Beware the Kraken

BPI Staff | October 21, 2020

On Sept. 16, 2020, the Wyoming State Banking Board approved the application by U.S.-based cryptocurrency exchange Payward Inc. for a special purpose depository institution (SPDI) charter.[1] Payward conducts its cryptocurrency operations under the trade name Kraken, and its Wyoming SPDI subsidiary, formally called Payward Financial, Inc., will do business as Kraken Financial. According to its website, "Kraken Financial is the first digital asset company in U.S. history to receive a bank charter recognized under federal and state law, and will be the first regulated, U.S. bank to provide comprehensive deposit-taking, custody and fiduciary services for digital assets."[2]

Kraken indicates it has bold plans: "[f]rom paying bills and receiving salaries in cryptocurrency to incorporating digital assets into investment and trading portfolios, Kraken Financial will enable Kraken clients in the U.S. to bank seamlessly between digital assets and national currencies," and similarly, "Kraken's vision is to become the world's trusted bridge between the crypto economy of the future and today's existing financial ecosystem."[3] At its core, Kraken Financial will custody digital assets on behalf of customers as well as hold those customers' U.S. dollar deposits.

We cannot help but believe that the structure of Kraken Financial is an accident waiting to happen--prone to the same types of run risks as medieval banks and so-called "shadow banks"—but luckily we know how to solve this problem, having grappled with it for more than 500 years.[4] The bank is funded by uninsured deposits and relies on a pool of assets such as corporate bonds, munis and longer-term Treasuries to fund redemptions under stress, even though those assets can be subject to rapid and substantial capital losses in times of stress. If Kraken Financial had been in full operation in March 2020, it may not only have ended up insolvent by mid-March but would likely have been subject to a bank run. In practice, it has more in common with a prime money market fund than a bank.

BACKGROUND

In 2019, the Wyoming Legislature authorized the chartering of SPDIs.[5] The charter is intended to allow banks that receive deposits and conduct other incidental activities, including fiduciary asset management, custody and related activities, to also engage in activities related to digital assets, such as virtual currencies, digital securities and utility tokens.[6] The Wyoming Division of Banking began accepting applications for SPDIs in October 2019; Kraken applied for a SPDI charter just a few months later, in March 2020.

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[1] KrakenFx, "Kraken Wins Bank Charter Approval," Sept. 16, 2020, https://blog.kraken.com/post/6241/kraken-wyoming-first-digital-asset-bank/.
[2] See id.
[3] See id.
[4] See Bill Nelson, "Medieval Money Changers, FinTechs, and the Risk of Unbundling," Bank Policy Institute, Aug. 12, 2020, available at: https://bpi.com/medieval-money-changers-fintechs-and-the-risk-of-unbundling/.
[5] HB74, https://www.wyoleg.gov/Legislation/2019/hb0074.
[6] See Wyoming Division of Banking, Special Purpose Depository Institutions, http://wyomingbankingdivision.wyo.gov/home/areas-of-regulation/laws-and-regulation/special-purpose-depository-institution

The SPDI regime in Wyoming has requirements intended to ensure the safety and soundness of institutions.[7] Chief among these includes a requirement for liquid assets that provides: "At all times, a special purpose depository institution shall maintain unencumbered liquid assets valued at not less than one hundred percent (100%) of its depository liabilities."[8]

Liquid assets are then defined by statute to mean U.S. currency held on the premises of the special purpose depository institution; U.S. currency held for the special purpose depository institution by a federal reserve bank or a federally insured financial institution; investments that are highly liquid, including obligations of the U.S. Treasury or other federal agency obligations, consistent with rules adopted by the Wyoming state banking commissioner.[9] The rules of the Wyoming Banking Division further define liquid assets to include a variety of financial instruments including not only U.S. Treasury securities but also investment-grade corporate debt, investment-grade U.S. state and municipal securities and other investment-grade U.S. federal or state government agency securities.[10]

On its website, Kraken explains that, as a bank, it is required by Wyoming law to maintain reserves equal to 100 percent of deposits that it has received at all times. The website further states that if every client were to demand withdrawals of their deposits at the same moment, Kraken would be able to fulfill each withdrawal immediately. The Kraken website also explains that for this reason deposits will not be required to be insured by the FDIC.[11]

In sum, Kraken will take uninsured, demandable, retail deposits and invest them in "liquid assets," including longer-term instruments like U.S. Treasury securities and corporate debt. This model is inherently unstable under stress. As noted, if Kraken had been in full operation on March 8 this year, it would not only have likely been insolvent by the middle of the month, it also would have almost certainly been subject to a fatal run. Why is this the case?

