

# **Credit Market Overheating**

Financial Advisory Roundtable Meeting

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# Credit market fluctuations

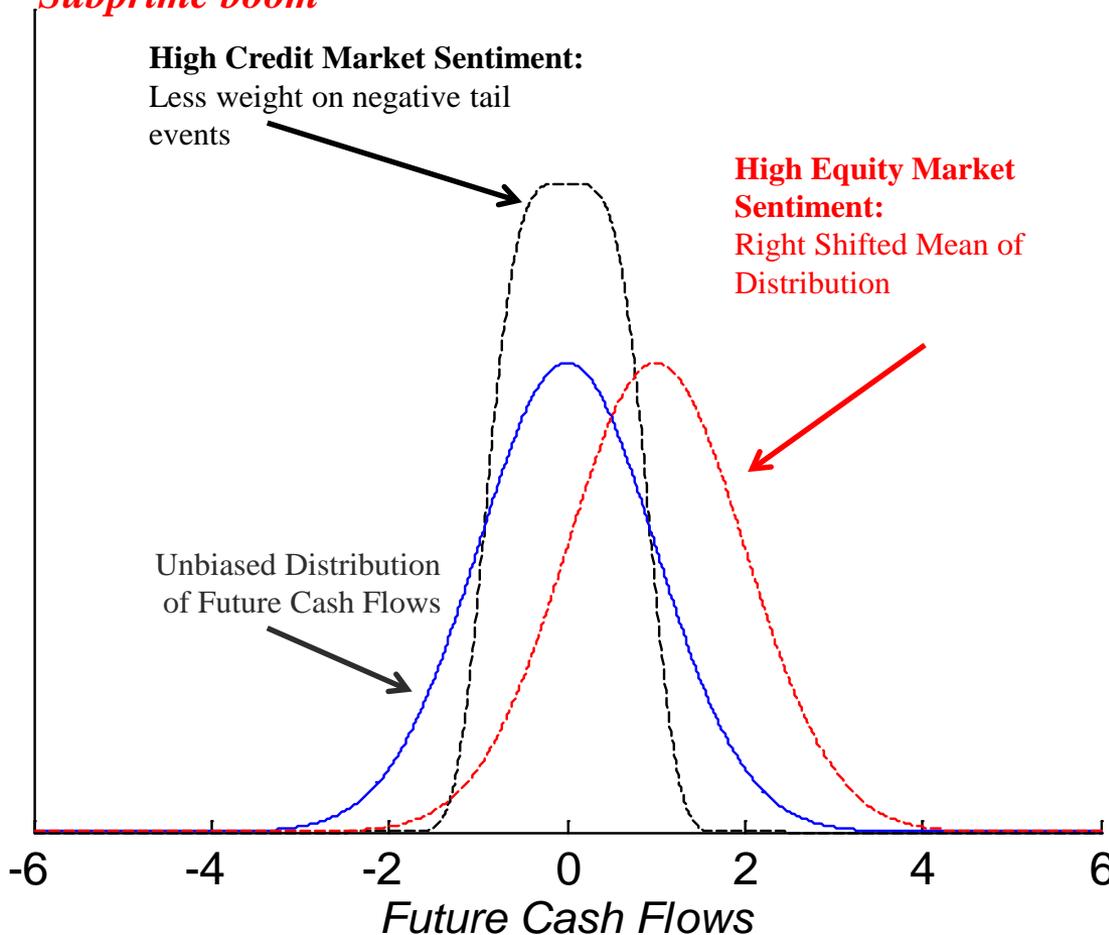
- Are central to our understanding of economic fluctuations
  - High credit growth is associated with a higher probability of a future financial crisis and economic downturns
    - Schularick and Taylor 2012; Lopez-Salido, Stein and Zakrajsek 2017; Mian, Sufi and Verner 2017
  - Periods of high credit growth and low credit quality are associated with low future returns
    - Greenwood and Hanson 2013; Baron and Xiong 2017
  - Credit spreads are typically “too low” in the years preceding financial crises, but jump up on the eve of a crisis
    - Krishnamurthy and Muir 2018
  - Measures of credit market overheating predict economic downturns at a horizon of two years
    - Lopez-Salido, Stein and Zakrajsek 2017
- Credit markets are correlated with the business cycle and the stock market, but have a life of their own

