

Fin Statbility Paper Review

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基本上 GitHub 上我一篇篇都抽空回复，我们按照论文重要性，一篇篇的过

1. 确定我们的查询的方向
2. 目的是可以知道下次看文献看那些重点

简述问题

目前需要找一个衡量金融稳定性的指标，按照现有的数据，我们可以做一国债券收益率的**滚动标准差**，衡量该国债券市场的风险，衡量该国的金融（市场）稳定性。例如，

用一国的十年债券收益率，计算收益率的标准差，衡量一国的金融稳定性，作为一个被解释变量。 目前的研究变量为美债的买和卖，去跟稳定性做回归，验证假设，买美债会导致金融稳定性上升。

现在以 **beta** 为主

另外一种想法是根据微观里面的 CAPM 模型，类似地，一国的债券收益率，和全球的债券收益率回归的 **beta** 系数，可以作为风险衡量指标，这个风险衡量指标，我们可以拟合滚动的，用这个指标衡量该国债券市场的风险，衡量该国的金融（市场）稳定性。

目前这两种思路缺少支持的文献

1. 需要佐证可以用滚动标准差衡量风险，进而衡量金融/经济稳定性
2. (现在以 **beta** 为主) 需要佐证可以用滚动 **beta** (不需要衡量风险)，衡量金融/经济稳定性，也就是 CAPM 是否在宏观上进行应用。

希望输出的结果

英文文献优先，在此基础上有计算公式的优先，限定经济体如贸易国家、发展中国家的优先。

1. 施进益可以找理论方向的，主要看文献的摘要 -> 结论 -> 前言
2. 黄许良 (???) 找实证方面的，主要关注实证方法论上的怎么处理滚动 **beta** 的，要求还是按照我们之前的沟通。

Todos

- □ 你可以有空把 BibTex 补上，这样方便文献管理。

论文阅读

ülkü and Baker (2014)

主要结论

1. 这篇论文明确说明 **beta** 可以代表风险 (riskness)
2. 这篇论文明确使用一段时间的估计的 **beta** 做实证处理
3. 这篇论文明确表示可以用 GDP 等表弟估计 **beta**，因此现在用美债也可以。

具体如下。

and macroeconomic betas (the sensitivity of national output and inflation to world output and inflation). ... world output volatility is somewhat significant, while inflation betas, trade openness and world stock market volatility are insignificant ... (Ülkü and Baker 2014)

这里使用 GDP 类似的文献，我觉得符合我们的需求了。

$$Y_{i,t} = \beta_0 + \sum_{k=0}^k \beta_k Y_{W,t-k} + \sum_{l=1}^l \alpha_l Y_{i,t-l} + \varepsilon_t$$

where $Y_{i,t}$ and $Y_{W,t}$ are the macroeconomic variables of country i and the world, respectively (growth rates of either monthly real industrial production or quarterly real GDP, both adjusted for seasonality, or the first-difference of the annual percentage change in CPI). $Y_{i,t-l}$ control for potential serial correlation in macroeconomic variables; thus the variables in the model can be considered equivalent to shocks from an AR(k) and AR(l) model, respectively. The estimation is performed for each macroeconomic variable separately. k and l are set separately for each country based on significant lags. In most cases k and l took the value of two or three, with few exceptions of one or four; we permitted a maximum of five lags. Country i 's macroeconomic market beta (β_i^M) is given by $(\beta_1 + \beta_2 + \dots + \beta_k)$. (Ülkü and Baker 2014)

