> Sept 17, 2020 Alan Brazil

• Step 1: Buy IG CDX Protection—Credit is Rich

- Credit has tightened and followed the equity rally and returned to pre-COVID levels
- Step 2: Fundamental Economic Framework
 - Credit is rich because spreads have tightened even though risks are still near their peaks
 - · Leverage and implied volatility are still near March levels
 - A simple "Merton" model is a powerful tool for analyzing corporate capital structure and credit spreads
 - Merton model has captured the movement of corporate leverage through time
 - Merton models credit spreads as the value of the short position of a put option owned by equity owners
 - · As with any option, the models needs two key inputs: the Strike (leverage) and Implied Volatility
 - Based on this model, CDX is rich because spreads are now at pre-COVID levels but should be near wides
 - · Five year probably of default is still elevated given that leverage and implied vol are still near March levels
 - Prior to 2020, the model captured historical relationship between this probability and spreads
 - Now predicted spreads are almost 50 bp wider than actual CDX spreads (after the roll)

Step 3: Identify Potential Catalysts

- Any risk-off event would drive spreads wider
 - Escalation of China/US economic war
 - Presidential election uncertainty
 - A second COVID wave
 - A U- or W-shaped economic recovery
- Step 4: Find Asymmetric Trades
 - Trade: Buy IG CDX protection

Step 1: Macro Theme

If Equities Are Rich, What About Credit?..... Even Richer...¹



20

0 _____ Jan-20

Feb-20 Mar-20 Apr-20 May-20 Jun-20

Jul-20

Aug-20

Sep-20

60

Step 2: Fundamental Economic Framework

Credit Is Rich: Spreads Has Tightened Back To Pre-COVID Levels But Default Risk Is Still Elevated^{1,2}



Step 2: Fundamental Economic Framework

The "Merton" Model Is The Right Framework For Modeling Corporate Credit Spreads,1,2,3

Spreads Reflects The Value of The Default Option Owned By Equity

- Credit spreads reflect the risk of default
- The "Merton" model values this default risk as a put option
 - The model values equity as a call on the firm, which converts into a put on the firm given put/call parity
 - The higher the probability of default the wider is the credit spread
- As with any option there are two key inputs for valuation
 - The Strike is based on leverage, the Debt/ Asset value of the firm
 - Implied Volatility is based on the volatility of the asset value of the firm
- Based on this framework, the optimal capital structure of the firm is determined by the value of the tax shield
 - The tax shield reflects the ability to deduct debt interest expense for paying corporate taxes
 - Optimal leverage goes down if taxes go down or yields fall
- All things being held equal, corporates will increase debt as equity valuations go up to keep optimal leverage constant
 - E.g. equity buybacks financed with debt is a efficient way to keep optimal leverage constant



Model Explains Historical Leverage Vs Benefit of Debt Tax Shield

- 1. Board of Governors of the Federal Reserve, Z1 Data
- 2. Marginal benefit is equal to corporate yield times the effective marginal tax rate
- 3. Federal Reserve Bank of St. Louis, FRED Data

Step 2: Fundamental Economic Framework

The "Merton" Model Model Explains Leverage And It Also Explains Corporate Credit Spreads...¹



Step 2: Fundamental Economic Framework

Merton Strike Based On An Equally Equity Index: Deals With FAAGNs Equity Rally Distortion¹



Step 2: Fundamental Economic Framework

Merton Implied Volatility Should Be Long Dated To Reflect The 5-year Default Risk Of A CDS Contract¹



Step 2: Fundamental Economic Framework

Credit Is Rich Because Spreads Do Not Reflect The Elevated Default Risk Based On The Merton Model¹²



Step 3: Identify Potential Catalysts

Another Risk-Off Event: Equity Implied Volatility Prices In This Risk But Credit Spreads Do Not



Step 4: Identify Asymmetric Trades

Buy CDX Protection—Cheap Downside Protection Vs Equity Puts^{1,2}

Trade Thesis

- CDX offers cheap downside protection vs equity puts
- Upside of CDX protection is even greater if spreads widen closer to model projections
- CDX protection outperforms equity puts because CDX spreads do not reflect the higher implied volatility levels of equity puts

Risks are that CDX continues to tighten



Assumed CDX Spread Movements In An Equity Sell-off

CDX Wins The Horse Race vs Equity Puts In Another Risk-off Event



1. Bloomberg

2. Author's calculations, assumes CDX tightens by 10 bp over six months

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