Morningstar Fixed Income Style Box and Categories Questions and Answers

Background

Morningstar Category Breakpoints - Legacy System
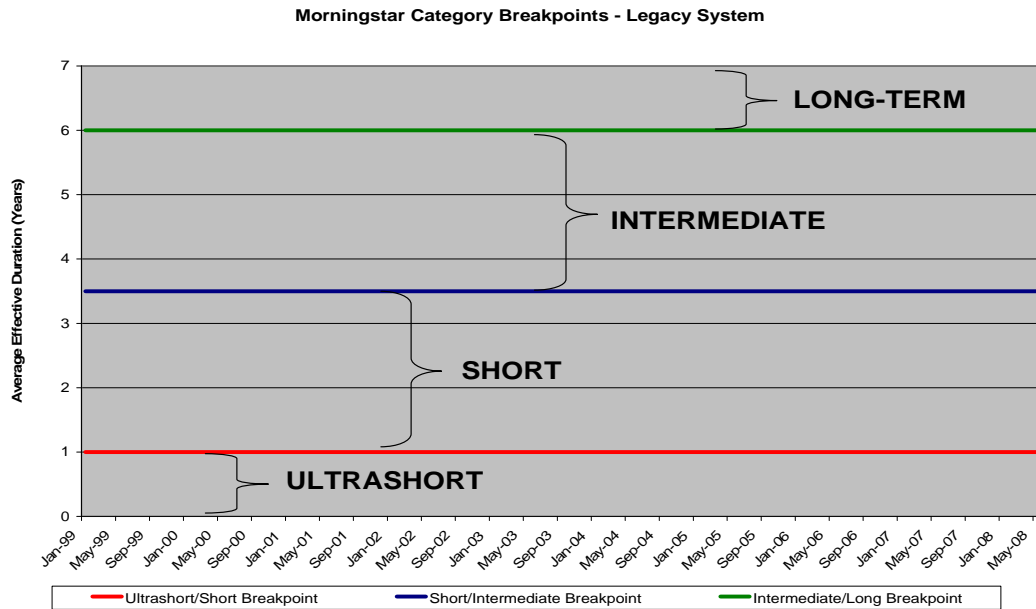
The good news about the 'old' Morningstar system for classifying taxable bond funds is that it has served us much better than one might have expected. However, decisions about where to place category cutoffs were based on examination of the fund universe as it existed in 1996, and where within that universe groups of funds were then clustered. Those breakpoints have stood up relatively well, but they were fixed, and did not offer a scheme for adjusting to changes in the market for outstanding bonds. And though the 'new' bands tend to fall in ranges of similar magnitude, they are designed to move with changes in the market as well as its risk profile.

What we have been missing most since 1996 is a reliable benchmark of the high-quality taxable bond market that could be used to establish a more objective, yet flexible system. That dilemma has been addressed by the introduction of the Morningstar Core Bond Index (MCBI). By designing the categories to 'float' with the MCBI, the new system should better maintain boundaries outside of which funds are unlikely to move, absent deliberate strategy changes on the part of portfolio managers. In other words, under the legacy system, it had been possible that a shift in the marketplace over a sufficient period of time could cause funds to drift over nearby category cutoffs that had otherwise been simply "moving with the market".

This has been a particularly acute concern for taxable funds with significant mortgage exposure. The mortgage market has expanded meaningfully since the category system was devised in 1996. The investment-grade U.S. bond market has grown approximately 128%, while the value of outstanding U.S. Government Agency mortgage-backed securities has roughly doubled, and comprises well more than 40% of the MCBI. The duration of that sector tends to shorten dramatically as rates fall and prepayments rise, and extend dramatically in the opposite situation. By using the MCBI (which has a market weighting in

Morningstar Fixed Income Style Box and Categories Questions and Answers

mortgages) as our duration benchmark, we are effectively setting the category bands to move as the market moves and therefore better minimize market-driven category changes.

What is changing - fixed income style box (short-term)?

