


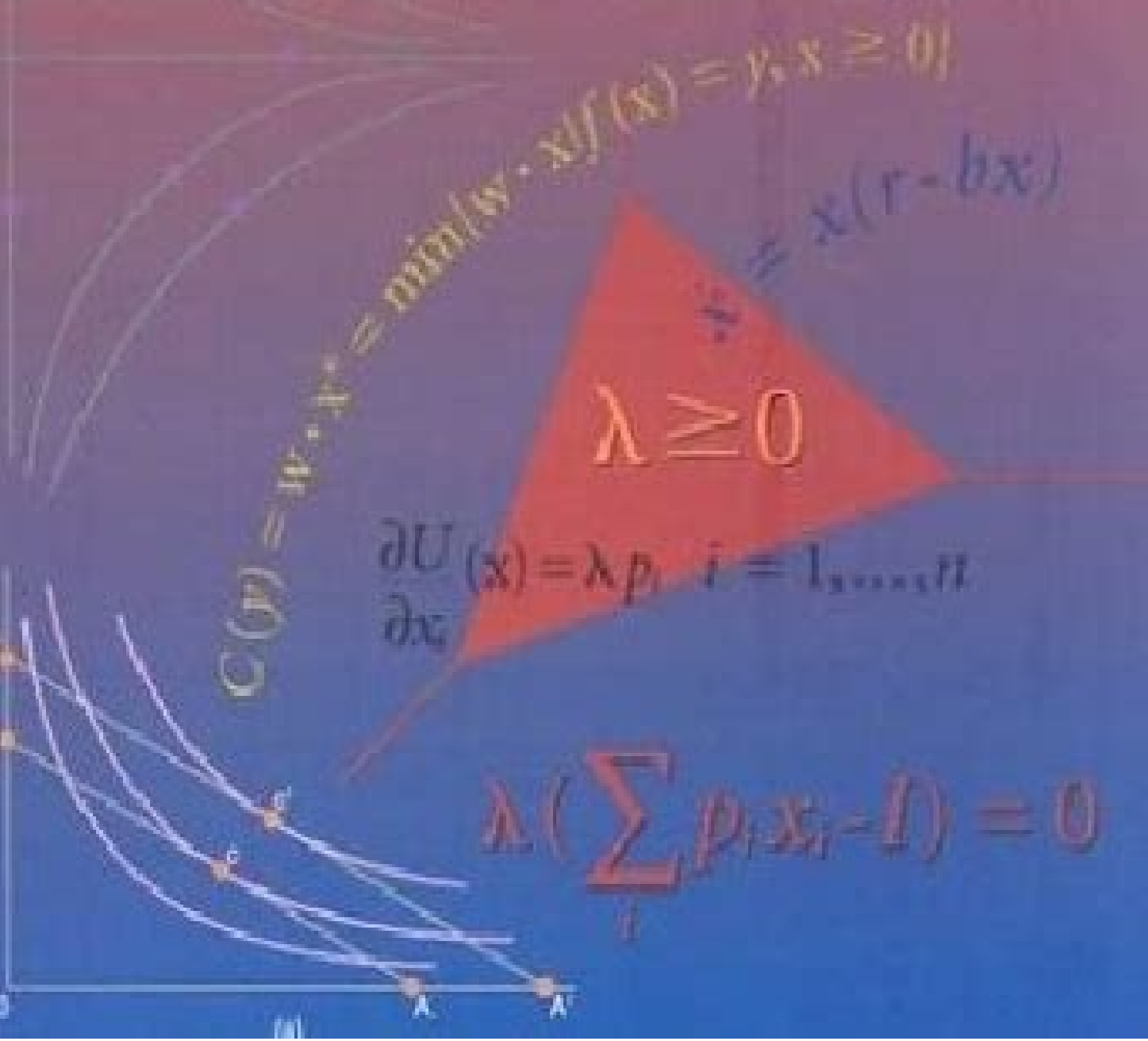
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Mathematics for Economists

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Given that this felt like something that could mutate into a legitimate problem, we were then left to dig into which companies will give us the most torque if we're right. After an exhaustive search we decided on a basket of Discover Financial (DFS.US), Capital One (COF.US) and American Express (AXP.US). Each have their merits as a standalone short, but given their correlations to one another (Figure 5), we can significantly reduce the single stock risk by shorting a basket. As you can see Synchrony (SYF.US) didn't make the cut as their business model of being a retail private-label card issuer made them a unique story within the group.

Figure 5. 2-Year Daily Correlation of Credit Card Companies

	DFS US Equity	SYF US Equity	COF US Equity	AXP US Equity
DFS US Equity	100.0%	70.7%	78.5%	71.3%
SYF US Equity	70.7%	100.0%	76.5%	63.0%
COF US Equity	78.5%	76.5%	100.0%	69.8%
AXP US Equity	71.3%	63.0%	69.8%	100.0%

Source: Forge First, Bloomberg

Of the major US banks, Capital One has the distinction of having the highest percentage of their loan book made up of credit card loans. What's more, 34% of the borrowers in Capital One's credit card portfolio and 49% of those in their auto loan portfolio have a FICO score of less than 660, indicating that many borrowers may be coming to Capital One as a last resort. Amongst other things, this gives Capital One the highest earnings sensitivity to provisions for credit losses (PCLs). Put another way, their earnings are the most negatively levered to credit losses of any of the companies we found.

Discover Financial and American Express are both firmly entrenched in the hyper competitive credit card marketplace with an important differentiator from companies like Visa (V.US) - which the funds are long - and Mastercard (MA.US), they take credit risk. Whereas Visa makes their money solely on spend and fee revenue, 81% and 25% of Discover and Amex's respective business comes from their net interest income. This opens them up to the obvious risks associated with rising defaults that Visa is not otherwise exposed to. Each have unique trading characteristics that make them appealing as shorts and all possess a higher beta than the S&P 500 financials index while American Express actually has a higher negative beta than it does positive (participates more to the downside than the upside) - this is likely because it trades 3 turns higher on a P/E basis than Capital One and 4 turns higher than Discover Financial.

This trade has worked very well since we put it on a couple weeks ago and we believe we've identified a unique sub-sector of the financials that should underperform the broader financial index should the credit market continue to show the strains we have identified here.

CONCLUSION

To summarize, markets are beginning to consider many of the factors that were largely ignored during 2017, and we'd encourage investors to look more closely at their current asset mix. After 9 years of a bull market in equities and as markets transition to quantitative tightening from years of easing, the case to own alternatives has never been stronger. According to Goldman Sachs, the S&P 500 realized volatility was 6.8 in 2017 and has nearly tripled to 20.3 thus far in 2018. They believe that "a shift towards risk reduction and expectation of higher volatility is likely to change the trading dynamics in 2018 and increase the value of time spent on hedging". Of course we could not agree more! Investors should be considering long/short strategies to participate if markets grind higher and protect capital should markets decline. As we've stated in the past but for those not familiar with our strategies, Forge First offers solutions that have a history of generating positive returns in down markets, low correlations to equity indices, and index-beating performance since inception.

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By the contrapositive of (24), we have not $(\forall g \text{succsim}_{\{k\}} f)$. Let $\{h_{i_0}\} = x \text{in } X$. Without these, some preferences would be added in the derivation process of $(\forall \text{succsim}_{\{0\}}, \text{succsim}_{\{1\}}, \dots)$. Note that E2 (transitivity) preserves strict preferences in the same way as E1 ($\wedge \{*\}$). To prove that our extended stream $(\forall \text{succsim}_{\{k\}} \text{range}_{\{k\}})$

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