Banking, In and Out of the Shadows

BY JOHN MULLIN

Shadow banking encompasses a broad range of activities outside the traditional banking sector. Some of these activities are exotic and involve the creation of complicated special-purpose vehicles. But the bulk of the shadow banking sector is composed of more commonplace entities such as mutual funds and securities broker-dealers.

These institutions operate outside the safety net available to traditional banks, which includes deposit insurance and access to the Fed's discount window. In the absence of this protection, some shadow banks can be susceptible to runs — which occur when a bank's creditors attempt to withdraw more money than the bank can raise at that time by selling its assets. Indeed, the darkest hours of the financial crisis were marked by runs on Lehman Brothers (a broker-dealer) and the Reserve Primary Fund (a money market mutual fund) in September 2008.

The Financial Stability Board — an international body tasked with monitoring overall financial system risk — estimated that almost $52 trillion in assets were held globally at the end of 2017 by nontraditional banks "involved in credit intermediation activities that may pose bank-like financial stability risks." To put that number in perspective, it's well over half the amount of world GDP, which was roughly $80 trillion in the same year.

While shadow banking is a concern in and of itself, it also raises important issues for the regulation of traditional banks, according to a study by Borys Grochulski of the Richmond Fed along with Yuzhe Zhang of Texas A&M University. Their research, published in the journal *Economic Theory*, suggests that the ability of market participants to shift assets from regulated banks into shadow banks can have important implications for bank liquidity regulation.

Grochulski, who joined the Richmond Fed in 2005, has done extensive research on public finance and optimal contracts. Some of the recent applications of his work have included studies of personal bankruptcy regulation and Social Security. His interest in optimal banking regulation was piqued by the global financial crisis, which broadened the recognition that under-regulated financial markets are potentially unstable.

"This gives rise to a natural impetus to regulation," says Grochulski. "But one limit to regulation is that it has not been achieved in a globally unified framework, and there is competition among jurisdictions for regulating more lightly. Take the Cayman Islands, for example. Our article explores the limits placed on U.S. regulators by the lack of international regulatory coordination."

The article builds on the Diamond-Dybvig maturity-mismatch model — a framework that is a long-standing staple among economists for analyzing bank runs and liquidity regulation. A key feature of the framework is that banks desire the liquidity associated with short-term investments but also want the higher returns associated with longer-term, relatively illiquid investments. In the model's initial period, a bank must choose how to allocate its portfolio between short-term and long-term investments with the knowledge that, in a later period, it may be hit with a "liquidity shock" that forces it to sell its longer-term investments in a secondary securities market. Another key feature of the model is a lack of full transparency: Only a bank itself knows whether it has been hit by a liquidity shock, and secondary-market trading is anonymous.

In Grochulski's model economy, banks' ability to trade anonymously in the secondary market creates a "pecuniary externality." An individual bank does not bear the cost of the effect of its trading on other banks. The externality drives a wedge between the market (or laissez faire) equilibrium and the socially optimal outcome. This inefficiency gives rise to a role for regulation.

In the absence of shadow banking, one optimal liquidity regulation consists of a tax on the illiquid asset and a subsidy on the liquid asset. (The latter can be thought of as interest on bank reserves.) This tax-subsidy combination tilts the asset allocation trade-off faced by banks in favor of more liquid assets. That, in turn, decreases the supply of illiquid assets in the secondary market and thereby increases their price.

Grochulski models shadow banking as an arbitrage-seeking activity. The shadow banking sector gives banks an alternative to the regulated banking sector. By shifting to the shadow sector, a bank escapes regulation but loses the benefits associated with the government safety net. In this setting, a regulated bank's incentive to shift activity to the shadow sector increases steeply with the secondary-market price of the illiquid asset. As a consequence, optimal liquidity policy changes with the introduction of shadow banking. In particular, Grochulski and Zhang found, the optimal tax and subsidy rates need to be reduced in order to reduce the secondary-market price of liquid assets and thereby limit the incentive for regulated banks to shift activity to the shadow banking sector.

For the researchers, this finding strongly suggests that bank regulators need to take shadow banking into account when designing optimal liquidity policy. In their words, "the option to move assets from regulated banks into shadow banks can potentially render bank liquidity regulations ineffective." **EF**