BOND BASICS

The basic problem is that bond prices fall when interest rates go up, and on some days in March, longer-term interest rates went up by unprecedented amounts. A bond is a promise to provide a stream of payments, called coupons, and a terminal amount called principal or par value. When a bond is first issued, the coupons are set so that the bond sells at par, meaning that the amount borrowed is the amount that has to be repaid, plus interest—the coupons, which for Treasury securities are paid semi-annually—just like a mortgage. (A wealthy person living off a trust fund is sometimes called a coupon-clipper because up until not long ago, the coupons were printed on little tabs that surrounded the bond certificate.)

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[7] This analysis in this post is based on the information currently available to us (as of October 21, 2020). We understand that the WY Division of Banking plans to issue a proposed regulation shortly that may provide further clarity about requirements it intends to impose on SPDIs. We also understand that the Division of Banking is preparing a supervision manual setting forth details on how it will examine SPDIs. Those materials are not currently available.

[8] Wyoming Statute ("W.S.") 13-12-105, https://www.wyoleg.gov/Legislation/2019/hb0074.

[9] W.S. 13-12-105(b). "Commissioner" means the Wyoming state banking commissioner.

[10] Rules of the Wyoming Banking Division, Chapter 20, § 7.

[11] KrakenFx, "Kraken Wins Bank Charter Approval," Sept. 16, 2020, https://blog.kraken.com/post/6241/kraken-wyoming-first-digital-asset-bank/. We understand Kraken Financial takes the position that it is eligible to accept insured deposits; however, it has not applied for nor received approval from the FDIC to do so. It is unclear whether Kraken's business model could withstand the requirements that generally would come along with FDIC insurance (e.g., federal standards for capital, liquidity and other prudential requirements for Kraken Financial and Federal Reserve supervision and regulation under the Bank Holding Company Act of Kraken's parent, Payward Inc., and its affiliates, both foreign and domestic, as well as any controlling corporate shareholders).

So if the 10-year Treasury rate is currently 2.2 percent, a new 10-year Treasury note[12] sold today for $10,000 is a promise to pay $10,000 exactly 10 years from now ("principal" or "par amount") and $110 each half year ("interest" or "coupons").

If the interest rate goes up, the market value of an existing bond goes down. In the above example, if interest rates go up to 2.4 percent, then a new bond issued for $10,000 would pay $120 twice a year for 10 years and $10,000 in 10 years. Clearly, an investor would not be willing to pay $10,000 for the old bond that only provides $110 semiannually.

The change in price equals the "duration" of the bond times the change in interest rates.[13] The duration of a 10-year note with a coupon-yield of 2.2 percent is roughly 9. In the example, interest rates went up 40 basis points (or 0.4 percentage points), so the price went down 9 x 40 bp = 360 bp or 3.6 percent. The original bond is now worth $9,640.

Now apply this logic to Kraken Financial's "deposits." Suppose a depositor gives Kraken Financial $10,000, and Kraken Financial uses the funds to add $10,000 to its "reserves" by buying a $10,000 10-year Treasury note when the 10-year interest rate is 2.2 percent. Kraken Financial promises to give its depositor back $10,000 on demand. At some future time, when interest rates have risen to 2.4 percent, the depositor goes back to Kraken Financial and asks for his $10,000 back. But Kraken Financial doesn't have $10,000, it only has $9,640, so Kraken Financial defaults. This is obviously a highly simplified example, but we use it here to illustrate a basic point about how the value of Treasury securities can go up and down.

In the case of longer-term corporate bonds, the risk of capital loss is even greater. Not only are the bonds subject to interest rate risk, they also experience capital losses when the credit risk premium demanded by investors to compensate for the possibility the corporation defaults goes up. And, of course, the corporation could default, resulting in a loss of principal on the investment. In fact, while much seems to be made of the fact that Kraken and similar "banks" don't make loans, a variable-rate or a secured loan to a corporation is safer than a fixed-rate bond of equal maturity sold by the same corporation.

Capital is generally what stands between a bank and insolvency resulting from losses on its investments. The federal banking agencies have long subjected U.S. banks to capital requirements, and they have spent the better part of the decade since the Great Financial Crisis raising and strengthening those capital requirements. All FDIC-insured banks, regardless of whether the bank has a federal or state charter, are subject to those capital requirements.[14] Kraken is different. Because it is not an insured bank, it is subject only to capital regulation by the state of Wyoming's Division of Banking.

Going back to the above example, if Kraken Financial had capital equal to 4 percent of assets, say, it would not default because the deposits would be less than the reserves by 4 percent.

Moreover, because Kraken Financial customers know what investments Kraken Financial is allowed to make with their deposits, those customers will have a strong incentive if interest rates rise to withdraw their deposits and do so quickly so that they get out first, pushing the losses on the depositors behind them. In other words, there

[12] Treasury securities with initial maturities between two and 10 years are coupon securities and are called "notes" for reasons we do not know. Longer than 10 years, they are called "bonds." One-year and shorter initial maturities, they are called "bills." Bills are discount securities, which are structured differently.

