys to risk taking is to ensure that levels of investment risk are appropriate. Some clients set high performance targets and, accordingly, accept and expect a higher level of volatility and risk within their portfolio. Others might be more conservative, with a lower risk tolerance and therefore have less aggressive performance targets. As fund manager for clients' investments Schroders has effectively been given a risk budget that must be spent and allocated appropriately.

Portfolio managers manage risk on a daily basis. In today's complex market place, with increased emphasis on governance, oversight, independence and challenge, they need appropriate tools and risk analysis to enable them to do this effectively. In this environment portfolio managers need to work in tandem with risk professionals to ensure that::

— The risk being taken in client portfolios is consistent with clients' investment objectives.

— Risk in a portfolio is allocated in a manner appropriate to a portfolio manager's views and areas of expertise.

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How do you define risk?
Over the years, investment risk has become broadly synonymous with the concept of volatility of portfolio returns, either in an absolute or in a benchmark-relative sense. Whilst this is a useful starting point and a concept that is widely used, it is not the only way of thinking about investment risk. In practice, risk management is a much more complex process and for this reason we have developed a flexible array of investment risk tools which cut across a variety of ways of measuring risk.

Examples of alternative ways of thinking about risk include:

- The sensitivity of portfolio returns to changes in key variables (for example general market movements and changes in interest rates).
- Exposure of a portfolio to important risk factors (for example stocks with a certain style in an equity portfolio or companies with certain credit ratings in a corporate bond portfolio).
- The probability of not meeting or matching an investment objective (for example a pension fund's liabilities).
- The likelihood of a portfolio losing money.
- The chance of unusual returns occurring.

Whichever way you look at it, whilst risk is necessary to generate performance it is not there just to be controlled. What is important is that risk needs to be quantified in order to be effectively managed. The range of different types of mandates that we manage at Schroders across different asset classes necessitates taking a wide ranging approach to managing risk, utilising a variety of techniques and definitions in order to do that.

Our approach to Risk Management
It is all too tempting when trying to describe the risk of a portfolio to attempt to boil it down to a single number. A common example of the "single-measure" approach to risk is the idea of tracking error (the volatility of a portfolio's excess returns versus its benchmark).

Such measures are single numbers and can summarise risk simply and concisely. Therein lies both their advantage and disadvantage. Given, for instance, a tracking error figure a client or portfolio manager gets an immediate answer as to what the risk is in their portfolio. Or do they? Some in the investment management industry appear to have become fixated by summarising risk by a single measure. This, in our view, oversimplifies the role and function of risk management.

Our perspective on risk management is that individual risk measures are useful starting points but cannot be used in isolation to manage risk. For example, two portfolios can have the same level of tracking error but the way they get to that tracking error can be quite different. As a result, they can face different - most likely directional - risks. Just as important as tracking error is an appreciation of how this active risk is arrived at. The pertinent questions that fund managers should be asking themselves are ones such as: what proportion of my risk comes from different sources - countries, sectors, styles and stock specific - and is that allocation consistent with my views and skill sets? Is my portfolio too concentrated - is too much risk loaded onto too few stocks? Which stock positions contribute the most to risk? What are my style exposures? How do my sector and country positions impact on risk? Effective portfolio management becomes a matter of asking the right questions and continually ensuring that fund structure is consistent with views held.

We favour a holistic view of risk in which individual risk measures play a part but are certainly not the end of the story. Using measures such as tracking error is a quick way of gauging the overall level of risk in a portfolio but can't be relied upon in isolation. We look at portfolios along a number of risk dimensions, practising what we preach by diversifying across risk measures.

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Schroders' Investment Risk Tools

One of the fundamental beliefs of our investment risk group is that there is no single solution to measuring and understanding the levels of investment risk inherent in a portfolio; a range of different techniques and sensitivities must be applied and understood before a judgement can be made. We adopt a diversified approach to risk management. In our opinion risk management is neither art nor science, it requires a careful balance of both. Accordingly, Schroders' risk measurement tools and systems use a range of both quantitative and qualitative techniques, and we build our own risk models in addition to utilising commercially available risk models. Some techniques that we use to manage investment risk are common across asset classes and can be applied irrespective of the type of mandate. In general, though, different asset classes and mandate demand differentiated approaches to managing risk.

