

Discussion of  
“A Preferred Habitat Model of Term Premia,  
Exchange Rates and Monetary Policy Spillovers”  
by  
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## Overview

An important, well-written paper that will be a major contribution to our understanding of international financial markets:

- Builds a model that explains foreign exchange and long-term bond risk premia
- Calibrates the model and assesses quantitatively the response of returns to shocks such as conventional monetary policy shocks and QE
- Can reproduce return predictability regressions

Given the limited time, I will make some suggestions for sharpening the questions asked, and some suggestions for future research.

## “Literature Review” (1975-1990)

In the 1970s and 1980s, there was a large literature that attempted to incorporate models of asset choice into open-economy macro models (not just Kouri, 1976), following Merton (1973).

There were ad hoc portfolio balance models, 2-period CAPM, and intertemporal consumption-based models.

But the literature was largely unsuccessful because:

- It could not account for the size (for plausible degrees of risk aversion) -  $\text{var}(rp_t) > \text{var}(E_t s_{t+1} - s_t)$  - and co-movement of risk premia with interest rates
- It could not really explain portfolio holdings (e.g., home bias puzzle)
- It was very difficult to incorporate into realistic macro models (such as New Keynesian models.)

## “Literature Review” (1990-2020)

- Some progress made in jacking up risk premia using, e.g., Epstein-Zin preferences with long-run risks, or rare disasters (though not all return puzzles are resolved)
- Some progress in incorporating portfolio choice in more realistic macro models (approximation methods, e.g., Devereux-Sutherland; numerically, e.g., Sauzet)
- Some progress in explaining actual portfolios (e.g., Coeurdacier et al.)

It is almost certainly fair to say that the goal of having a full general equilibrium macro model that realistically incorporates a role for monetary and financial policies; produces realistic risk premia; and can account for asset pricing puzzles has not been reached.

## Where Does This Paper Fit In?

It offers a plausible model that accounts for puzzles on bond returns, foreign exchange returns, and the relationship between those. It is a promising revival of the portfolio-choice approach.

How does it relate to the shortcomings of the previous literature?

- It offers a nice explanation for some important puzzles, though as I will explain briefly, more could be done to account for the size of risk premia
- Inherently, it cannot really explain portfolio holdings – some demand comes from exogenous “preferred habitat”, and some from a financial intermediary whose location and ownership are not specified.
- The jury is out on the prospects of incorporating this model into a realistic macro framework.

## **How Does the Model Differ from Previous Literature?**

The key modeling device is to abandon the assumption that all asset demand comes from individuals maximizing the expected discounted value of the utility of consumption.

“Preferred habitat” borrowers/investors, and a mean-variance optimizing financial intermediary.

The model is related to the “financial intermediary” models of asset demand

- though explicit balance sheet constraints on the intermediaries are not introduced
- Instead, intermediaries implicitly face constraints on limits to “arbitrage” which are represented as a mean-variance objective function

## Contribution of Paper

The paper should focus more on what the model can contribute, in particular to a very old-fashioned ad hoc Tobin-Branson “portfolio balance” model: home and foreign short-term and long-term bonds are imperfect substitutes because there is a CES utility over these assets.

Qualitatively, the intuition of that model is very similar to the G-R-V model: E.g., an increase in the home short term rate leads to higher demand for home short term bonds and lower demand for the other three bonds:

- Home long-term rate rises, but not as much as short term rate as agents substitute away from long-term bonds
- Home currency appreciates as agents substitute away from foreign short-term bonds to home short term bonds
- But home appreciation not as large as under UIP, so Fama puzzle
- Foreign long-term rate rises, as agents shift from foreign long-term bonds

The model’s contributions, I think, are implications about shifts in overall “risk aversion” of intermediaries, changes in second moments of returns, accounting for asset pricing puzzles, and the quantitative implications.