使用 $(\beta_1 + \beta_2 + \dots + \beta_k)$ 估计即可，跑一个 AR 模型即可。

Then, we divide our 15-year sample into five three-year subperiods, estimate these betas for each subperiod using short-window regressions as in Lewellen and Nagel (2006), and run the following random-effects (RE) panel regression:

$$\beta_{i,\tau}^R = \theta_0 + \theta_1 \beta_{i,\tau}^M + \theta_2 X_{i,\tau} + u_{i,\tau} + v_{i,\tau}$$

where τ is the index of subperiods, $u_{i,\tau}$ is between-entity error, $v_{i,\tau}$ is within-entity error, $X_{i,\tau}$ is the vector of control variables for country i in subperiod τ (world macroeconomic volatility measured as the subperiod standard deviation of $Y_{W,t}$, the subperiod mean of $Y_{W,t}$, world stock return volatility measured as the subperiod standard deviation of $R_{W,t}$ and trade openness) and θ_2 is a (row) vector of coefficients. (Ülkü and Baker 2014)

这里使用 $Y_{W,t}$ 和 $R_{W,t}$ 作为波动性的度量，从 GDP 和 股票市场两个角度度量，虽然不是滚动的情况，但是也是分割时间段估计的，我觉得标准差的 idea 基本上可以用这个论文佐证了。

Focusing on betas instead of correlations or R2s from a world factor model enables us to associate the riskiness of a country's stock market with its macroeconomic riskiness. (Ülkü and Baker 2014)

beta 可以衡量风险，因此和债券市场稳定性(金融稳定性)关联了。

Clare et al. (1998)

The UK stockmarket is tested for mean variance efficiency (MVE) in the sense that sectoral stock returns satisfy the restrictions implied by CAPM. There are two main innovations in the paper. One is the use of a model for excess returns in which the conditional covariance matrix of returns varies over time due to the simultaneous influence of four macroeconomic shocks. The other is the use of a likelihood ratio test for MVE calculated from analytical derivatives of the likelihood function in order to reduce the computational burden of these high parameter dimensional models. The model with macroeconomic shocks is compared with the multivariate ARCH-in-mean model. Although the macroeconomic shocks model is found to perform slightly better than the ARCH model, and both produce a significant and plausible estimate of the coefficient of risk aversion, the null hypothesis that the UK stockmarket is mean variance efficient is

rejected for both models in favour of the alternative hypothesis that equity returns are an unrestricted linear function of asset shares. Another important finding is that the most important shocks affecting the UK stockmarket either have an international origin or are due to the bond market. ? 1998 John Wiley & Sons, Ltd. (Clare et al. 1998)

摘要没有提到 beta 估计，或者使用 beta 估计风险。

$$\Omega_t = P'P + \sum_{i=1}^g x_{it}^2 \mathbf{h}_i \mathbf{h}_i'$$

x_{it}^2 衡量风险，查询下源头是什么。

The US studies focus on inflation, output, the term structure and 'corporate risk' (i.e. a debenture-long government bond spread) as sources of risk, while Clare and Thomas (1994) consider 18 macro-financial variables, including oil prices, the current account balance, exchange rates and the term structure of interest rates. (Clare et al. 1998)

我查到是这些宏观变量，那么问题在于平方衡量风险、波动不做滚动的依据是？这个地方往下看，(???)

Dewachter2004The

德国，月度数据，cpi 衡量通胀，gdp gap 衡量 gdp 变化（我个人是这么理解），被解释变量债券利率

单独看摘要，我觉得这篇 Dewachter, Lyrio, and Maes (2004) 没有谈论风险和金融稳定性。

We develop a benchmark against which the effects of ECB monetary policy on the German bond market can be evaluated. We first estimate an affine term structure model for the pre-EMU period linking the German yield curve with the Bundesbank monetary policy. The German monetary policy and its implied yield curve are then reprojected onto the EMU period. The reprojected yield curve differs significantly from the observed one. Short-term interest rates during the EMU period are significantly lower than they would have been in case the Bundesbank was still in charge of monetary policy. Furthermore, yield spreads increased substantially during the EMU period (Dewachter, Lyrio, and Maes 2004)

单独看结论也没有提到。

This paper provides a method to include unobservable variables in the Bundesbank monetary policy rule. By incorporating the current economic situation (instead of generating prediction densities) filtering procedures are proposed to generate the unobserved latent factors (real interest rate and central tendencies of output gap and inflation). This filtering technique has the desirable property that the filtering uncertainty remains limited and relatively low. Therefore, this method will retain its usefulness in the future. As such, the main contribution of this paper consists in providing a method to generate national benchmarks to evaluate the effects of ECB policy on national bond markets (Dewachter, Lyrio, and Maes 2004)