We will be using flexible duration breakpoints over the current static breakpoints. The flexible breakpoints will be calculated using the effective duration of the Morningstar Core Bond Index (MCBI). These breakpoints will be calculated on a monthly basis much in the same way we calculate market cap breakpoints for the equity style box.

- Ultrashort: zero to 25% of MCBI

- Short-Term: 25% to 75% of MCBI

- Intermediate: 75% to 125% of MCBI

- Long-Term: 125% of MCBI (no upper limit on long-term funds)

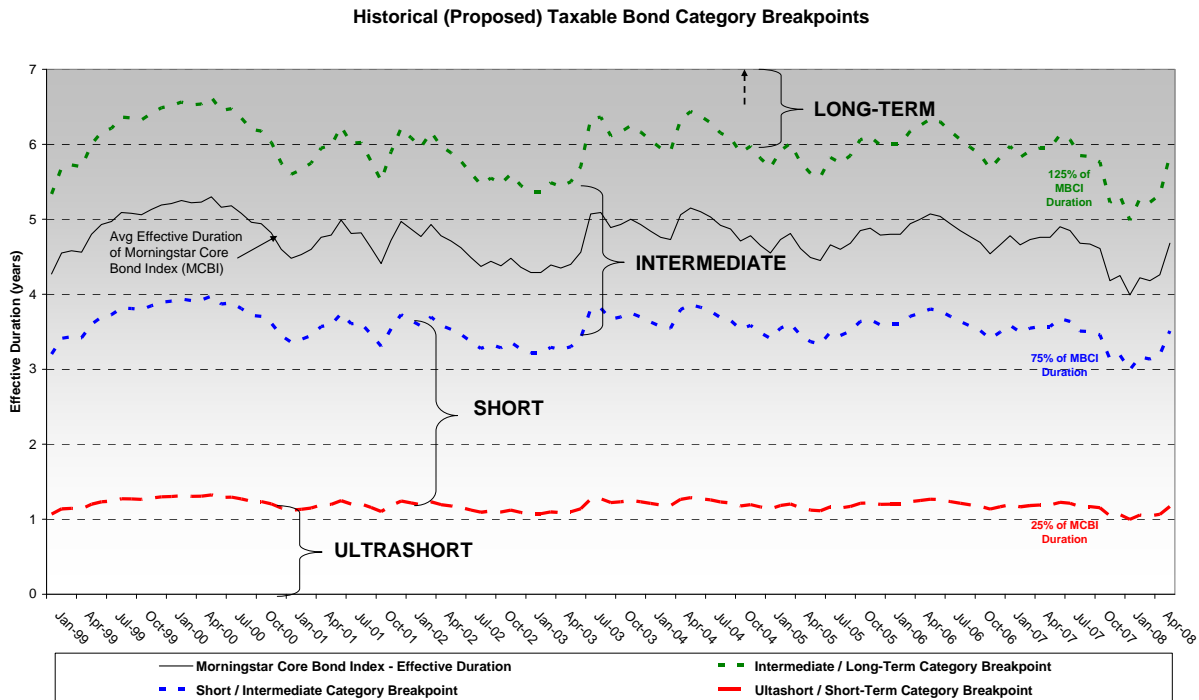**Historical (Proposed) Taxable Bond Category Breakpoints**

Chart 1

What is changing - fixed income categories (long-term)?

There will be revisions to the internal category change program for taxable, high-quality bond funds (including Ultrashort and Short-, Intermediate, and Long-term government and bond categories). In the long term we should not see funds jumping categories, i.e., changing from an Intermediate Bond fund to a Short Tern Bond fund and then back to an Intermediate Bond fund.

Morningstar Fixed Income Style Box and Categories Questions and Answers

Will the new system work well for mortgage-focused bond funds?

Among the key issues that have come up is the question of whether mortgage funds will be adequately addressed by a system that uses the MCBI as its center point. The main issue is that, as noted, mortgage funds tend to shorten when market yields fall. So while most mortgage funds 'belong' in an intermediate category based on what we generally view as their long-term risk profiles, the fixed nature of the legacy system sometimes produced the request that mortgage funds be shifted into lower-risk categories; this required analysts to override the system.

