
PRACTITIONER'S DIGEST

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INVESTMENT, FINANCIAL SYSTEM, REAL OUTPUT AND MACRO-RISK MANAGEMENT

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Thomas S. Y. Ho and Sang Bin Lee

Real sector output and the financial system interface dynamically. Therefore macro-financial risk management can significantly affect the real sector performance. This paper shows that macro-financial risk management must necessarily be dynamic to optimize real sector output. For example, policy makers may allow the market to increase financial and household leverage when the real sector grows at a steady pace. The growth of the credit market can further increase the real sector outputs.

Investors should recognize this dynamic relationship between the financial market and financial regulations. The underlying risks of the real outputs may result in macro-financial management, which in turn will affect investment returns. Therefore, our paper suggests that investors should take macro-financial risk management as related to the real output risk into their decision making process.

RESERVE PRIMARY: FOOLS RUSH IN WHERE WISE MEN FEAR TO TREAD!

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Ozgur (Ozzy) Akay, Mark D. Griffiths and Drew B. Winters

This is a clinical analysis of Reserve Primary (RP), the first ever money market fund, from its beginnings as a low-risk Money Market Fund (MMF) through its shift toward more risk taking. This shift ultimately led to it going out of business almost overnight in response to the Lehman bankruptcy on September 15, 2008 even though RP held only 1.2% of its assets in Lehman debt.

RP Fund Portfolio Manager Michael Luciano stated that after the government-assisted rescue of Bear, he “assumed that the federal government would similarly save the day if Lehman or one of the other

investment banks, which were much larger and posed greater apparent systemic risks, ran into trouble.” Hence, it appears that the government’s guarantee in that rescue and its subsequent market interventions created a situation of moral hazard wherein at least some fund managers believed that they would be protected from the consequences of risky investment behavior. That is, an incentive was provided to continue in its risk-taking behavior. Investors also clearly approved of the RP’s additional risk since the fund more than doubled in size from \$28 billion at 5/31/07 to \$64 billion at 5/31/08.

With the Lehman bankruptcy, financial sector risk increased. At this time, Reserve Primary had about 40% of its portfolio in FCP and CDs including its position in Lehman debt. Other MMFs holding Lehman debt held 46% of their assets in FCP and CDs. While Reserve Primary did not appear to be substantially more risky than the other MMFs investing in Lehman, we conclude that the ultimate downfall of Reserve Primary was the lack of a deep pocket sponsor to provide non-market liquidity. Reserve Primary’s redemption requests were about half of the fund’s assets while the other MMFs with sponsors’ support only required support roughly equal to their Lehman exposure. Thus, it appears that having a sponsor to backstop any run on the funds was crucial at this time. Conversely, it emphasizes the risk was undertaken with the belief in an implicit and unstated government guarantee of support.

INVESTING WITH STYLE

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Clifford S. Asness, Antti Ilmanen, Ronen Israel and Tobias J. Moskowitz

Most existing portfolios, even seemingly diversified ones, are dominated by equity risk. For example, a 60%/40% stock/bond portfolio is 0.99 correlated to a 100% stock portfolio. This concentrated bet proved especially painful during the 2008 global financial crisis. In addition, most investors are currently concerned that traditional sources of returns, such as stocks and bonds, may not do as well as they have in the past for a variety of reasons, including past good luck and today’s lower starting equity and bond market yields (higher prices). Finally, even if concentration in equity risk is not a concern, and expected returns going forward on traditional assets match history, adding diversifying sources of expected returns is always beneficial. Consequently, investors have turned their attention to alternative sources of return, specifically investments attempting to be uncorrelated with traditional assets. Typically, alternative investments have been sought in private equity and hedge funds, but their high market exposure (i.e., they really aren’t “uncorrelated”), high fees and illiquidity limit their attractiveness. Another set of alternatives, however, is straightforward, known long/short strategies in liquid asset classes, which have received renewed investor interest.