# Elements of credit market overheating

- Low yields/high prices
  - Need to adjust for change in actual default probability (Gilchrist and Zakrajsek 2012)
- Lower lending standards
- Less covenants
  - Becker and Ivashina (2016)
- Credit growth, particularly among low credit quality borrowers
  - Mortgage market: subprime
  - Corporate market: below or near investment grade (Greenwood and Hanson 2013)
- Temporarily lowered default rates due to easy refinancing
- Shorter loan placement cycles
  - Ivashina and Sun (2008)

# How can credit market sentiment differ from equity market sentiment?

*Tech bubble vs.  
Subprime boom*



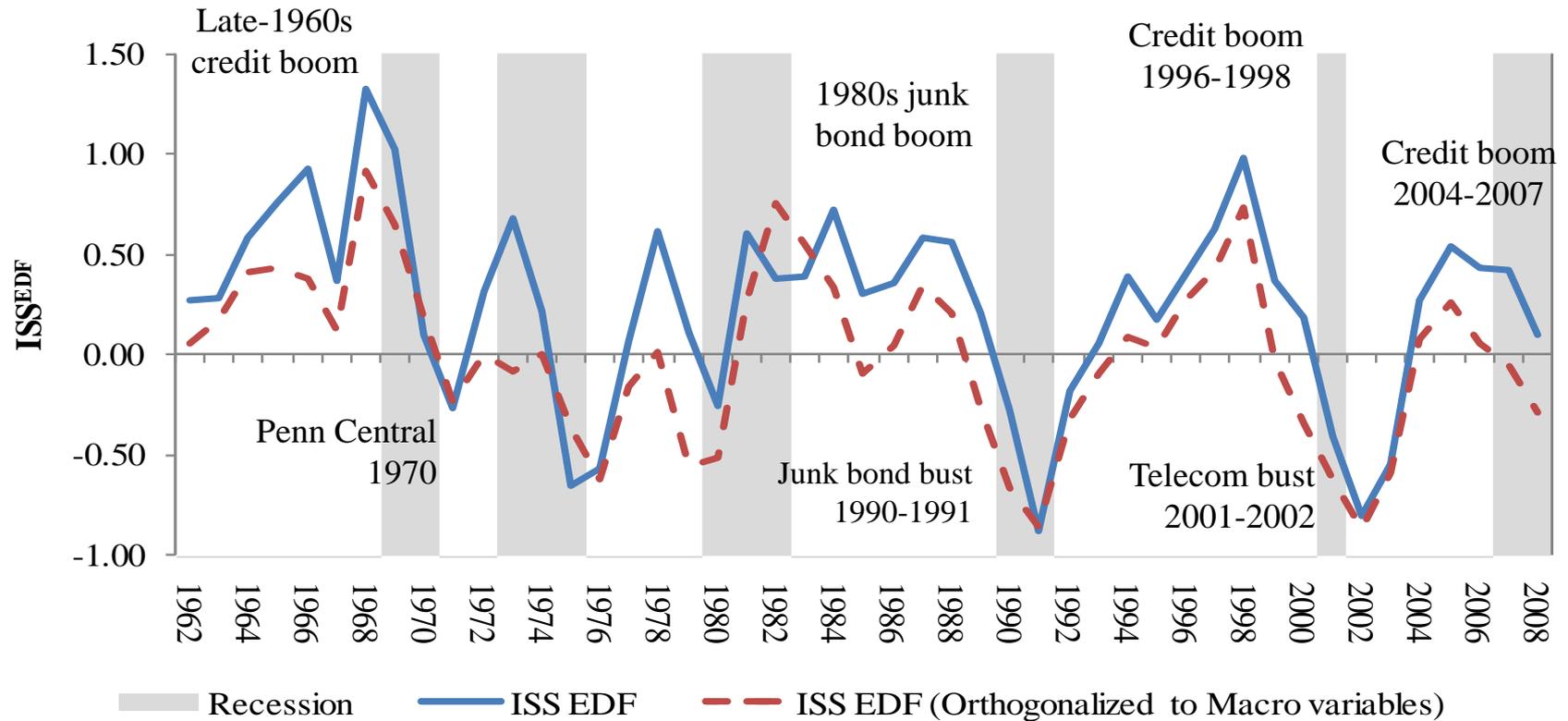
*Empirical measures of credit market sentiment are only modestly correlated with measures of equity market overheating*

