Executive Summary

The dissertation investigates the scarcity effects of the Fed's quantitative easing. Central bank asset purchases under quantitative easing programs systematically take out government debt securities out of the market. Those securities play a very important role in the modern banking system, as they are the highest-quality collateral that is available. A shortage of financial collateral usually concerns only specific government securities and therefore can be observable in the bilateral repo market where "special" repos trade. However, it is also possible that a whole class of government bonds is becoming scarce due to the central bank purchases. In this case, not only special collateral, but also general collateral repo rates will be affected.

This research uses the Treasury General Collateral Financing (GCF) repo rate and fundamental factors of US Treasury markets to determine whether the Fed's QE has increased scarcity of Treasury collateral, as a class of collateral securities rather than specific bilateral repo securities. The results suggest that the scarcity channel of quantitative easing exist, but affects general repo rates in much smaller extent than special repo rates, which was expected. An increase of $1 trillion in Treasury securities on the Fed balance sheet is associated with a 40-46 basis point decrease in the Treasury GCF repo rate. However, previously studied scarcity effects of QE on Treasury special repo rates are about 5 times larger.

A shortage of Treasury collateral, when present, can be noticed also in other metrics. 2021 was a year of a substantial shortage of liquid Treasury bill collateral, when the effects of fiscal stimulus were winding down, but the Fed was still very active in the market. Evidence that suggest such phenomenon were severely depressed T-bill, and repo rates compared to the interest that could be gained by allocating money on the Fed's balance sheet.

Last but not least, money market collateral, and its scarcity, is important not only from the perspective of properly functioning markets for collateral and liquidity, but also the shadow banking credit creation channel and so the real economy. Increased collateral scarcity most likely incentives dealers to increase leverage by raising re-use of collateral. Higher leverage increases systemic credit risk, but limited re-use may impede facilitation of credit by the shadow banking system and thus negatively affect economic growth when both collateral, and its re-use rate, is being suppressed.