



FNALITY GLOBAL PAYMENTS

PAYMENT SYSTEMS
AND MONETARY
POLICY

THE FNALITY TEAM



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INTRODUCTION

For a long time, large value payment systems have been viewed as being important for financial stability ([CPSS \(1997\)](#)). But so far, they have not been considered to have an impact on monetary policy and its implementation. However, the advent of new technologies like distributed ledger technology (DLT) has led to a marked surge in attention by the central banking community to these payment and settlement systems. Central bank payments experts have hinted in a recent report that the design of wholesale digital token arrangements should give “due consideration” to monetary policy implications ([CPMI \(2019\)](#)).

Finality Global Payments (FnGP) is a network of next generation wholesale payment systems (each referred to as a Finality Payment System, or “FnPS”) that have been categorised by some as *wholesale digital token arrangements* as they use DLT for processing and record keeping. This note investigates whether FnGP could have monetary policy implications.

Obviously, it seems implausible that the technology underpinning a payment system should have a potential impact on monetary policy. Instead, any such impact would have to be rooted in the functionality and features of a payment system. In fact, in terms of its functionality FnGP is very similar, if not identical to already existing wholesale payment systems.¹

FnGP consists of five interlinked payment systems for the world’s largest currencies (i.e. CAD, EUR, GBP, JPY and USD) settling payments in each of the five currencies as well as FX transactions in real-time and on a gross basis. Its settlement balances are “pre-funded” directly through the central bank operated RTGS systems, implying that the settlement asset carries negligible credit risk since it is at all times 100% backed with reserve balances held at the central bank of issue. While [Fabio Panetta \(2020\)](#) refers to this type of backing as “outsourcing of the provision of central bank money”, several systems already rely on this arrangement today, for instance, Euro1, RT1 and SECB² for euros as well as CHIPS and RTP for the US dollar. The only difference in the case of FnGP is that it plans to rely on a distributed instead of a centralised ledger for processing and record keeping. It also envisages a somewhat larger circle of direct participants which would include legal entities of globally active banks as well as central counterparties (“CCPs”).



A STYLISED MONETARY POLICY FRAMEWORK

Most modern central banks have a dual mandate. They are tasked to achieve very low inflation (the “inflation target”) *and* low unemployment or high economic growth (the “output target”). In order to achieve their mandates, central banks usually set a target for a short-term interest rate. This can be a band for interbank rates, as in the case of the Federal Reserve (the “federal funds rate”), or an interest rate for refinancing operations between the central bank and eligible financial market participants, as in the case of the European Central Bank and the Bank of England.

While every central bank has its own and unique monetary policy framework, three common tools can be identified to manage the target interest rates.

First, the central bank sets an interest rate for overnight borrowing at very short notice (emergency lending rate or discount rate). Such loans can be tapped by market participants if they face an unforeseen liquidity shortfall at the end of a settlement day. The interest rate for such loans is higher than the target rate, indicating a penalty markup. Due to arbitrage, interbank overnight rates generally don’t move above the emergency lending rate.

Second, the central bank sets an interest rate for overnight deposits that eligible financial market participants (banks and CCPs) hold with the central bank (“deposit rate”³). The deposit rate is lower than the target rate. Again, arbitrage implies that the deposit rate provides a floor to interbank overnight rates.

Third, central banks influence the supply of reserves through credit operations (repos) and asset purchases. Since the Global Financial Crisis of 2008-2010, targeted asset purchases have become a tool used often by several central banks.

The combination of these three tools ensures that the central bank is always in a position keep the targeted interest rates where it wants them to be. More than two decades ago, [Michael Woodford](#) showed that in frictionless markets the central bank can manage short-term interest rates even if demand for central bank money is zero. By extension, pre-funded large value payment systems won’t have an impact on this ability.

A close-up photograph of several stacks of coins, including a prominent US quarter coin, resting on a wooden surface. The lighting is warm, creating soft shadows and highlights on the metallic surfaces of the coins.

THE IMPORTANCE OF REFINANCING MARKETS

The question, however, arises as to whether new pre-funded wholesale payment systems such as the FnPS could lead to more *intraday* volatility in short-term market rates. It is conceivable that, on average, those rates would still fluctuate within the band set by the central bank, but may become more volatile during the day. Such concerns were raised, for instance, by the Federal Reserve with regard to the possible remuneration of excess reserves held by narrow banks or Pass-Through Investment Entities (PTIE)). The Federal Reserve argues that, “Depending on the constellation of interest rates, PTIEs could be an attractive investment for lenders in short-term funding markets such as the federal funds market. If the current lenders in the federal funds market shifted much of their overnight investment to deposits at PTIEs, the federal funds rate could become volatile” ([Federal Reserve \(2019\)](#)).

It should be noted that, in general, it would be relatively easy for a central bank to counteract undesired intraday volatility of short-term interest rates. All the central bank would have to do is increase reserves (through repos) or decrease reserves (through reverse repos) depending on the direction of the interest rate movements.

In order to analyse whether the existence of an FnPS could at any point lead to repercussions in the money market, it is helpful to first differentiate three types of wholesale market participants.

The first group includes financial market participants that have a deposit/reserve account at the central bank. Not all of them may have access to the same range of central bank services. While some may have just a deposit account (for instance, CCPs), others are also counterparties in monetary policy operations and have access to intraday credit and the emergency liquidity/discount facility. The latter are active in clearing and settlement and typically provide correspondent banking services.