[13] "Duration" is the weighted-average maturity of the bond.

[14] Parent companies of FDIC-insured banks are also subject to federal bank capital regulation, with some exceptions. Industrial loan companies (ILCs), for example, can have FDIC insurance but their parent companies are not subject to capital requirements, an outcome resulting from the "ILC loophole" in the BHC Act.

would be a run on Kraken Financial, similar to the March 2020 (and 2009) run on prime money market funds, which also backed deposit-like obligations with a pool of high-quality assets.

AND A LITTLE MORAL HAZARD

Every day it operates, Kraken Financial will have a subtle but unrelenting incentive to shift its reserves toward slightly riskier assets – Treasury securities with longer terms, corporates versus Treasuries, BBB versus A rated corporates, etc. Every day there is not a run, such shifts will seem like a good idea – profits will go up and there will be no apparent need to keep all the reserves in deposits at the Federal Reserve. That is why banks generally are supervised, must hold highly liquid assets, have deposit insurance, have a lender of last resort and have capital requirements, among other requirements.

It is worth noting that in the example above, a lender of last resort (LOLR) does not solve the problem. Kraken is insolvent (negative capital), so the LOLR would not lend. Even if it would, Kraken has insufficient collateral to back a LOLR loan large enough to cover the deposit outflow.[15] If the LOLR lent against collateral to cover only some of the outflow, that would accelerate the run because the LOLR would be concentrating the losses on the remaining depositors.

CAPITAL LITE

By now you might be wondering, what are Kraken's capital requirements? Under the law of Wyoming, the answer is basically a minimum of $5 million and three years of estimated operating expenses.[16] By regulation, the amount of initial capital of a SPDI is pretty discretionary, "commensurate with the risk profile and proposed activities of the institution, as determined by the Commissioner."[17]

There is also Wyoming SPDI Capital Requirement Guidance (the "capital guidance") that provides a little bit more detail on potential capital requirements for a SPDI like Kraken. This capital guidance says that the Wyoming Banking Division "focuses heavily on the business plan and proposed activities of an SPDI in determining an overall capital requirement" and that "the required initial capital will vary from institution to institution" as a result. The capital guidance continues: "After consultations with industry and other regulators, as well as an analysis of potential business models, the Division anticipates that a prospective SPDI should consider 1.25–1.75% of proposed assets under management/assets under custody (off-balance sheet assets) or $10,000,000—whichever is greater—as an appropriate minimum requirement for chartering. Again, the Division will assess the initial requirement of each institution on a case-by-case basis, after consulting with the applicant."[18] What does all this mean in practice for actual amounts of capital? It's a little unclear what is actually required. Press reports, for example, indicate that the Wyoming Division of Banking expects applicants like Kraken to raise between $20 million and $30 million.[19]

It's also not clear what level of capital requirements these amounts translate to as a percentage of assets. By way of comparison, for a bank supervised by a federal banking agency, basic minimum capital requirements include a 7 percent common equity tier 1 (CET 1) ratio (where the denominator is risk-weighted assets) and 4 percent leverage ratio (where the denominator is total assets on a non-risk-weighted basis).[20] Furthermore, a "normal" bank has

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[15] See, e.g., 12 U.S.C. 343.
[16] W.S. § 13-12-110.
[17] Rules of the Wyoming Banking Division, Chapter 20, § 2.
[18] Wyoming Division of Banking, Special Purpose Depository Institutions: Capital Requirement Guidance, https://docs.google.com/viewer?a=v&pid=sites&srcid=d3lvLmdvdnxiYW5raW5nfGd4OjU0N2ZmZGRjZmY1MmUwNGU.
[19] Nathan DiCamillo, "Kraken Becomes First Crypto Exchange to Charter a US Bank," Coindesk.com, Sept. 16, 2020 https://www.coindesk.com/kraken-crypto-exchange-secures-bank-charter-under-wyoming-law.
[20] See, e.g., 12 CFR 217.10-11. The 7 percent CET 1 ratio includes a capital conservation buffer of 2.5 percent on top of a 4.5 percent CET 1 minimum.

other key protections such as deposit insurance and a LOLR. Therefore, an important point is that a "bank" without deposit insurance and LOLR likely should have significantly more capital than one with these basic protections.

For companies like Kraken, capital requirements in Wyoming law and regulation generally are expressed as amounts in dollars, and the capital in terms of percent of assets depends on how fast the asset side of their balance sheet grows. As noted, the capital guidance from the Wyoming Banking Division recommends capital equal to 1.25 to 1.75 percent of proposed assets under management/ assets under custody (off-balance sheet assets) for SPDIs. Kraken Financial's three-year financial projections submitted with its application are not publicly available, so it is difficult to predict how much capital Kraken will have relative to either its on-balance sheet or off-balance sheet assets.