(???) 许良，你指的是哪一部分？

Geyer, Kossmeier, and Pichler (2004)

Geyer, Kossmeier, and Pichler (2004) 这篇也是用 spread 衡量风险，但是没有说这个风险可以代表一个的金融稳定性，和这篇类似。

Lin, Wang, and Gau (2007)

(???) 力远这篇 Lin, Wang, and Gau (2007)

This study empirically studies the predictability of excess bond returns based on the time-varying risk exposure for investors and time-varying risk.

没有明显告知风险指标是怎么度量的。

Credit risk (CRSPRD) measures the change in credit risk between individual countries and US T-B/ world government bond. Emerging bond sensitivities to changes in local bond yield and benchmark market bond yield could be considered as a proxy for the global investment portfolio re-allocation between countries. Local bond returns increase with a credit spread. This explains that investors should receive high compensation for high volatility.

这个地方说了是两国的收益率差值 (local bond yield and benchmark market bond yield)，这里的假设是高相对风险高相对回报 (investors should receive high compensation for high volatility.)

Barr2004Expected

Barr and Priestley (2004) 在 methodology 这一块解释了风险度量方式。

$$\mathbf{r}_{it} = a + \mathbf{b}_i^L \mathbf{Z}_{i,t-1}^L + \mathbf{b}_i^W \mathbf{Z}_{t-1}^W + it$$

where \mathbf{r}_{it} is a vector of local bond excess returns, a is a constant, \mathbf{b}_i^L is a vector of estimated coefficients associated with the local instruments, $\mathbf{Z}_{i,t-1}^L$ is a vector of local instrumental variables specific to country i , \mathbf{Z}_{t-1}^W is a vector of local instrumental variables and it is a vector of residuals. The world instruments are: the spread between the yield on a portfolio of world long term government bonds and the 1 month US euro-deposit rate; the first lag of the world bond market return; the first lag of the world stock market return, and the yield on long term government bonds minus the yield on the equity market. The local instruments are: the spread between the yield on long term government bonds and the 1 month euro-deposit rate; the first lag of the local bond market return; the first lag of the local stock market return, and the yield on long term government bonds minus the yield on the equity market. Supremum LR (see Andrews (1993)) and Exp LR (see Andrews and Ploberger (1994)) are sequential Chow tests for the presence of a single break in any of the coefficients. The supremum test (10%, 5%, 1%) critical values for the local and world regression are (23.15, 25.47, 30.52), and for the remaining 2 are (16.20, 18.35, 22.49). Equivalent figures for the exponential test are (12.71, 14.16, 17.30) and (7.76, 9.01, 11.32). Parameters for the tests are: 15% trimming; 9 and 5 variables tested, and $c = 0$ for the exponential test. The F-test is a test of the restriction that the coefficients on the indicated regressors are jointly zero; probability values are in parentheses.

这个地方出了 X 变量里面有一个 spread 比较具备风险的性质，其他 x 变量我们现有数据都有。因变量是正常的本国债券收益率。

$$r_{i,t} = \left(\theta_i \lambda_{b,t-1} \text{cov}_{t-1}(r_{b,t}, r_{i,t}) \right) + \left((1 - \theta_i) \lambda_{i,t-1} \text{var}_{t-1}(r_{i,t}) \right) + e_{i,t}$$

利用各国之间的滚动协方差和方差估计风险。

$$\begin{aligned}\lambda_{b,t-1} &= \exp(\kappa'_W \mathbf{Z}_{t-1}^W) \\ \lambda_{i,t-1} &= \exp(\delta'_i \mathbf{Z}_{i,t-1}^L)\end{aligned}$$

and in which the quantities of risk are driven by ARCH processes. The model indicates the presence of both domestic and world risk factors.