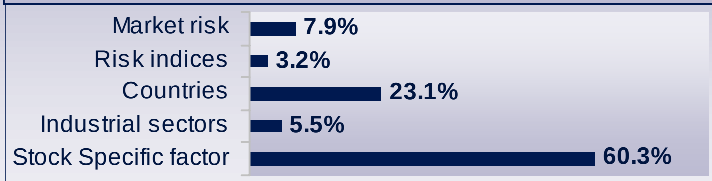
For **Equity** portfolios we use our proprietary equity risk analysis system **PRISM** to provide comprehensive risk analysis. PRISM describes the overall level of investment risk in a portfolio and the breakdown of that risk into its component sources. The Section heading styles to choose from are listed below.

PRISM Portfolio Risk Analysis

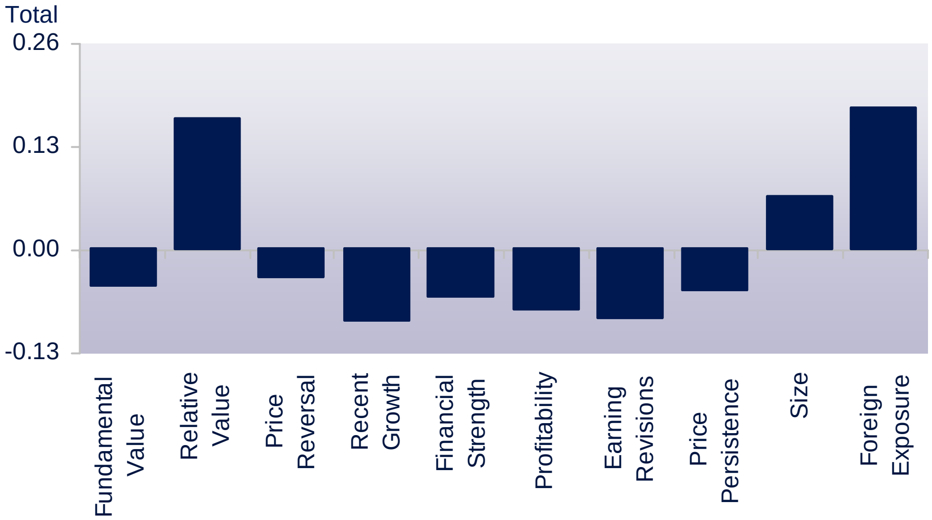
Schroders PLC

Predicted Risk	
Tracking Error	3.3%
Tracking Error (APT)	2.9%
Beta	1.06
Benchmark Volatility	14.7%
Absolute Fund Volitility	15.9%

Active Risk Decomposition (Barra)



PRISM Portfolio Style Characteristics



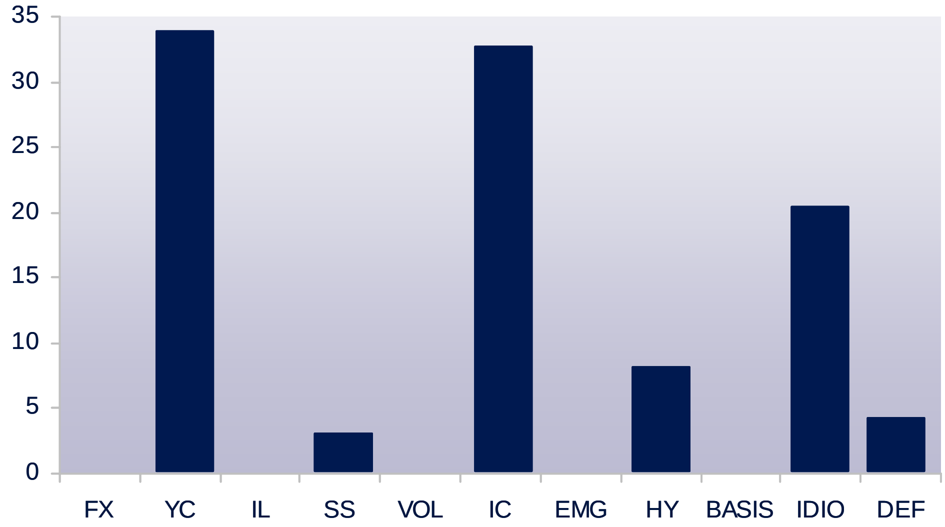
Investment style analysis has become an increasingly popular concept over recent years as investors aim to determine what the key characteristics of their portfolios are. PRISM identifies portfolio style exposure such as biases towards factors such as value, growth, quality, momentum and size.