*Suggests we should not think of equity and credit markets as fully integrated*

*Measures of expected returns on the stock market, such as CAPE, do not predict future GDP growth (Lopez-Salido et al)*

# Greenwood/Hanson measure of bond market sentiment: $ISS^{EDF}$

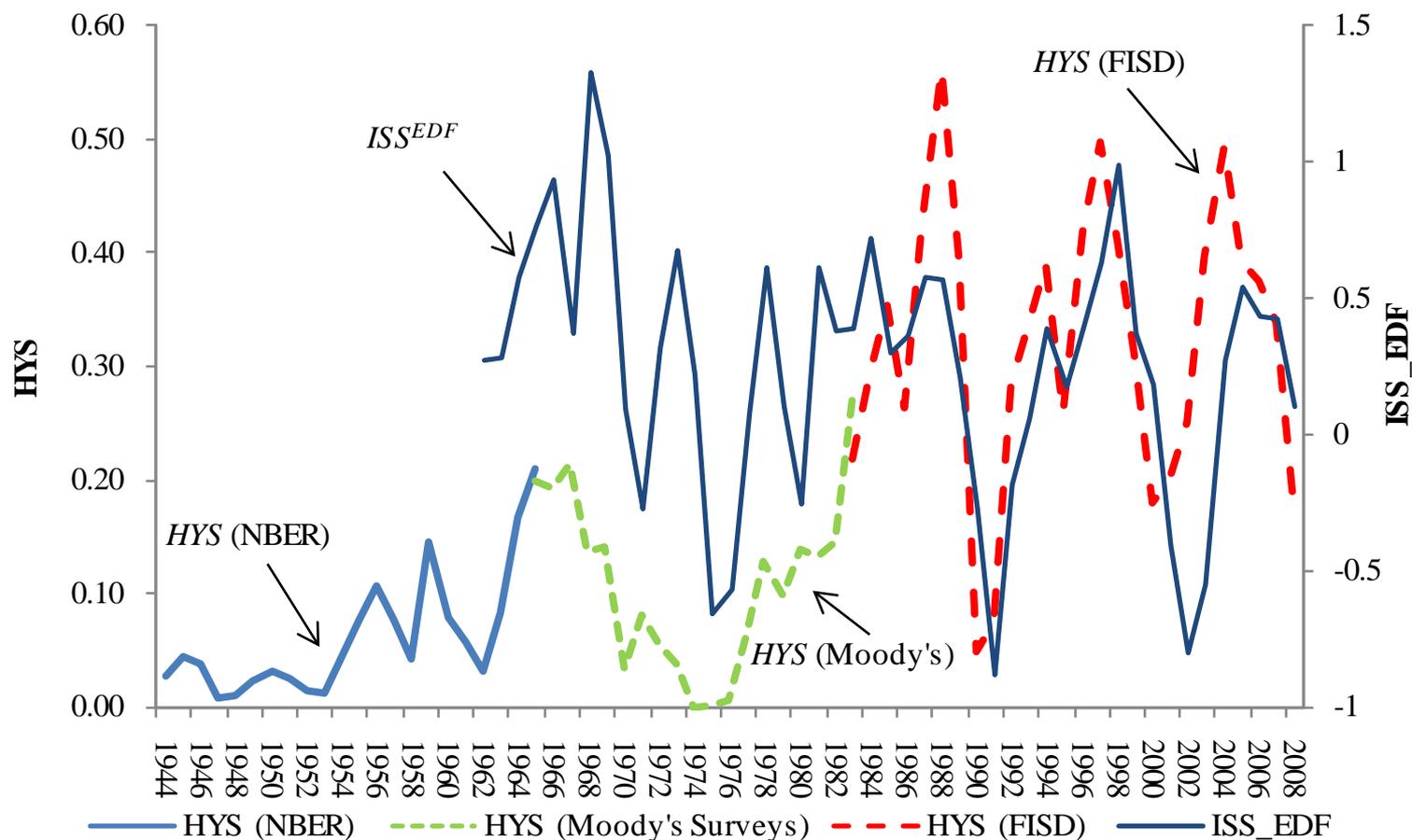
- $ISS^{EDF}$  compares the credit quality of high issuance firms with the quality of low issuance firms
  - Series below is **high** when issuing firms are of *poor* credit quality