这是最后的风险价格的计算。

我大概看了这个思路，是符合我们现在的数据（各国都有收益率），GARCH 模型这块我可以辅导做。我唯一的以为是最后的这个风险价格，这里的 κ'_W 和 δ'_i 感觉前文没有提及。

Gómez-Puig (2010)

1. Gómez-Puig (2010, 6) Method
2. Gómez-Puig (2010, 12) Data Analysis

(???) 我初略看了这里有两种定义风险的方法

1. debt / GDP
2. spread

具体看看是跟债权国有关还是债务国。

查询下 body 这几个问题是否可以回答

用一国的十年债券收益率，计算收益率的标准差，衡量一国的金融稳定性，作为一个被解释变量。所以目前的研究变量，美债的买和卖，去跟稳定性做回归，验证假设，买美债会导致金融稳定性上升。

去查询是否用回报率做标准差，去衡量金融稳定性的文献。

Boubaker et al. (2019)

Financial development, government bond returns, and stability: International evidence 发达国家和新兴市场国家政府债券对金融市场稳定性的影响。计量方法：使用了季度数据进行分位数回归 变量：government bond prices; domestic financial development; a set of local(country-specific) and global factors that might affect government bond returns. 数据时间范围：Q2: 1999 到 Q1: 2015 样本：18 个发达国家和 10 个新兴市场国家

where i refers to countries; t to time; y_{it} is the return on government bond price index of country i at time t , $Q_h(y_{it}|x_{it})$ refers to h th conditional quantile of y_{it} given a set of independent variables denoted with x_{it} ; FD is a measure of financial development; INF is inflation, GDP refers to GDP growth; CCR is a comprehensive credit rating; ER, FR, and PR refer to economic, financial and political risk scores, respectively; GBR, GLIQ, GU, and GFC denote global bond market returns, global liquidity, global bond market uncertainty, and global financial conditions variables, respectively.

(???) 许良我看了他的方程，似乎没有自定义风险的指标，风险指标是外部引入的。你指的是哪一个？ (???) 许良我看了你截图的地方，这里的问题和之前那篇差不多，没有提到风险度量。

这里的风险指标是风险厌恶程度 **risk aversion** 是直接获得的数据，不是作者估计的。这个指标我们不太能够获得。这个指标类似于标普五百是大盘指数，目前大多数国家都没有，中国我记得是 17 年才开始实行。

按照我们最开始的沟通，

优先查询金融稳定性是否是风险指标度量的，是否是类似于标准差度量的，是否是类似时间序列进行滚动求解的。一般来说，这种摘要没有提及，实证方程里面没有风险指标或者是外部数据直接引用的，应该和我们的查找方向不一致。(???)

其他

Tsen (2011) 这篇我从他的公式里面没有看到风险的度量，确切说是利用标准差类似指标的度量。

$$\begin{aligned}\log RER_t &= \beta_{10} + \beta_{11} \log TOT_t + \beta_{12} \log PD_t + \beta_{13} \log RD_t + u_{1,t} \\ \log TOT_t &= \beta_{20} + \beta_{21} \log O_t + u_{2,t}\end{aligned}$$

你可以再看下，回头有的话，你标注下，我再去看看。

Ansari and Ruschendorf (2017) 这里我在看开头你高亮部分看到这里使用的是 *Value at Risk of the aggregated portfolio*。目前来看我们的数据应该不适合这种面板数据，我们是时间序列，因此度量是在时间上，做滚动时间序列得到。(???)

我想这个方向会比之前的更窄一些，你可以再看看。

(???) 昨天的文章在文献综述部分有说到前人的研究，下午去看一下，目前讨论的结果持有美元债券如果 **beta** 系数大那收益或者说回报也大
<https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp641.pdf?5b6defa088d0e5ea540d86b68026f286> 下面一篇是和汇率相关的 <https://www.econstor.eu/bitstream/10419/107958/1/820433454.pdf> 下午看了下再贴上来

标记下 notes。(???)

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