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Summing Up

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THE KEY ISSUES IN this debate are the statistical and economic significance of the correlation between changes in the discounts on closed-end funds (the closed-end fund puzzle) and excess returns on small stocks (the small firm effect).

Initially CKM (1993) challenged the statistical significance of this correlation, but this issue appears settled. In Table IV of Lee *et al.* (1991), we report the regression of small firm returns (DEC1) on changes in the valued-weighted discount (ΔVWD) and return on the market (VWNY), and find that the coefficient on ΔVWD is statistically significant (it remains significant with all Januarys and Decembers removed). In Table II of Chopra *et al.* (1993), we find that the comovement of returns with ΔVWD is greater for low than for high institutional ownership stocks. This result for the whole sample is statistically highly significant (p -value of 0.0001). Finally, in Table III, Panel B of Chopra *et al.*, we regress the return difference between fund shares and fund asset values on size decile excess returns, again finding a statistically significant relationship for small stocks. In light of this evidence, the statistical significance of the correlation between changes in discounts and excess returns on small or low institutional ownership stocks is no longer disputed.

The objections of CKM now focus on the economic significance of the investor sentiment index, as measured by incremental R^2 . They draw attention to the regression using DEC1 raw returns in Table III, Panel A of Chopra *et al.* But the small firm puzzle obviously refers to the small firm premium and not the raw return. Using the preferred arrangement of variables of CKM and their data, Table III, Panel A also shows that with a standard measure of small firm premium, (DEC1 – DEC10), the R^2 for the regression is 8 percent. A similar R^2 of 9 percent obtains in Table III, Panel B, when the abnormal return on small stocks, an equally standard measure of the small firm premium, is used.

CKM now report errors in the data they sent us, and claim that this R^2 is only 6.9 percent. They also do not like these standard measures of small firm premium, and want to further “whiten” the small firm abnormal return using decile 10 returns. They fail to realize that the return on *any* additional “whitening” portfolio is itself correlated with individual investor sentiment—negatively so if it is heavily institutionally owned, and positively so if it is mainly owned by individuals. Table II of Chopra *et al.* shows clearly that after controlling for VWNY, the only decile 10 firms that comove significantly with discount changes are those with high institutional ownership. Therefore, contrary to CKM’s claim, the 4 percent R^2 from decile 10 firms is not “free,” but reflects the higher concentration of institutional ownership in these firms than in the VWNY portfolio. Without this additional

“whitening” procedure, and without arbitrarily removing observations, an R^2 of 7 to 9 percent is about right.

Is this a lot or a little? To gain some perspective, one could compare investor sentiment with more standard “fundamental” APT factors, such as those advocated by Chen, Roll, and Ross (1986). Table X of Lee *et al.* shows that the *five* “fundamental” factors used by Chen, Roll, and Ross *together* explain 12.5 percent of time series variation in small firm monthly excess returns. Adding the change in the value-weighted discount increases R^2 to 17.9 percent. Compared to the economic significance of “fundamental” factors, investor sentiment appears to have as much or more explanatory power, i.e., 7 to 9 percent when used alone, or an extra 5.5 percent when added to other factors.

In sum, the results that Lee *et al.* presented are statistically significant and robust, two rounds of criticisms from CKM notwithstanding. Moreover, the investor sentiment index explains small firm excess returns at least as well as “fundamental” APT factors, as shown in the original Lee, Shleifer, and Thaler paper. This being the case, we can all indeed move on.

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