

Finance for the Future

How the central bank reserve accounts work – an example

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I have already written a note about what the central bank reserve accounts that commercial banks maintain with the Bank of England are, and how they are funded. However, that note could not answer every question that comes up with regards to these accounts, and in particular how they operate on a day to day basis.

I understand that there are real conceptual issues in understanding how it is that the base money that is created day in and day out by the Bank of England to let the government spend in fulfilment of its policy decisions within the UK economy can, nonetheless, be wholly ring fenced within the central bank reserve accounts maintained by the commercial banks with the Bank of England. Put another way, the question people struggle with is how the £900 billion or so in the central bank reserve accounts of the commercial banks at the Bank of England never transfers over from those accounts into the commercial banking sector, and similarly, why commercial bank money never transfers into the central bank reserve accounts.

The conceptual problem in understanding this does, I think, result from a lingering belief that most people have somewhere deep down inside them that there really is something physical and tangible that they might actually touch which represents money. That, however, is completely untrue. Even notes and coins are simply physical representations of an intangible promise made by the government to pay whomsoever might hold them as property at any particular point in time. They have no implicit value in themselves and yet it seems very likely that people do think that that there is a movement of some form of

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tangible property between bank accounts when payments are made and received between accounts.

This note seeks to explain why that is not the case and to demonstrate how government spending can both create central bank reserve account balances and simultaneously increase commercial money supply even though the base money and commercial bank created money remain quite separate, one from the other.

To explain this assume that the following quite simple series of transactions takes place:

- The government wishes to pay Freda Davis her old age pension of £1,000 for a month. Freda banks with the Nationwide Building Society, which is a bank for these purposes;
- When she gets her pension Freda transfers £400 of that sum to her husband, Thomas, who banks with Lloyds;
- Freda then discovers that tax should have been deducted from the pension payment made to her and as a result makes payment to HM Revenue and Customs of the £200 tax liability that she owes on the pension that she received.

This seemingly everyday set of transactions gives rise to a great deal of activity behind the scenes. I will try to include reference to only those transactions that are strictly necessary to make clear what is happening apparent. The reality would be more complicated, but explaining why will add little more value.

First of all note that the payment to Freda is the settlement of a debt that the government has created to Freda. They have agreed to pay her each month, and she anticipates them doing so. It is this promise to pay that sets up all the transactions that follow. To record this debt the government debits its cost of old age pensions paid account in its income statement and credits its pensions owing account on its balance sheet. If Freda kept double entry books she would debit her pensions due account on her balance sheet and credit her income statement with the £1,000 pension income. This is step 1.

The next task (step 2) is for the government to settle this liability. To do this the DWP instructs the Bank of England to make a £1,000 payment through the Consolidated Fund to the commercial bank that makes payments on behalf of the Department of Work and Pensions. I will assume that is HSBC. So, the DWP records a reduction in its pension owing account (a debit) and a credit in the records it keeps of its account with the with the Bank of England. Both are for £1,000.

Of course, the Bank of England has to also record that transaction in the Consolidated Fund of which the DWP forms a part, but from its perspective this transaction is a debit – the government owes that sum to it. There has to be a credit to match, and there is: the Bank of England credits the HSBC central bank reserve account. Each sum is £1,000. (Step 3)

To simplify matters here (to save noting a lot of transactions in the bank’s own books to record inter-bank transfers), let us assume that HSBC immediately realises that the payment request it has received attached to the funds placed in its CBRA is not one that it can process – as the sort code on it will make clear. So, it transfers the funds straight on to the Nationwide CBRA in step 4.

Now, albeit indirectly, the Nationwide has £1,000 from the DWP lodged in its CBRA. It has an obligation to pay Freda as a result. This it does with commercial bank money. It accepts the debit in its books from the CBRA – the promise to pay from the government – as the guarantee and backing for its own promise to pay Freda – which it creates by recording the £1,000 owing to her as its liability (a credit) to her. (Step 5).

Freda completes this stage of the transaction in step 6. She credits her pensions due account on her balance sheet and debits her Nationwide account in her books, again for £1,000 in each case.