The suggestion had been made that we consider using an alternative 'government' index for the government categories that would include only Treasuries, Agency debt, and Agency mortgages, to better align with the investment universe of those funds. The concern had been that an index without sufficient mortgage exposure might still make it difficult for mortgage-dedicated funds to maintain stable category profiles.

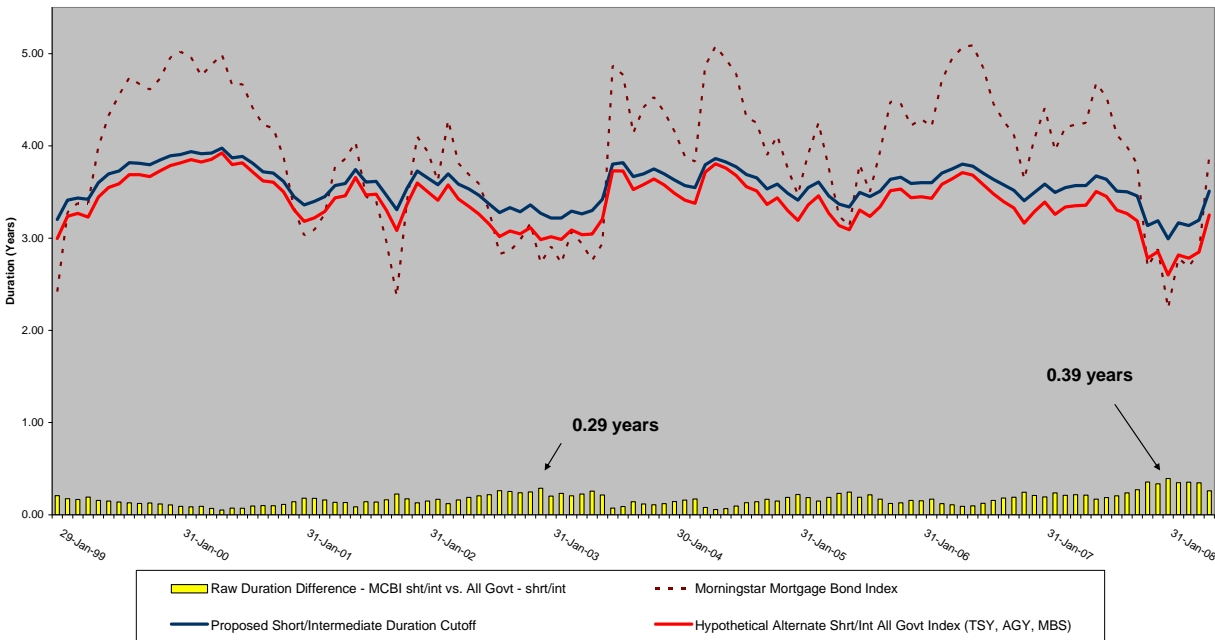Short/Intermediate Breakpoints: MCBI system vs. Govnerment (only) alternative index

Chart 2

It turns out that there is very little difference between an MCBI based system and one reliant on a government-only index, though the latter does come in with a slightly shorter overall history of duration profiles. Meanwhile, a study of historical category changes as they might have occurred under the new system showed a very small number of additional category shifts, many of which would likely have been overridden by analysts for a variety of reasons (poor fund company data submission, etc.) Overall, we elected to use an MCBI based system for all taxable funds as a way to maintain consistency and ease of use.

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Alternatively, the suggestion had been made that we consider a new mortgage-only fund category. That idea has much utility from an analytical perspective, and would make categorizations simpler. It would also serve the purpose of highlighting mortgage funds as a distinct group for performance measurement.

We have elected not to include a discrete mortgage category in the new system. The main logic behind the groupings that were developed in 1996 (distinct from the selection of the category breakpoints) was that combining government funds holding vastly different securities made sense because investors were/are typically presented with 'government fund' choices that include some funds with mortgages, some without, and many that hold nothing else.