For **Fixed Income** portfolios we use a multi-factor model to measure portfolio/ benchmark volatility and tracking error. The model quantifies sources of risk by decomposing portfolio risk into contributions from currency, yield curve movement, investment-grade and high yield sectors, idiosyncratic risk and credit default risk. The model handles not only government, corporate and securitized assets, but also a wide range of derivative instruments.

Fixed Income Risk Analysis
Systematic Tracking Error Volatility (bpa/month)

Isolated Systematic TEV					
	Total	**USD**	**EUR**	**GBP**	**JPY**
Currency	-	-	-	-	-
Yield Curve	11.2	4.1	0.5	12.0	3.5
Inflation	0.2	-	-	0.2	-
Swap Spreads	4.9	2.4	1.1	4.4	-
Volatility	0.1	0.1	0.1	0.0	-
Investment Grade Spreads	10.0	4.4	3.5	7.3	-
Emerging Markets Spreads	0.2	-	-	0.2	-
High Yield Spreads	4.5	1.1	4.5	0.9	-
COS Basis	1.0	0.3	1.0	-	-
Total Systematic	**15.2**	**6.9**	**7.5**	**15.4**	**3.6**

%TE Variance



Total TEV (bpa/month)	**17.4**
Systematic TEV	15.2
Idosynoratic TEV	7.7
Default TEV	3.4

Last Transaction	**9/29/2006**
Total MV (MMS)	495
Cash MV (MMS)	5
Positions Included	234
Positions Excluded	0

Source: Lehman POINT

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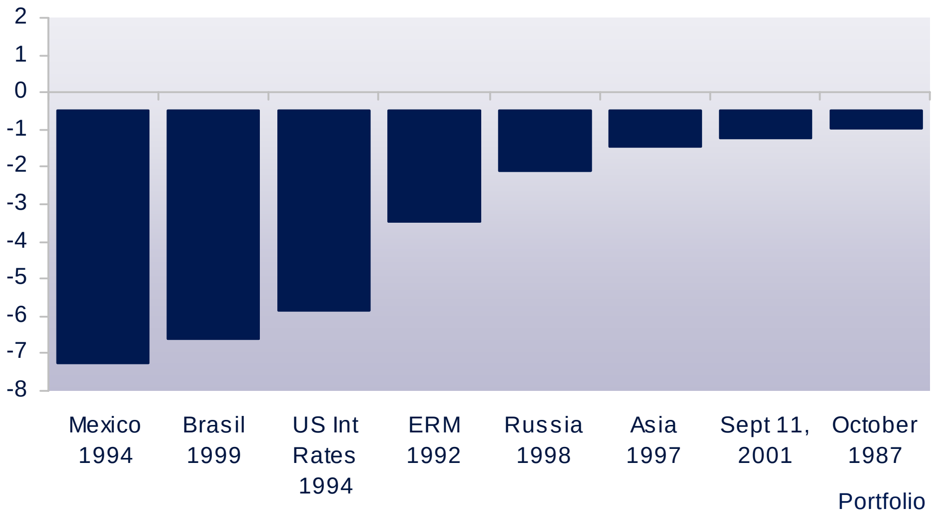
A trend in recent years has been an increased interest in **Absolute Return** vehicles, where the emphasis for performance comparison is less on a market-related benchmark and more on a relatively stable target such as cash returns. These vehicles represent a challenge to traditional thinking on investment risk and in this area we bring to bear techniques such as Value at Risk (VaR) and stress testing to portfolios with an emphasis on identifying the contributions to risk from individual portfolio positions.

These approaches permit us to quantify the worst case loss a portfolio could incur given specified confidence levels and over a particular time horizon, under normal market conditions. When combined with stress testing, which attempts to quantify the loss a portfolio could incur under abnormal conditions, or periods of extreme stress, two powerful techniques work together to enable us to understand more deeply the potential losses that could be faced.