- $ISS^{EDF}$  correlated with business cycle, but removing macro variation doesn't change basic character of series

# Measuring issuer quality: High Yield Share

$$HYS_t = \frac{\sum_{HighYield} B_{i,t}}{\sum_{HighYield} B_{i,t} + \sum_{InvGrade} B_{i,t}}$$



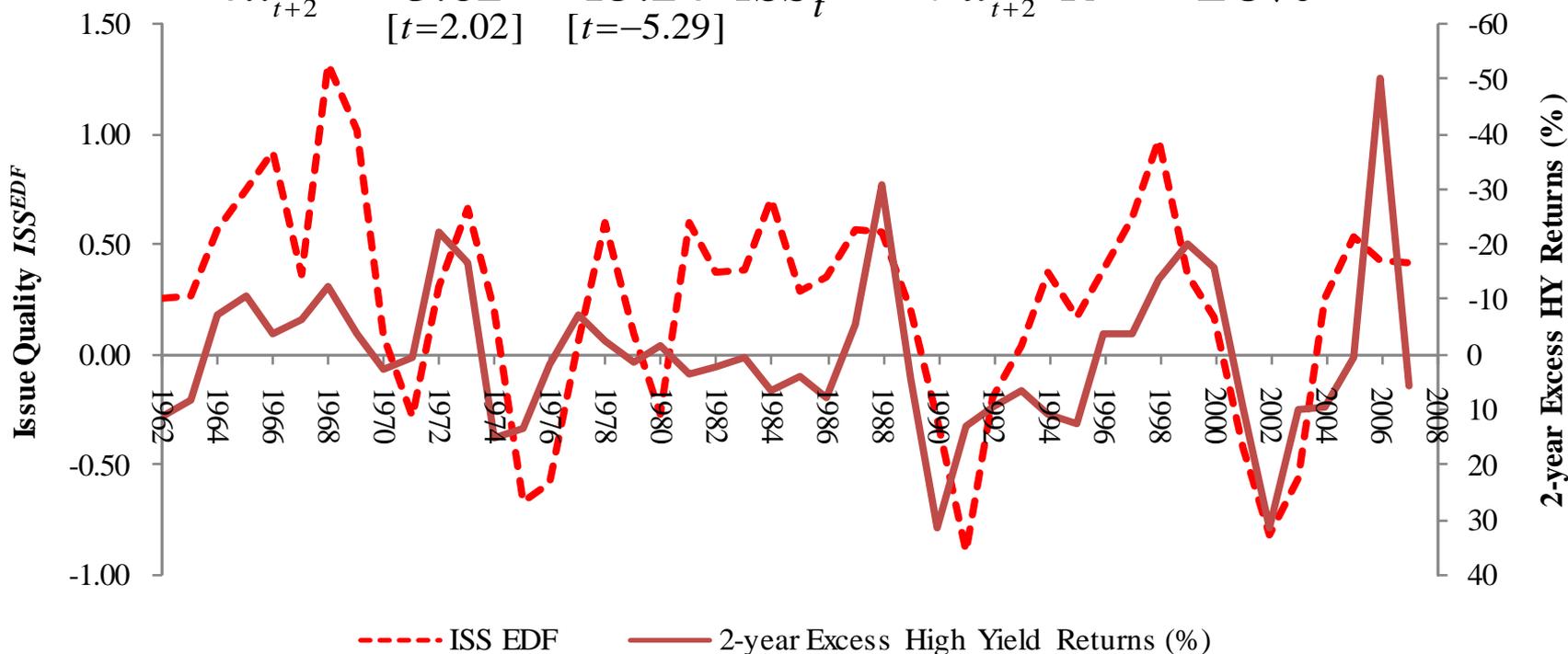
1962-1982:  $\rho(HYS, ISS^{EDF}) = 0.47$

1983-2008:  $\rho(HYS, ISS^{EDF}) = 0.58$

# Issuer quality forecasts excess corporate bond returns

$$rx_{t+2}^{HY} = 3.62 - 15.24 ISS_t^{EDF} + u_{t+2} \quad R^2 = 26\%$$

$[t=2.02]$ 
 $[t=-5.29]$



- **Economic magnitudes are significant:**
  - 1- $\sigma$  increase in  $ISS^{EDF}$  (0.48 deciles)  $\rightarrow$  cumulative excess returns fall by 7.30 %-points over the following 2 years

