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Macroeconomics models and forecasting practices focus on expected mean growth and usually do not model volatility or other higher moment distributions. The authors argue that this can be too narrow when volatility and skewness increase as growth weakens and may lead to systematic underestimation of downside tail risk.

They explore the empirical relationship between financial conditions and the distribution of real GDP growth for 11 advanced economies from 1975 to 2017.

Their objections are twofold. The first is to measure the median and the lower 5th percentile of the distribution of predicted real GDP growth conditional on financial conditions. The latter of which the authors call Growth-at-Risk. The second is to see how GaR changes over a projected horizon of twelve quarters.

By also estimating its term structure, we can evaluate whether higher GaR achieved in the near-term with loose financial conditions is long-lasting and sustainable.

The authors use a model of output growth to model empirically the distribution of future real GDP growth as a function of financial conditions, economic conditions, inflation, and credit growth using panel quantile regression.

They find that the conditional distribution of GDP growth depends on financial conditions, with the conditional growth at the lower 5th percentile more responsive than the median or upper percentiles.

The term structure of GaR features an intertemporal tradeoff: when initial financial conditions are loose, GaR is higher in the short run but lower in the medium run, and the tradeoff is amplified by a credit boom.

The authors find that looser financial conditions in near-term quarters significantly boost expected growth and reduce downside risk for both the 5th percentile and median. The effect declines or subtract from median forecasted cumulative growth in quarters further out, however. They reason that change sin the distribution of GDP growth over the projection horizon reflect changes in the price of risk from financial frictions.

A key result is that GaR conditional on initial loose FCI and a credit boom is significantly higher in the near-term and significantly lower in the medium-term than GaR conditional on average FCI (ie, growth is higher in the near term and lower in the medium-term)

A second key result is that greater downside risk to growth in the medium-term are not counterbalanced by higher expected growth. While expected growth from loose FCI and high credit growth is modestly higher relative to average initial FCI in the near-term, about 0.5 percentage points higher, the difference falls and becomes negative over the projection horizon, while GaR falls much more sharply.

The authors document that the forecasted growth distribution changes with financial condition, a clear violation of a common assumption when estimating macrofinancial models that volatility is independent of growth. This has implications for the models that policymakers base their decisions on because the models tend to assume that growth is not affected by volatility (ie, mean and variance are independent).

The estimated term structure of GaR conditional on loose versus average initial financial conditions supports the intuition of a tradeoff between building greater resilience in normal times in order to reduce downside risks in stress periods.

The authors does several robustness tests. In one they use corporate bond spreads instead of FCI and find that coefficients on corporate bond spreads show a similar pattern to those for the FCI on the 5th percentile, with more narrow spread associated with lower downside risks in the near-term but greater downside risks in the medium-term. They also disaggregate nonfinancial credit into nonfinancial business and household credit, but do not find that one type of credit is driving the results. The GaR estimates are also robust to excluding the global financial crisis. They continue to show a tradeoff, though it is less steep once this significant episode with large negative growth is excluded

Big Questions:

Why is the paper important?

What is the big takeaway?

The big takeaway is that there is an endogeneity issue with standard macro-financial models. There is no “standard” model that incorporates macro-financial linkages that could be used regularly by policymakers.

General Questions (how do you explain it to someone else?):

What is conditional growth?

What do they mean when they talk about median or 5th percentile of the distribution of predicted GDP growth? Is this the range of forecasts from macro-models?

The authors define growth-at-risk as the value at risk of future GDP growth: the probability of the annualized average growth rate of GDP for a country between quarters *t* and *t+h*

What is the term structure of growth-at-risk?

Why is GaR is good metric for financial stability risk?

How do you want GaR to behave ideally?

What is the intertemporal risk tradeoff?

What are macrofinancial linkages?

Do financial conditions affect the distribution of actual GDP growth?

What is Koop and Korobilis time-varying parameter vector autoregression?

What is bootstrapping standard errors?

What is the local projections estimation method (Jorda, 2005)?

Related Studies:

Schularick and Taylor (2012) find that asset prices and credit growth are useful predictors of recessions.

Jorda, Schularick, and Taylor (2013) find that asset price and credit growth lead to significantly weaker economic recoveries.

Borio and Lowe (2002) find that the nonfinancial credit-to-GDP gap has good forecasting power for recessions.

Aikman, Lehnert, Liang, and Modugno (2017) find that the interaction of financial conditions and high nonfinancial credit-to-GDP gap lead to higher future volatility.

He and Krishnamurthy (2013) find that when asset prices rise, increased net worth can make regulatory constraints for financial intermediaries less binding, leading to a reduction in risk prima.

Adrian and Shin (2014) find that when asset prices rise, loosening regulatory constraints lead to additional risk-taking.

Korinek and Simsek (2016) find that lose financial conditions may also ease constraints for borrower, who then accumulate excess credit because they do not consider the negative externalities for aggregate demand.

Gennaioli and Shleifer (2018) interpret lower price of risk and greater risk-taking as a result of beliefs that extrapolate the past and that neglect downside risks.