BEAR BETA

[Yuan Chen and Hengyu Dai]

Discussion by:

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Are changes in the probability of future bear market states priced in the market?

Cross-sectional study of priced factors concerning the probability of **economic downturns**

Literature:

- **Other** risk factors related to economic downturns:
  - Jump beta
  - Volatility beta
  - Downside beta... etc.

  → None focus on **left-tail outcomes**

- Left-tail risk is critical to understanding **asset return**

  → Introduce **Bear beta**

REFERENCE: CONTRIBUTIONS

What is new?

- **Measure** for bear market risk using a portfolio (AD portfolio) of put options;
- analysis of **stock return exposure** to bear market risk.

Main result ⟶ Bear market risk is a **priced factor** in cross-sectional stock returns.

Intermediate results

- Bear market risk is **not captured** by standard risk factors;
- stock returns are sensitive to bear market risk [**bear beta**];
- stocks with high exposure to bear market risk have **lower average returns**.

REPLICATION: METHODOLOGY

Construct AD Portfolio:

pays $1 in bear market state

Examine

the relationship between AD excess returns and other risk factors

[regression against Fama-French factors]

Estimate

the exposure of the stocks on bear beta

[regression of stock returns against MKT and bear beta]

Outlook

create sorted portfolios with respect to bear beta exposure.

ACHIEVEMENTS AND RESULTS

Construct the AD portfolio

Estimate bear beta

Time extension

Good contextualization

Clear visual representations

Give further research objectives

OPEN QUESTIONS

Further investigation of results

find positive excess return and alpha of AD bear portfolio

- ➢ investigate data of time extension
- ➢ use original option selection

Reflection on reference

state limitations or possible extensions to the original paper

Econometric details

provide more details on econometrics

- ➢ details for data manipulation
- ➢ significance and robustness

MINOR SUGGESTIONS

Fluency of storyline

enhance connection between theory and empirical results

Reflection on assumptions

add explanations to improve fluency of reading

- 5-day-returns
- selection of put options

Precision in writing

possible improvements

- double-check writing
- introduce all symbols used

PROPOSALS FOR FURTHER WORK

verify **robustness** of bear beta by including a portfolio analysis, other control variables and conducting a subsample analysis (compare to Lu, Murray, 2019)

possible to compare the downside beta with **stock-specific risk measures** and extend analysis **outside US market** (compare Atilgan et al, 2019a)

conduct an **out-of-sample** analysis (compare Atilgan et al, 2019b)

THANK YOU FOR YOUR ATTENTION

Q&A

References

Atilgan, Y., Bali, T. G., Demirtas, K. O., & Gunaydin, A. D. (2019a). Global downside risk and equity returns. *Journal of International Money and Finance*, *98*, 102065.

Atilgan, Y., Demirtas, K. O., & Gunaydin, A. D. (2019b). Downside Beta and the Cross-Section of Equity Returns: A Decade Later. *European Financial Management*.

Lu, Z., & Murray, S. (2019). Bear beta. *Journal of Financial Economics*, *131*(3), 736-760.