Ultimately, the duration profiles of government funds are what best define their risks, so grouping them together can help foster better understanding of their differences. Slicing out mortgage funds as a separate group would eliminate the need to monitor category slippage, but would also make it more difficult for investors to envision just where their funds fall in the broader menu of government-fund choices vis a vis risk.[1]

Still, Morningstar does maintain a system that tracks prospectus objectives, with which investors can screen for funds that are heavily invested in mortgages. Moreover, among future refinements, the introduction of a supplementary screening system more directly aligned with the norms and labeling used by the consultant community is under consideration. More specifically with regard to mortgage funds, another layer of selection criteria for screening and/or labeling would help promote the notion that while they are, in effect, 'government' funds from a credit perspective, mortgage funds are a special subset that can be grouped and evaluated separately.

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[1] There are mortgage funds that hold significant stakes in non-agency-backed securities. They number very few, though, and given market developments through mid-2008, it appears possible that even fewer will exist for some time to come.

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Why did we elect to use a system in which the category breakpoints are defined by a percentage of the MCBI's duration rather than a fixed number of years around the benchmark?

Chart 3 represents a hypothetical version of what we'll refer to as the Fixed Year Method. It represents the use of category breakpoints driven by a adding or subtracting a fixed number of years from the core index (in this case the MCBI).
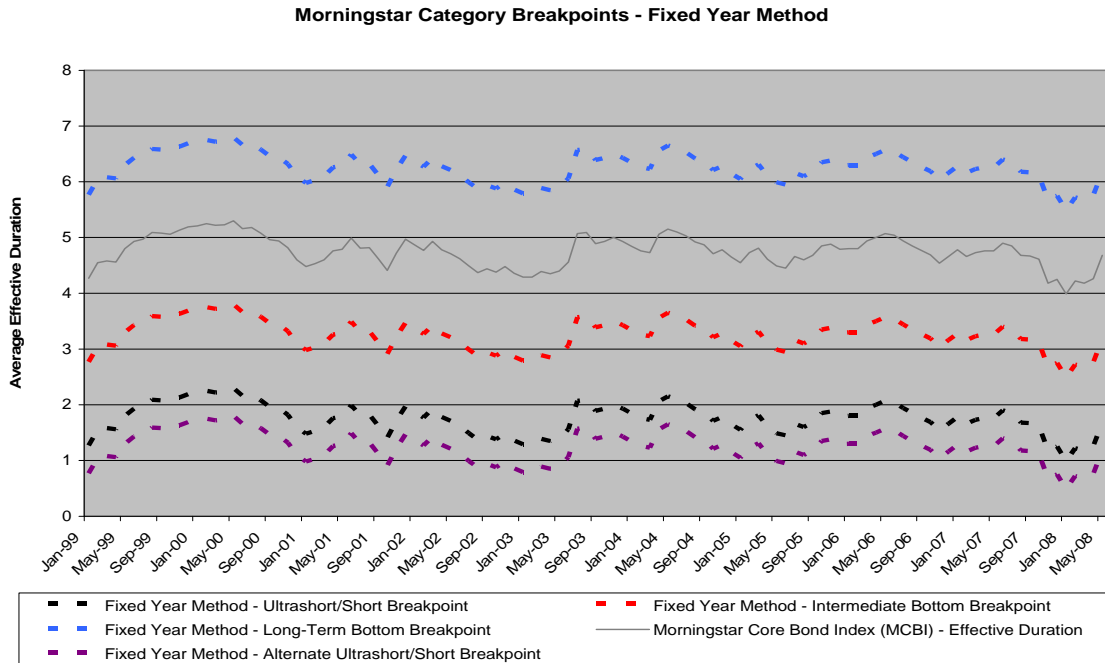

Chart 3

Note that in Chart 3, we've included two versions of the 'Ultrashort/Short' Breakpoint. The black dotted line represents MCBI minus 3 years, and the purple dotted line (Alternate Ultrashort/Short Breakpoint) represents MCBI minus 3.5 years.