# Determinants of credit market sentiment

- Short-term rates are low or have fallen in recent past
  - Suggestive of “reaching for yield”
- Term spread is low or has fallen in the recent past
- Past default rates have been low or falling
- Returns to HY bonds have been high
- Intermediary balance sheets are strong
  - Measures of intermediary health following Adrian, Moench, and Shin (2010)
  
- Evidence supports frictional/behavioral interpretations

# A behavioral account of the credit cycle

- Elements of Minsky, Kindleberger, and Bordalo et al.
- Full model is developed in Greenwood, Hanson, and Jin (2019)
- Key feature of the model is *reflexivity*: the feedback loop between investors' biased perceptions and market outcomes
- Main idea
  - Investors hold extrapolative beliefs based on borrowers' recent payment history
  - During a boom, investors extend credit on attractive terms because borrowers have paid back in the past
  - Even if borrowers' fundamental position deteriorates, this may not be directly visible for a while because borrowers roll over debt at low rates
  - When the reckoning eventually comes, markets overreact, slowing the recovery
  - **Predictions:** (1) Behavioral models of the credit cycle features “calm before the storm” when fundamentals have turned, but spreads and default rates are still low (2) credit markets can become disconnected from the fundamentals of the macroeconomy, at least in the short run

# Role of the Fed in driving the credit cycle?

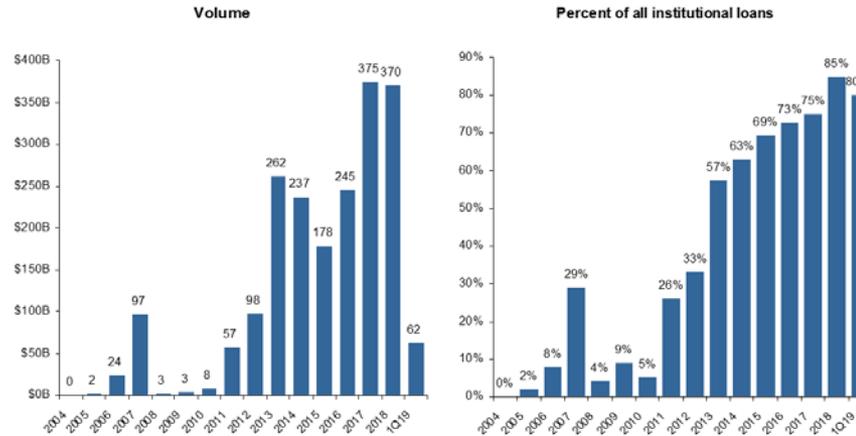
- Fed lowers rates to stimulate economy
- Induces reaching for yield and lower credit spreads
- Expectations cycle kicks in, and credit cycle acquires a life of its own, with credit spreads continuing to fall
- Sooner or later the economy overheats and policymakers raise rates
- At this point, the yield curve is upward sloping as market participants expect further raises
- Firms and banks borrow shorter-term
  - Nagel (2016); Greenwood, Hanson, and Stein (2017)
- At some point, even low credit spreads cannot sustain borrowing of firms with poor fundamentals

## Comments:

- A key aspect of this account is variable leads and lags
- If covenants are *very* weak, prolongs the reckoning
- This account can apply equally to households or firms

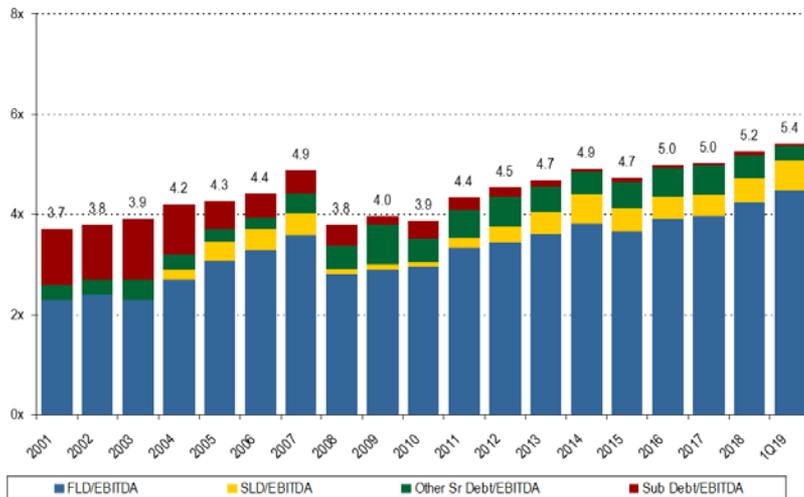
# Where is the credit cycle today?

