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IP Issues in Quant Agreements

by William M. Ried

Since the 1930s, certain sophisticated investors have used mathematical formulae to price stocks and bonds. In the 1950s Harry Markowitz applied mathematical concepts to financial portfolio selection, and in 1969 Robert Merton introduced stochastic calculus to the study of how prices are set in financial markets. Beginning at this time, Fisher Black and Myron Scholes were developing an option-pricing formula useful for hedging risk and pricing "derivative" securities, which led to their Nobel Prize for Economics in 1997.

A "hedge fund" generally refers to an entity that holds a pool of assets, sells interests other than through a registered public offering and is not registered as an investment company under the Investment Company Act of 1940. In 1949, what is thought to be the first hedge fund invested in equities and used leverage and short-selling to "hedge" the portfolio's exposure to movements in the corporate equities markets. Over time, hedge funds diversified their portfolios and engaged in a wider range of investment strategies. Some hedge funds came to trade using quantitative models of technical analysis, seeking to identify trends in particular securities or groups of securities or seeking to predict when trends were about to reverse.

William M. Ried is Of Counsel in the Intellectual Property Department of Willkie Farr & Gallagher LLP, in New York, NY.

Quantitative analysts are individuals in the investment industry who use mathematical or statistical models to price and manage complex derivative products or to determine when stocks are underpriced or overpriced. The development of hedge funds that trade based on quantitative analysis has given rise to demand for quantitative analysts, often referred to as "quants," to create trading strategies that identify market imbalances. In hiring quants, hedge fund managers are faced with three basic intellectual property (IP) questions:

1. What does the quant bring to the job?
2. Who owns what the quant creates on the job? and
3. What happens after the quant leaves the job?

Screening the Quant's Baggage

It is common for quants to move from one hedge fund to another. When hiring a quant from another fund, the manager (the Manager) of a hedge fund (the Fund) must be mindful of the risk of claims from the quant's prior employer that the Fund has made use of a trading system or other information proprietary to that prior employer. The Manager should address this, first, by reaching a clear understanding with the quant that nothing he or she brings to the job or uses at the Fund will breach the quant's confidentiality obligations or infringe the rights of any prior employer. Second, in the quant's employment agreement (the Employment Agreement), the quant should give a straight representation and warranty that no algorithms, computer programs, inventions, concepts or other elements of trading systems the quant will develop or use for the Fund will violate any agreement to which the quant is bound or infringe the rights of any third party.

An exception occurs if the quant is expected to bring to the Fund for use and further development a trading system he or she worked on for a prior employer but owns or has a valid license to use at the Fund. In this event, the quant must represent and warrant that he or she and "future employers" have a paid-up, royalty-free, irrevocable, perpetual license to use and modify the trading system, and that the prior employer is entitled to no notice or ownership of such modifications or proceeds from use of the trading system.

A variation on this exception occurs when the quant claims joint or sole ownership of a trading system or other property right that might pertain to the Fund's business. In this event, the Employment Agreement should schedule with particularity all IP rights claimed as prior works that relate to the Fund's proposed business and are not assigned to the Fund, and the quant should warrant and represent that if any portion of such IP rights are incorporated into a Fund product or process, the quant makes a current grant to the Fund of a nonexclusive, royalty-free, irrevocable, perpetual license to such IP rights.

However, the Employment Agreement is unlikely to oblige the quant to indemnify the Fund for claims arising out of a breach of representations and warranties, and the Fund's only recourse for breach will thus be a contract action against the quant. For this reason, and to avoid the expense and distraction of a dispute with the quant or a third party, the Manager should insist on seeing documentary evidence of the quant's rights, such as his or her agreement with the prior employer, or at least demand that the Fund's attorneys be permitted to review for diligence purposes the IP provisions of such documents.

Developments on the Job

The Employment Agreement should provide that the trading systems the quant develops for the Fund will meet the Manager's expectations, infringe no third-party rights and belong to the Fund.

Trading Parameters

For reasons of diversification or the Manager's perception of which markets are likely to be profitable, the Employment Agreement may provide that the quant's trading will focus on specific sectors, such as US small caps and liquid futures or Asian equities. The Manager might also dictate specific trading strategies, such as electronic algorithmic trading with requirements covering daily trading volume as a percentage of portfolio value, number of transactions per day, maximum percentage of value accounted for by a single equity or target number of long and short positions. On the other hand, the Manager presumably will hire a quant based on a perception of his or her unique talent at developing successful trading systems, and rigid system parameters set forth in the Employment Agreement could undercut the quant's creativity.

Infringement Rep

Achieving a sense of comfort that the quant will not bring to the job materials or ideas that infringe the rights of a prior employer or another third party is only part of the Manager's task. The Employment Agreement also should provide a clear representation and warranty by the quant that no part of trading systems put into place or other inventions created by the quant while at the Fund will infringe third-party IP rights.

Work for Hire

Most Employment Agreements will provide that anything the quant develops while employed by the Fund that is related to the Fund's business, including modifications of excluded IP, will be owned by the Fund. Typical provisions in the Employment Agreement will provide that the quant must promptly disclose such developments in writing to the Manager and label these developments as "work for hire" under the Copyright Act backstopped by a present assignment of all rights in the developments and possibly by an appointment of the Manager as the quant's attorney-in-fact to secure such rights and provide that, without additional compensation, the quant will testify, provide documents and otherwise assist the Manager in perfecting the Fund's rights in these developments.

In the rare instance of bargaining power skewed toward the quant, the Manager might compromise on ownership of developments created by the quant during his or her employment at the Fund. In such a case, the Employment Agreement might provide that the quant will own all modifications to prior works but that the Fund is licensed to use such developments on a royalty-free basis during and after the quant's employment.

After the Party's Over

Beyond the issue of ownership of developments and modifications during and after the employment term, the Employment Agreement often will address the quant's future employment. Some agreements will seek to limit the quant's ability to work for competing concerns. Such a non-compete provision must be reasonable in terms of duration and geography, as public policy disfavors restricting an individual's ability to earn a living. In fact, a New York court will not likely enforce any restriction on a quant's future employment unless this is necessary to protect the Fund's trade secrets or goodwill or unless the quant's services to the Fund are unique.

Another way to address the quant's subsequent activities is to give the Fund the right to participate in the quant's future trading. This can be accomplished by granting the Fund the right to place capital with the quant at any time after termination of the quant's employment with the Fund, to be managed by the quant using strategies chosen by the Fund from among those the quant makes available to his or her investors.

Conclusion

As of December 2008, Michael Santoli opined in *Barron's* that "hedge funds as a class are on a death watch," but that the few that survive will be big winners in the next market cycle, and many hedge funds are now sitting on cash waiting for coming opportunities. If this is correct, perhaps the recent tumult in worldwide markets and the fact that many companies are trading at historic lows has created market imbalances that provide fertile ground for investments guided by quantitative analysis. If so, hedge fund managers may be in the market to hire new quants and should be mindful of the IP issues discussed above in negotiating the terms of their employment.

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