We elected to examine both versions given that the duration of MCBI minus 3 years produced an historical ultrashort/short breakpoint that ranged up to and over two years at certain points. That was unacceptable given that ultrashort funds are typically perceived as having only minimal interest rate risk. However, as one can see in Charts 3 and 4, using MCBI minus 3.5 years (or even a greater margin), wouldn't create a meaningfully better outcome either.

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Chart 4 shows a comparison of the two Fixed Year Method tests for an ultrashort/short category breakpoint. As you can see, while the "MCBI minus 3.5" test eliminates some of the potentially high periods for the breakpoint, it also dips well below one year at times. In fact, the depth to which that measure fell earlier in 2008 is so low that it could have resulted in a dramatic realignment of the ultrashort and short-term categories.

Using the effective duration data for MCBI, combined with the "Fixed Year Method" and a fixed range of MCBI duration minus 3.5 years (which appears to be roughly the most optimal selection available), the ultrashort category would have had a breakpoint range as high as 1.75 years, and as low as 0.49 years. By contrast, the percentage-based system yields a hi/low history of 0.99 to 1.35 years. The breadth of the ultrashort category is arguably more important than for other categories given the market's historic reliance on funds in this niche for safety.

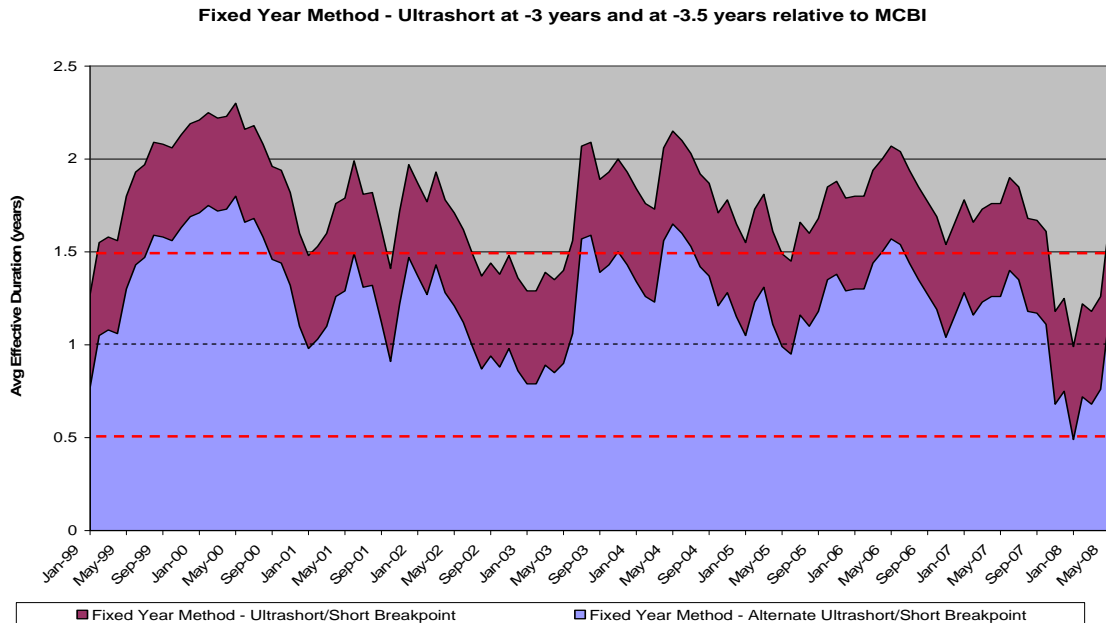**Fixed Year Method - Ultrashort at -3 years and at -3.5 years relative to MCBI**

Chart 4

Another concern with the Fixed Year Method is that it would likely create problems in the event that the markets covered by the MCBI were to change sufficiently such that the overall duration profile of the index would endure a secular (rather than cyclical) shift. This would produce a troubling outcome for cases in which it were to shift lower. Were the U.S. Treasury to have followed through more emphatically with now discarded plans to eliminate issuance of long-term bonds maturing in 30 years, for example, it could have shrunk the duration profile of the entire market dramatically.