## Volume: New-Issue US Covenant-Lite Loans



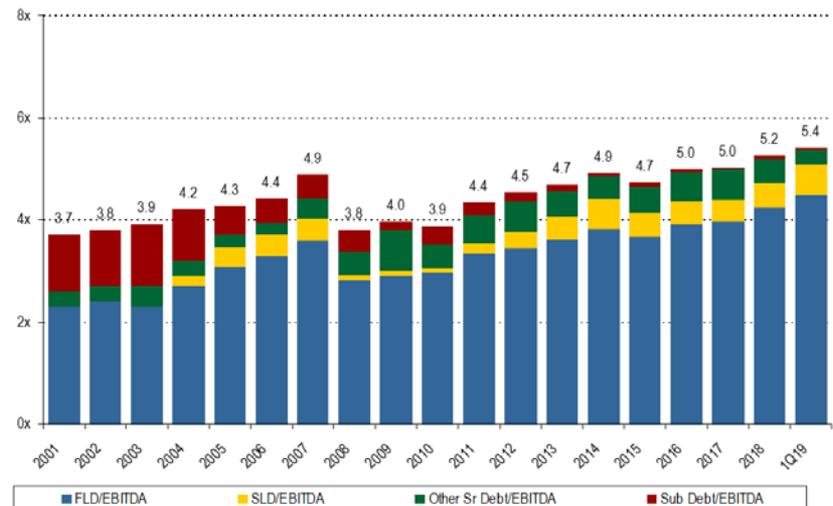
## Credit Stats: Average Debt Multiples of Highly Leveraged Loans

Pre-1996: L+250 and Higher; 1996 to date: L+225 and higher.