The second group has access to a central bank account, but they outsource their clearing and settlement business to correspondent banks. Members of this group are typically branches of foreign banks that are headquartered in another country, but with sizeable transaction business in the foreign currency.

The third group doesn't have access to a central bank account, and its members use correspondent banks for clearing and settlement. This group may include regulated domestic financial institutions like broker-dealers as well as foreign banks that are incorporated abroad and lack a local branch.

In today's interconnected financial world, clearing and settlement relies heavily on a cascade of intraday credits. Central banks extend intraday credit, typically against collateral, to eligible counterparties such as correspondent banks. In turn, correspondent banks extend intraday credit to their clients in order to fund their payment obligations.

Towards the end of the settlement day, all financial market participants need to have a positive cash balance on their accounts, be it with the central bank, with a correspondent bank or in a payment system. A bank that cannot repay the intraday credit from the central bank has to tap the emergency lending or discount facility from the central bank; and the client with a negative balance with its correspondent has to borrow funds from the correspondent or from another financial market participant.

Functioning money markets imply that funds are reallocated swiftly between those financial market participants that have excess liquidity and those that do not. The reason these markets typically work efficiently is based simply on the fact that outflows and inflows are always equal; money never "leaves" the financial system.

Of course, lending in the interbank market is risky and demand and supply can change very rapidly. If changes to the environment are drastic, the international financial system can quickly be brought to the brink of collapse as it happened during the Global Financial Crisis ([CGFS \(2010\)](#)). But even in absence of a global crisis, central banks often have to adjust the supply of reserves or change the institutional arrangements to keep money market rates within the desired band. This happened, for instance, in the United States in September 2019 when conditions in money market unexpectedly became highly volatile ([Williams \(2019\)](#)).

FnPS participants with a reserve account at the local central bank (Group 1) typically hold substantial positive reserve balances overnight with the central bank, even if interbank overnight rates are higher than the deposit rate at the central bank. Risk considerations as well as regulatory parameters such as capital, liquidity and minimum reserve requirements lead to a bias in favour of holding cash at the central bank. Of course, the



lending behaviour of Group 1 FnPS participants may change suddenly if risks or supply of reserves change. But the existence of a pre-funded payment system like the FnPS won't have an impact on their short-term lending or borrowing behaviour since they always have the option of accessing the central bank facilities.

Financial institutions in Group 2 (branches of foreign banks) typically don't hold positive overnight balances with their correspondents. At the end of a value day, the local branch transfers the long balances of the various legal entities of the same group (parent company and branches located elsewhere) with correspondents to its account with the local central bank. The legal entities with short balances will borrow overnight in the money market or receive a transfer from another legal entity of the same group. As in the case of the Group 1 participants, there is never an incentive to move additional funds from the central bank account to the FnPS account in times of uncertainty.

Finally, financial institutions with no access to the local central bank (Group 3) have to rely on correspondents for making and receiving payments in a foreign currency. Whether their net outflows is positive or negative on a given day is typically a random and not structural outcome. In normal times, these institutions aim at holding essentially no funds overnight with correspondents and would most likely place a possible long position in the overnight repo market. They would also aim at holding hold some balances in the local FnPS in order to be able to settle transactions while the local RTGS system is closed.

In times of uncertainty or stress nothing changes for the FnPS participants with short balances vis-à-vis a correspondent. They still have to borrow funds from the market before the end of the value day. As market borrowing may not be available, the large central banks have established FX swap lines among themselves in order to increase access to foreign currency for the banks in their jurisdiction ([BIS \(2020\)](#)). However, the Group 3 participants who happen to have long balances may decide not to lend them to the repo market, but to increase their settlement balances in the FnPS instead.

We don't expect such potential shifts in lending behaviour to have a significant impact on the volatility of money market rates. Group 3 FnPS participants (i.e. those without an account at the local central bank) won't be large players in these money markets. Also, they will not be



systematically or structurally long at the end of the day. Still, if a negative impact were to materialise, an obvious, straightforward mitigant would be end of day limits on the settlement balances of Group 3 participants.

Finally, it is worth noting that a potential reduction of deposits with correspondents or money market lending of Group 3 participants won't have an influence on the capacity of the local banking to provide credit to the economy. According to the national implementations of one of the international liquidity standard ("[Liquidity Coverage Ratio](#)") short-term wholesale deposits need to be 100% backed with High Quality Liquid Assets (HQLA).





CONCLUSION

Pre-funded large value payment systems like FnPS are novel in terms of the technology that underpins them, but in terms of their functionality and their potential impact on monetary policy they are to be compared with “conventional”, already existing systems. Against this background, it is not surprising that essentially no implications of pre-funded wholesale payment systems like those within FnGP on monetary policy can be found. Unexpected hiccups in money markets will continue to occur, for instance, when large market participants change their lending behaviour and prefer to increase their holdings of safe central bank reserves. But such erratic changes are unrelated to the payment infrastructure and therefore would not be exacerbated by new payment systems such as the FnPS.

WOULD YOU LIKE TO KNOW MORE?

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FOOTNOTES

1 - A full description of the mechanics of FnGP can be found [here](#).

2 - The SECB (Swiss Euro Clearing Bank) is a narrow bank that operates a real-time gross settlement system for financial institutions outside of the euro area. As a direct participant in Target2 it ensures that its balances are always fully covered by reserves held at the Bundesbank.

3 - The deposit rate may be applied to the entire amount of deposits or may exclude minimum reserves or other another threshold amount.