Regardless, going back to March 2020 and assuming baseline capital of 1.5 percent of assets, if Kraken had held 75 percent of reserves as deposits at the Fed and only 25 percent in 10-year Treasuries, its capital would have been reduced to zero in nine days in March. If Kraken had invested 25 percent in 30-year Treasuries or in long-term corporate debt, its capital would have been reduced to zero in one day.

NEXT STEPS

Next up for Kraken is applying for a master account with the Federal Reserve.[21] Kraken has stated that it will have access to the Federal Reserve's payment system as a result of its Wyoming SPDI charter. Kraken Financial CEO David Kinitsky recently stated: "We are going to have direct access to the federal payment system and be able to more seamlessly integrate funding and withdrawal mechanisms and payment mechanisms into our products."[22]

The buck stops with the Federal Reserve. Interestingly, Kraken sounds similar to a recently proposed bank whose business model worried the Federal Reserve enough that it proposed not paying the bank and similar banks the same amount of interest on their deposits at the Federal Reserve as other banks. In an advance notice of proposed rulemaking (ANPR) the Fed explained:

> Some financial firms recently have sought to establish special state charters for depository institutions with narrowly focused business models that involve taking deposits from institutional investors and investing all or substantially all of the proceeds in balances at Reserve Banks. These narrowly focused depository institutions would not be subject to federal prudential regulation and would not be subject to the same set of capital and other prudential requirements as other federally regulated banks.…these narrowly focused depository institutions (Pass-Through Investment Entities or PTIEs) could theoretically attract a very large quantity of deposits from institutional investors by paying a rate that is nearly identical to the IOER ["Interest on Excess Reserves"] rate. In effect, these PTIEs would pass through the interest obtained at the IOER rate from a Reserve Bank to their depositors, less a small spread.[23]

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[21] See Robert Stevens, "Kraken Will Be First US Crypto Bank. Here's Why It Matters," Decrypt, Sept. 16., 2020, https://decrypt.co/42077/kraken-first-us-crypto-bank-heres-why-matters. We are aware of only one Reserve Bank that has developed detailed criteria for evaluating applications that may be received from non-traditional entities like Kraken. The Federal Reserve Bank of New York ("FRBNY") has set forth criteria for evaluating applications in its Account and Financial Institutions Handbook. See Federal Reserve Bank of New York, Account and Financial Services Handbook (Feb. 25, 2020), available at: https://www.frbservices.org/assets/forms/district-information/0220-frbny-financial-services-handbook.pdf.

[22] The Daily Hodl, "Here's What Kraken Plans to Do With Its New Crypto Banking License" (Sept. 21, 2020), available at: https://dailyhodl.com/2020/09/21/heres-what-kraken-plans-to-do-with-its-new-crypto-banking-license/.

[23] 84 Fed. Reg. 8829 (March 12, 2019).

The Federal Reserve went on to explain how these institutions could complicate monetary policy, have broad, negative effects on financial intermediation and present concerns for financial stability. As a result, the ANPR requests comment on a lower rate of interest for PTIEs.[24]

We hope the Federal Reserve gives the risks of Kraken's business model serious and thoughtful consideration, particularly the level of required capital. One possible solution would be for the Federal Reserve to use the capital adequacy assessment it uses for membership as a starting place to evaluate Kraken.[25] The Federal Reserve explains that "a de novo should maintain capital ratios commensurate with its risk profile and, generally, well in excess of regulatory minimums."[26] Among other requirements, de novo banks are generally required to maintain, as a condition of membership, a tier 1 leverage ratio of at least 8 percent for the first three years of their existence.[27] Again, these are traditional banks that have the protections of LOLR and deposit insurance, which means that the Federal Reserve likely should require even higher levels of capital for a de novo "bank" without such protections.

Moreover, as we describe, the Wyoming Banking Division has a lot of discretion with respect to exactly how much capital it will require of SPDIs as the institutions grow. It is laudable that the Banking Division has developed a legal framework to encourage innovative cryptocurrency businesses like Kraken to come to the state as part of the regulated banking sector, rather than where they otherwise would be, outside of an established regulatory framework. We hope that the state works together with federal regulators like the Federal Reserve to impose robust standards on Kraken and similar businesses, in recognition of their potential risks.

Disclaimer: The views expressed do not necessarily reflect those of the Bank Policy Institute's member banks, and are not intended to be, and should not be construed as, legal advice of any kind.

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[24] See 84 Fed. Reg. 8830-31.
[25] 12 CFR 208.4.
[26] See SR 20-16: Supervision of De Novo State Member Banks (June 24, 2020), https://www.federalreserve.gov/supervisionreg/srletters/SR2016.htm.
[27] See id. (citing 12 CFR 217.10(a) as a reference).