Morningstar Fixed Income Style Box and Categories Questions and Answers

Chart 5 depicts a secular reduction in the MCBI's effective duration of 1.25 years. Absent an adjustment to the parameters of a Fixed Year Method breakpoint system, such a shift will result in the ultrashort/short breakpoint dropping below zero. In effect, the entire ultrashort category would disappear.

Hypothetical Fixed Year Method Category Breakpoints In Case of Systematically Lower Duration Profile
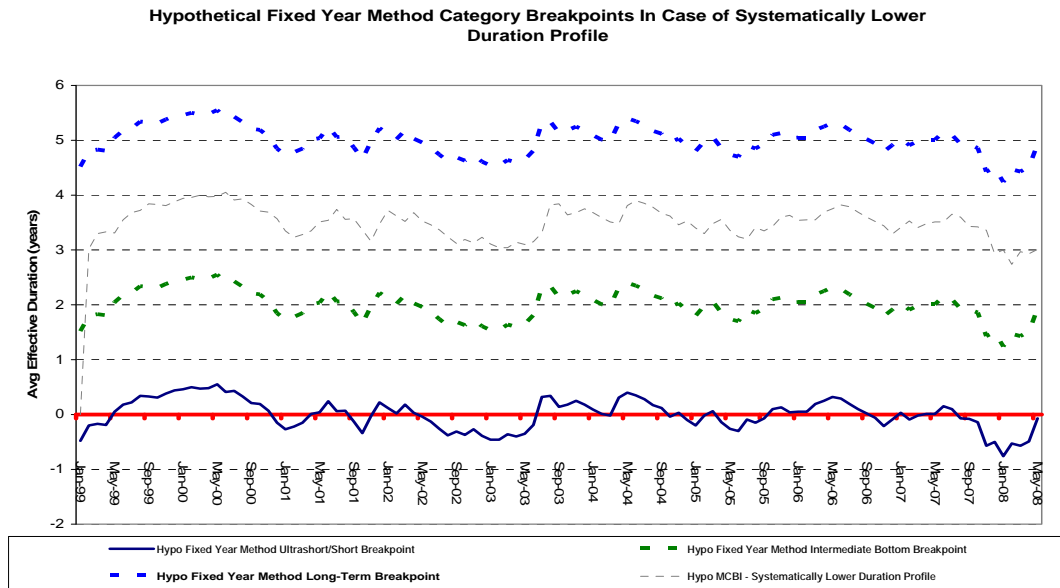

Chart 5

By contrast, a percentage based system, stressed by the same hypothetical shift in the MCBI (Chart 6), while resulting in nominally lower bands, also retains category sizes and spacing that remain useful.

One of the main concerns with a percentage-based system is that category sizes will fluctuate as the index's duration moves. But while the implication is that a Fixed Year Method would address that issue, it would do so only for the intermediate and short-term ranges, assuming that the index's duration doesn't fall low enough to eliminate the ultrashort category (depicted in chart 5). In fact, for all intents and purposes, the sizes of the ultrashort and long-term categories would continue to be in flux under a fixed-range system. (See Appendix). In effect, using the fixed-range system would produce a more stable profile for the short-term category than in the percentage system, while adding instability to the ultrashort category.