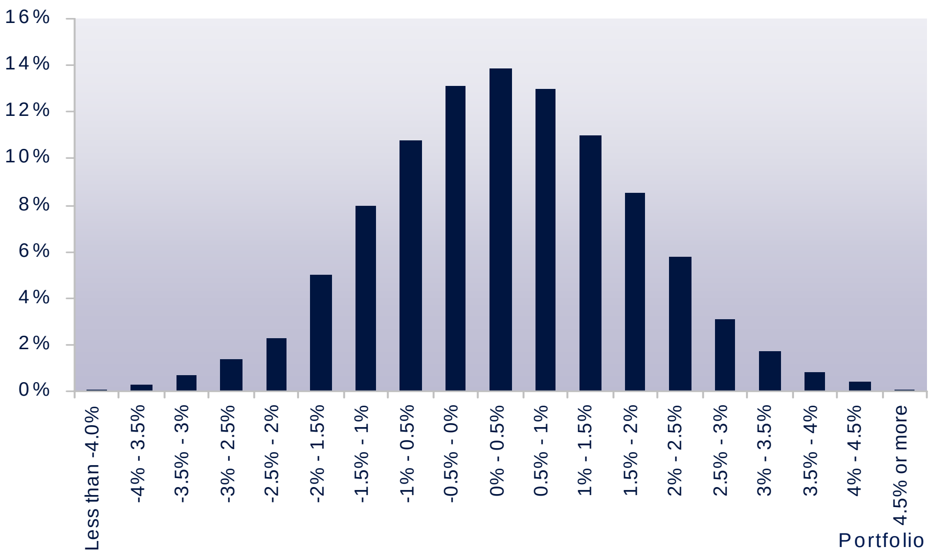
Portfolio Stress Testing

Portfolio Expected Losses



Multi-Asset or balanced portfolios invest across a range of asset classes and provide a different challenge. Our proprietary multi-asset risk tool - **SMART** - decomposes total portfolio risk into sources from the alpha of underlying funds, the beta exposure of markets and associated currency exposure of overseas investments. We also apply statistical simulation techniques to portfolio returns to provide insight into the likely range of future returns.

SMART – Expected Portfolio Return Distribution



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Risk Governance

Schroders has a strong, well established risk culture. A risk governance structure, known as the Schroder Investment Risk Framework (SIRF) is in place to ensure that, through the use of appropriate risk parameters, the level of investment risk taken is consistent with the expected risk and return profile of a fund. This structure extends to all portfolios, investing in all asset classes, across the group. A governing body (the SIRF Board – sorry we couldn't resist this name!) exists and delegates this oversight authority and responsibility to individual Equity, Fixed Income, Alternatives, and Property Risk Committees. Sitting on each Committee is the head of the asset class, product managers and members of the Investment Risk Group. These forums present an opportunity to discuss and highlight, totally independently of the fund managers, the levels of risk in each portfolio and any parameter exceptions. Issues and actions arising can therefore be escalated to the head of the asset class for their decision on the appropriate course of action. Any remaining concerns can be escalated further to the SIRF Board (which meets quarterly) for resolution, if required.

Whilst these forums provide a formal environment in which to review portfolio risk, it is typically more common for our fund managers to enter into open dialogue with members of our risk team. This consultative relationship encourages a review of assumptions and helps raise fund manager's awareness to potential sources of investment risk within their portfolios that might otherwise have been overlooked.

Schroders' Investment Risk Group

Schroders' Investment Risk Group is headed by David King. David and his team of experienced risk professionals report directly to James Stewart, the Chief Operating Officer for Investment at Schroders.

Conclusion

Investment risk is central and crucial to Schroders' business, but also has the potential to cause excess levels of portfolio volatility to clients' portfolios if left unchecked. Our highly skilled, independent team of risk professionals ensure our systems are up to date and fully reflective of underlying market conditions, thus allowing our fund managers to understand the sources of risk within their portfolios. This process is supplemented with a detailed and thorough governance structure that ensures independent oversight of the levels of investment risk and provides a platform for review, challenge and escalation.