## Size of Risk Premia

- Intermediaries have constant absolute risk aversion. CARA is odd. For example, the size of the portfolio of risky assets does not change with wealth. The tradeoff between return and variance changes as wealth changes – as wealth increases, relative risk aversion rises!
- Most problematic is aggregation. Suppose as in the numerical section, relative risk aversion is  $\lambda$ . Absolute risk aversion,  $a$ , and wealth are interdependent:  $aW = \lambda$ .
- If  $a$  is a deep parameter, then relative risk aversion,  $\lambda$ , must fall by a factor of 10 if the intermediary is split into 10 smaller intermediaries.
- The paper estimates the wealth of “intermediaries”, but it matters if there are one or ten intermediaries.
- Is it possible to change the objective function to  $Er - \lambda Var(r)$ , rather than  $Edw - aVar(dw)$ ?



## How Obstinate are Preferred Habitat Investors?

- Can we gauge the risk/return tradeoff that preferred habitat investors might be foregoing?
- E.g., I might need dollars one-year from now and have a preference for a one-year bond.
- What would it mean if I gave up a large expected return in order to avoid holding a bond that matures in 11 months, with the plan to roll over my wealth into a 1-month bond at the end of the 11 months?
- The paper notes that preferred habitat investors can be provided an optimizing foundation in an OLG model with investors that consume only at the end of life and are “infinitely risk averse” – and that really does not help solve the puzzles about the size of risk premiums.
- What is the Sharpe ratio for the various preferred habitat investors?

## **Future Research: I**

- In the current version, the intermediary values returns in home currency (or the home consumption basket).
- Extend the model so that some intermediaries value returns in home currency (or home consumption basket) and some intermediaries value returns in foreign currency (or foreign consumption basket).
- One of the most fun things about international finance is that investors don't even have the same assessment of the first and second moments of returns! They only agree when the nominal (real) exchange rate is constant.
- The dollar bond is riskless for the U.S. investor, and the euro bond is riskless for the German investor.

## **Future Research: II**

- The model is one of equilibrium portfolios, but not of portfolio adjustment or asset flows
- Slow adjustment could be modeled as a cost of adjusting portfolios both by preferred habitat investors and the intermediary
- More interesting for the intermediary would be to have assets that have only fire-sale value if they are liquidated too soon, and liquid assets, along with explicit balance sheet constraints

## **Future Research: III**

How does the model work at the ZLB?

The ZLB offers a sort of “natural experiment”. Further exploration of the implications of monetary easing in normal times versus “forward guidance” at the ZLB in (or LSAP as in the paper):

- “expectations” (i.e., risk neutral) models
- representative agent risk averse models
- models with explicit balance sheet constraints
- models with costly portfolio adjustment
- this model

The point is that monetary easing through forward guidance doesn't lower short-term rates at the ZLB. Do long-term rates fall? If so, is that a fall in the risk premium, a relaxation of a constraint, or slow portfolio adjustment?

## **Future Research: IV**

Another natural experiment arises because the currency of debt is sometimes decoupled from the nationality.

Sometimes the same borrower issues debt in home and foreign currency (such as sovereign borrowers in many emerging markets.) For example, non-U.S. borrowers may issue debt in dollars.

In the data, the expected returns on debt issued in a common currency differ by country of issuance. Default risk? Convenience yield? Or preferred habitat?

## Future Research: V

How sure are we about these asset pricing puzzles? They do not seem robust in data from the 2000s.

$s_{t+1} - s_t$  is not persistent but volatile,  $i_t - i_t^*$  is persistent but not volatile.

1. The Fama regression is nearly unbalanced
  - a. This is evidenced by instability of parameter estimates
  - b. Small-sample bias in standard HAC estimates of standard errors
2. Medium- and long-horizon returns (1 yr. to 5 yrs.)
  - a. Small-sample bias
  - b. Analytic corrections may not be adequate

In the 2000s, the variance of  $i_t - i_t^*$  is tiny. On the other hand, the stationary component of  $s_{t+1} - s_t$  has become more persistent. This might be a mirage, but if not, long-horizon forecast power is not surprising or interesting.

My version of the paper does not say how the paper simulates the model to match the predictive regressions, but if the sample sizes match the data, then do we see the same parameter instability in (1) and the small sample bias in (2)?

## **Concluding Thoughts**

This is an important paper that goes a long way to developing our understanding of how risk and return are related in bond and currency markets.

It probably doesn't resolve all questions (fortunately, because we'd have to find new jobs if it did.)

But it clarifies the behavior of expected returns in response to shocks and offers a solid building block for future research.