While investors today are bombarded with an array of alternative investment strategies, amid the clamor, academic research has sifted through the vast landscape and found four intuitive investment strategies that can be applied in liquid assets to deliver consistent sources of alternative investment returns. When applied effectively as long/short portfolios, these four strategies have delivered positive long-term returns with low (or negative) correlation to one another and to traditional markets. The four investment strategies—value, momentum, carry and defensive—have uniquely held up across a multitude of asset classes, markets and time periods using very liquid securities and form the core foundation for explaining the cross-section of returns in most asset classes. We refer to these strategies as “styles,” which we define as a disciplined and systematic method of investing that produces unique

long-term positive average returns across markets and asset classes. Styles also have low to zero average correlation with major long-only asset classes, are backed by significant scientific evidence, both in- and out-of-sample (with out-of-sample meaning over time and asset class/geography), and are underpinned by economically intuitive rationales.

We discuss the intuition and evidence for these four pervasive styles and detail how to implement a strategy that can access these style premia to improve the risk and returns of traditional portfolios.

OIS DISCOUNTING, INTEREST RATE DERIVATIVES, AND THE MODELING OF STOCHASTIC INTEREST RATE SPREADS

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John Hull and Alan White

Since the credit crisis of 2007–2009, there has been a change in the discount rate used by the market to value collateralized derivatives. Prior to the crisis expected (risk-neutral) cash flows were discounted at LIBOR. Since the crisis, discounting at the OIS rate has become the norm. This paper first explains the impact of the change on the calculation of forward LIBOR rates. It then presents results showing how the valuation of swaps, swap options, and caps are affected. Finally, it develops a new general procedure for valuing derivatives whose cash flows depend on LIBOR when OIS discounting is used.

When the term structure is flat, forward LIBOR rates are unaffected by the change to OIS discounting. But when the term structure is upward (downward) sloping forward LIBOR rates decrease (increase) as a result of the change. The impact of the change on the valuation of interest rate derivatives such as swaps, caps and swap options can be split into two components. The first quantifies the impact of discounting. The second quantifies the impact of the change in forward rates. The total effect of the change, particularly for long-dated instruments, can be quite large.

For caps and swap options, there are standard market models and these can be adjusted to accommodate OIS discounting. For other derivatives that provide a payoff based on LIBOR, it is necessary to model both the OIS rate and the spread between OIS and LIBOR. This paper develops a new approach where a single tree is used to model both the OIS rate and the expected LIBOR rate. An example is given where the tree is used to value Bermudan swap options.

MOMENTUM, ACCELERATION, AND REVERSAL

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James X. Xiong and Roger G. Ibbotson

We attempt to reconcile these two opposite phenomena: one-month reversal and 2–12 month momentum. Our main thesis is that momentum generates acceleration perhaps via positive feedback, and accelerated price increase is not sustainable, hence the reversal. Indeed we show that accelerated price increase is a strong contributor to not only poor future performance but also a higher probability of big reversals.

Stocks that experienced the highest accelerated returns over the last one year underperformed other stocks significantly. The annualized return for a portfolio of the most accelerated quintile underperformed the least accelerated quintile by 13.74%. The underperformance is robust after controlling for other factors.

With cross-sectional regressions, we demonstrate that an accelerated price increase over the last one year is a strong contributing factor to individual stock drops. Similar regression results are obtained for the aggregate stock market, even though the significance is lower than for individual stocks. Overall, the findings provide economically valuable information allowing an investor to better forecast individual or aggregate market reversals based on the past accelerated returns.

IMPACT OF CREDIT MARKETS ON DYNAMIC STOCHASTIC REAL AGGREGATE PRODUCTION

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Thomas S. Y. Ho and Sang Bin Lee

This paper provides a model and empirical evidence of feedback effects of the credit market on the GDP growth rate. The paper results enable financial policy makers to quantify the impact of the credit market on the real sector performance in their macro-financial management. Our model can also be used to weigh the costs and benefits in developing financial markets for countries such as China.

The model is also useful for investors. The attribution results of GDP growth rate enable investors to identify the underlying risk drivers of the real sector output. In particular, the model identifies the portion of GDP growth rate attributed to previous cycle's production—the feedback effect. The model can be used by risk managers to develop an enterprise stress test model, relating GDP risk to financial economic risk of an enterprise.