Discussion of *Risk and Return in Fixed-Income Arbitrage: Nickels in Front of a Steamroller?* by Jefferson Duarte, Francis A. Longstaff, and Fan Yu

David Jamieson Bolder
Financial Markets Department
Bank of Canada

dbolder@bankofcanada.ca
http://www.bankofcanada.ca/dbolder

May 3, 2006
Gameplan.

This is really quite a nice paper.

Consequently, I won’t have much in the way of critique.

Instead, I intend to:

• provide a brief review of the key points;

• describe in a bit more detail one of the trading strategies;

• discuss a few possible policy applications of this work.
Summary.

The paper examines the risk and return characteristics of five fixed-income trading strategies.

These strategies are applied in swap, treasury, mortgage, corporate-bond, and fixed-income derivative markets.

The authors break down each trading strategy and replicates it (different time periods for each strategy).

The central idea behind each strategy is to exploit differences between actual and theoretical security values.

They adjust the capital to ensure that each strategy has a 10% standard deviation of excess returns.
Principal Results.

**Central question**: Are these high-risk strategies? That is, does the steamroller analogy apply?

They find most strategies generate, on average, positive returns.

Moreover, most strategies return distributions are positively skewed (with the fixed-income derivative strategy).

Large negative returns do, however, occur occasionally.

Those strategies requiring the highest intellectual capital for implementation appear to generate higher returns (i.e., mortgage, yield-curve, and capital structure).
A Few Comments.

There are a number of interesting parts to this paper.

Indeed, there's much more than I can hope do justice to in my short discussion including:

- complete qualitative descriptions of each trading strategy;
- a quantitative appendix for each trading strategy;
- detailed summary statistics of the risk and return characteristics of each strategy.

A bit difficult to directly compare strategies with varying analysis horizons; raises some questions about the intellectual capital conclusion.
Fixed-Income Arbitrage.

As we all know, this is not really arbitrage.

For each of the trading strategies, there are a number of possible variations.

They vary in complexity from simple (i.e., swap-spread and volatility strategies) to quite involved (i.e., yield-curve, mortgage, and capital structure strategies).

In all cases, however, the basic idea is the same.

One is exploiting differences between theoretical and actual prices.

Let’s look at an example.
One Specific Strategy.

The **yield-curve strategy** uses a theoretical model to price individual bonds (or swaps) across the yield curve.

This permits identification of bonds whose actual prices are **rich** or **cheap** relative to their theoretical prices.

One then **buys** the cheap bond and **sells** a portfolio of (exactly priced) bonds in such a way as to **hedge** against level and slope movements in the curve structure.

It’s really a bet that the bond’s actual price will **converge** to its theoretical price.
One Possible Policy Implication.

Among the Bank’s main tasks is the financial-system function.

This role actively promotes safe, sound, and efficient financial systems, both within Canada and internationally.

Understanding the characteristics of trading strategies undertaken by some market participants would, therefore, quite useful.

This paper seems to reject the “nickels in front of the steamroller” hypothesis.

This methodology, however, permits ongoing evaluation of existing and new trading strategies.
Another Possible Policy Implication.

Canada, like many sovereigns, repurchases less liquid, off-the-run government securities to permit larger gross primary issuance.

Subsequent to each bond auction we repurchase bonds of similar tenor in a market-neutral manner at no cost to the government.

Currently, we are happy with the program and have no plans to introduce any changes.

If asked to consider changes to the program, however, I think this methodology could be useful.