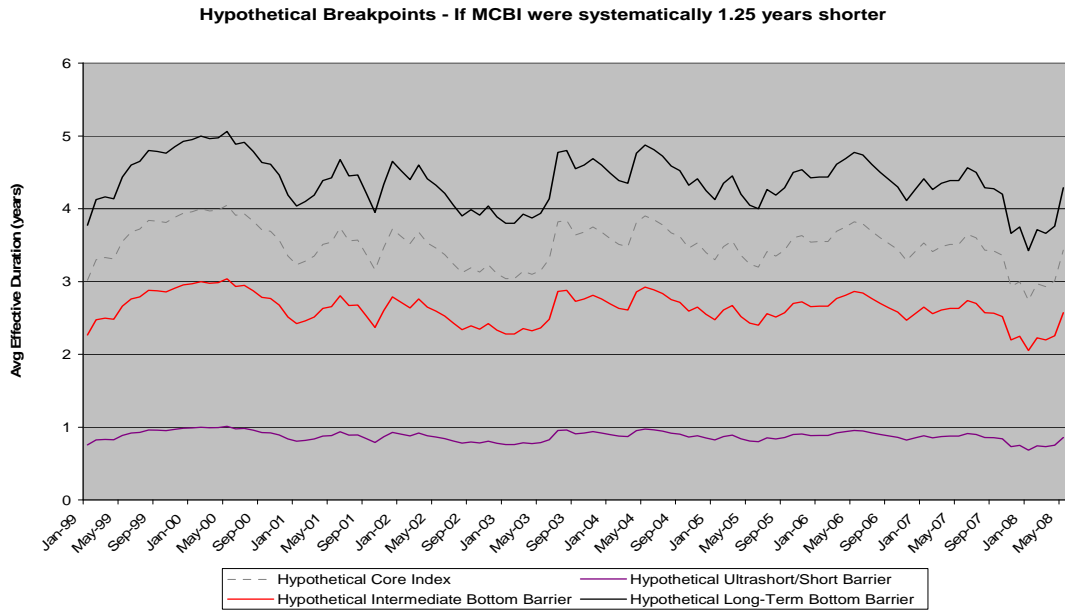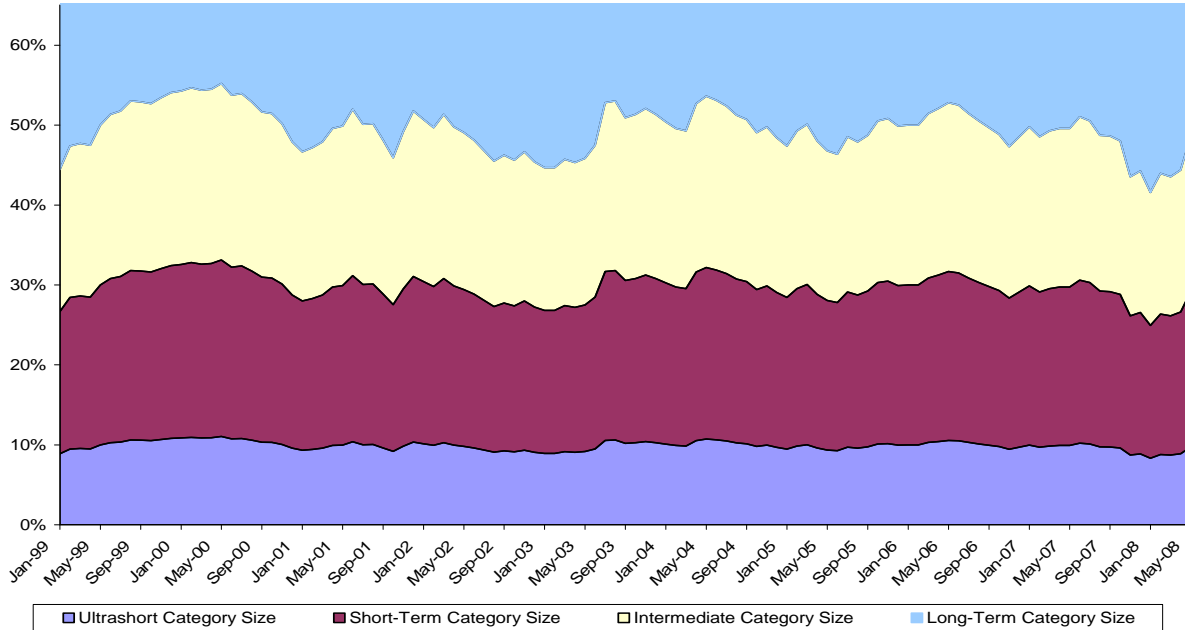# Morningstar Fixed Income Style Box and Categories Questions and Answers

Hypothetical Breakpoints - If MCBI were systematically 1.25 years shorter

Chart 6

Morningstar Fixed Income Style Box and Categories Questions and Answers

Appendix

Category Sizes Using Proposed Percentage Based Method

Category Sizes - Based on fixed-distance Kaplan Method