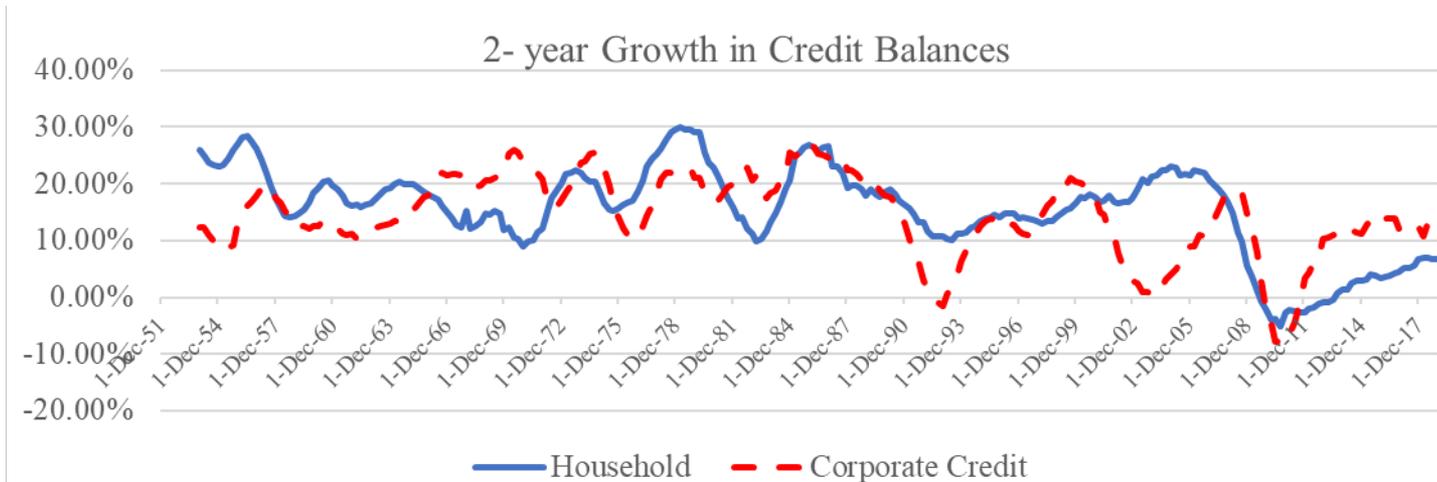
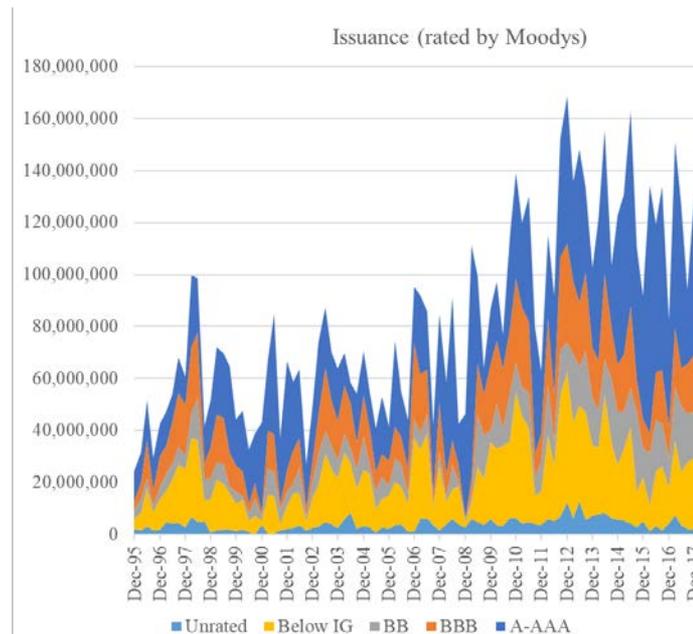
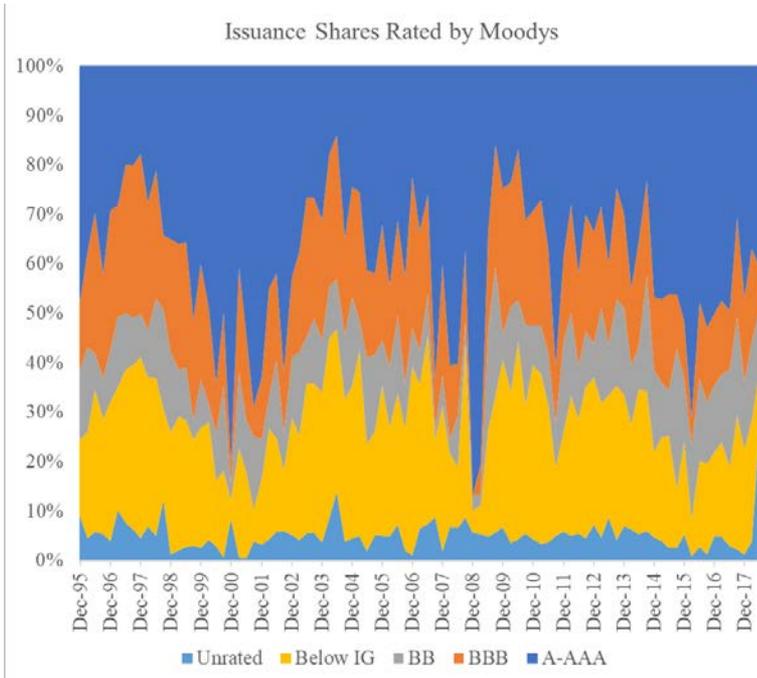
## Credit Stats: Average Debt Multiples of Highly Leveraged Loans

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Source: S&P Global Market Intelligence

# Where is the credit cycle today?



Source: Author calculations based on Moodys, Financial Accounts of the United States

# Should the Fed lean against credit market overheating?

- Potential objectives
  - Reduce volatility in GDP/ Manage the economy
  - Reduce tail risk, probability of a financial crisis
  - Conditional on a crisis occurring, increase resilience of the financial sector
- Tools to match objectives
  - Short rate
  - Asset purchases
  - Macroprudential tools, such as countercyclical capital buffer
- Considerations
  - Even if credit sentiment is not predictably mean reverting, might want to lean against leverage growth for reasons of vulnerability
  - Weight in the policy rule a function of prediction R-squared
    - Predicting price instability vs. predicting financial instability
    - Good vs. bad booms
    - More research on this topic much needed
  - Policy leads and lags
    - If you identify a credit “bubble” and tighten, do you worsen the correction?
  - Credit creation in banking sector vs. shadow banking sector

# References and further reading

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