EXTENDED ABSTRACT

The COVID-19 pandemic brought not only a colossal public health crisis but also an equally devastating economic crisis, that we are only now begging to understand its full extent. Unlike in the 2008 economic crisis, central banks were much quicker to act this time around to supress the economic downturn. Such measures have ranged from lowering interest rates, to emergency credit lines, to new Quantitative Easing (QE) programmes. For instance, the European Central Bank's (ECB) envelope for the pandemic emergency purchase programme (PEPP) is (as of September 2020) €1,350 billion, among a series of other measures to ease the effects of the pandemic. Similarly, the Bank of England announced a new QE program of £300 billion and the FED declared – after lowering their interest rates to 0 – it would buy $80 billion a month in Treasuries and $40 billion in residential and commercial mortgage-backed securities until further notice.

In the short run, these measures have a huge impact on the public debt of the countries and the balance sheet of their respective central banks. For instance, the Office for National Statistics announced in July 2020 that the UK's public debt reached a record £2,004.0 billion, as a result of the expansionary fiscal policy – £227.6 billion more than at the same point last year – which translates to around 100.5% of its GDP. On the other hand, a quick analysis of the FED's balance sheet shows that their total assets skyrocketed from roughly $4 trillion in the beginning of 2020 to approximately $7 trillion, as of September 2020. An increase of 75%, as a result of the large-scale purchase programmes.

The goal of QE is to lower the interest rates on government bonds. To do so, CBs carry out large-scale purchases of these titles which increases their prices in the secondary market and thus decrease their internal interest rates. This allows the government to issue new debt titles at lower interest rates, which in turn stimulates public spending.

The BoE's Monetary Policy Committee emphasised the role of the so-called *portfolio balance channel* as a key element in the transmission mechanism of the asset purchases to the rest of the economy. According to this mechanism, the purchase of treasuries by the central bank increases liquidity, leading investors to buy riskier assets, pushing their prices up. On the other hand, the lower interest rates reduce borrowing costs for households and companies, also stimulating expenditure. Given that Pension Funds (PF) and insurance companies hold a significant amount of debt securities issued in the EU, the question of how QE affected their investment portfolios arises.

To assess how QE has affected the investment portfolios of PF and if the portfolio balance channel holds true for the context of the Eurozone, we used a log-log econometric model resorting to panel data from the eurozone countries across a time period of 18 years (from 2000 to 2018).

Our research shows that there is statistical evidence that supports the hypothesis of the portfolio balance channel for PF in the context of the Eurozone.

In chapter 2 we consider the theorical framework of the topic at hand, its relevance and the approach followed to test the hypothesis. In chapter 3 we discuss the data used and the econometric model. In chapter 4 we present the results and debate their reasonableness and implications. Finally, in chapter 5, we conclude the dissertation by summarizing the results.

The LZB has been a problem faced by many developed countries over the past decade. To mitigate the negative effects of the Great Recession and more recently the covid-19 pandemic, CB had to resort to unconventional monetary policy, namely QE. One of the most important mechanisms of QE is the portfolio balance channel that occurs predominantly in non-banking institutions such as PF and insurance companies. The literature suggests that this effect has occurred in the UK but was absent in Japan. To understand if this hypothesis holds true for the

context of the Eurozone, we decided to use an econometric GLS regression based on panel data for a group of 16 of the 19 countries that are part of this group, over a period of 18 years.

Our results are consistent with the hypothesis of the portfolio balance channel for PFs within the Eurozone. When analysing the entire population, PSPP is statistically significant for most cases, and with an expected sign. When analysing the subset of countries where pension funds hold a bigger amount of investment assets, we do not find statistical significance for PSPP except for the regression in respect of government bonds. Here we can see that the effect is negative, which is in line with the results presented by Joyce, Liu and Tonks (2017) and supports the portfolio balance channel.

Our results suggest that, on average, all other things the same, an increase of 1% in PSPP leads to a 0.19% increase in the stock of corporate bonds held by PF. This is once again predicted by the model, since pension funds with the added liquidity, are expected to buy riskier assets such as corporate bonds.

For the case of equity assets, our results suggest a negative effect as a result of the asset purchases. Despite not being predicted by the model, these numbers might suggest a relocation to other forms of assets, such as corporate bonds. There's statistical evidence that suggests an increase in the stock of cash and deposits as a result of the asset purchases, which translates to an increase in liquidity, an important mechanism as explained by Benford et al (2009).

In this dissertation we have studied the hypothesis of portfolio allocation for the case of pension funds. However, other non-banking institutions such as insurance companies and hedge funds may also play a relevant role in the dissemination of the asset purchases throughout the economy, so future research on these institutions could be relevant to better understand such mechanism.