

Have risk premia vanished

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This paper's method identifies:

- ▶ Number of such regime changes or break points
- ▶ The length of each regime
- ▶ The (estimated) parameters under each regime

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1. There are 4 major breaks in a six-factor model
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This paper’s method also identifies subset of stocks that are first exposed to break risk

There are two major challenges in estimating parameters

1. How many breaks occur?
2. Conditional on the number of breaks, when do breaks occur?

To answer these questions, the paper develops a Bayesian framework

Estimation Method:

1. **Draw parameters:** Conditional on the # of breaks and the location of breaks, posteriors of parameters are sampled using Gibbs sampling
2. **Draw break-point locations:** Conditional on the # of breaks, breakpoint-locations are identified using Metropolis Hastings
3. **Draw # breaks:** Given a set of break-point location, add or drop a new break depending on their Bayes Factors (BF) (Green 1995)

Questions on Methodology:

1. To draw # breaks, computing BF is required. However, the paper computes posterior model probabilities (rather than BF). How reasonable is it?
 - ▶ For example, the paper specifies apriori that breaks occur, on average, every 20 years
 - ▶ So, apriori, wouldn't a model with 30 breaks (if the sample has 360 months) has more probability than a model with 360 breaks?
 - ▶ How sensitive is your results to prior model probabilities?
2. Using BF, the paper shows that their discrete-break model outperforms smoothly-evolving parametric model (e.g., Ang and Kristensen (2012))
 - ▶ Is this result robust to other prior specifications? What if the paper starts with a prior that there is a break every period? Would the result still hold?
3. Do this paper's return forecasts outperform return forecasts from Ang and Kristensen (2012)?

The methodology has ubiquitous applications in finance

1. The method could be applied to examine breaks in the option markets
2. Method could be applied to detect real-time arbitrage crashes (e.g., covered interest rate parity, or paired matching strategies)
3. Method could be generalized to handle a large set of predictors

Highly stimulating and influential paper (research)!

Look forward to learning more applications