So, to this point we have these transactions:

Step	Account	Income accounts		Non-bank balance sheets		Balance sheet accounts - CBRA's		Balance sheet accounts – commercial bank money	
		Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
		£	£	£	£	£	£	£	£
1	DWP – Cost of old age pensions	1,000							
1	DWP – pension owing account				1,000				
1	Freda – pension due account			1,000					

1	Freda – income		1,000						
2	DWP – pension owing account			1,000					
2	Consolidated fund account in DWP books				1,000				
3	DWP account at BoE – part of the Consolidated Fund					1,000			
3	HSBC CBRA in BoE books						1,000		
4	HSBC CBRA account in BoE books					1,000			
4	Nationwide CBRA in BoE books						1,000		
5	Nationwide CBRA in Nationwide Books							1,000	
5	Nationwide Freda Nationwide account in their books								1,000
6	Freda pension due account				1,000				
6	Freda Nationwide account			1,000					

To summarise to here, we have these transactions recorded when all transfers and account balances owing are taken out of consideration if they have been matched during this series of entries:

Step	Account	Income accounts		Non-bank balance sheets		Balance sheet accounts - CBRA's		Balance sheet accounts – commercial bank money	
		Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
		£	£	£	£	£	£	£	£
Income accounts									
1	DWP – Cost of old age pensions	1,000							
1	Freda – income		1,000						
Private balance sheets									
2	Consolidated fund account in DWP books				1,000				
6	Freda Nationwide account			1,000					
CBRA Accounts									
3	DWP account at BoE – part of the Consolidated Fund					1,000			
4	Nationwide CBRA in BoE books						1,000		

Bank balance sheets									
5	Nationwide CBRA in Nationwide Books							1,000	
5	Nationwide Freda Nationwide account in their books								1,000

The DWP has paid Freda, and both base and bank money have been made on the way to doing so, without the two in any way cancelling each other out. Note that the double entries match in each pair of columns and especially that there is no leakage into or out of the CBRA's where instead the transactions are matched by those in other records to record the obligations recorded there.

This, though, is not the end of the transactions. Freda now has to pay her husband £400 to be paid into his Lloyds account, and to pay HM Revenue & Customs £200. To continue from where we were then, in step 7 Freda issues an instruction to the Nationwide to pay Tom. She credits her own record of her Nationwide account on her balance sheet and debits her 'gifts to Tom' account to record the spend.

In step 8 the Nationwide deducts funds from Freda's account and records the fact that it now owes this money to Lloyds so that they can pay Tom.

In step 9 The Nationwide pays Lloyds via its CBRA.

In step 10 Lloyds acknowledges the receipt in its CBRA from the Nationwide and as a result records that it now owes Tom £400 by crediting his account.

Tom finally completes this transaction in step 11, recording as a debit the increase in his bank account and crediting his income account with the gift from Freda.

In step 12 Freda acknowledges her tax debt and in step 13 tells the Nationwide to pay it via Barclays, who collect bank payments on behalf of HM Revenue & Customs.

In step 14 the Nationwide deducts £200 from Freda's account with them and acknowledges it now has a debt to Barclays for credit to HMRC.

In step 15 the Nationwide pays Barclays via the central bank reserve accounts.

In step 16 Barclays records the resulting debt from the Nationwide as a debit and that it now owes HMRC as a credit.

Step 17 acknowledges that this debt to HMRC will be paid via the CBRAs by making the necessary adjustments for that in Barclay's account before in step 18 the funds are debited as a charge in Barclays' CBRA and credited to HMRC's CBRA account.

Finally, in step 19 HMRC records its income of £200 and that it now has £200 more in its CBRA. The record is complete.

Step	Account	Income accounts		Non-bank balance sheets		Balance sheet accounts - CBRAs		Balance sheet accounts – commercial bank money	
		Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
		£	£	£	£	£	£	£	£
7	Freda Nationwide account				400				
7	Freda gifts to Tom account	400							
8	Nationwide's Freda account							400	
8	Nationwide's account with Lloyds in its own books								400
9	Nationwide's CBRA – paid to Lloyds in the BoE's books					400			
9	Lloyd's CBRA – receipt from Nationwide						400		

	in BoE's books								
10	Lloyds' CBRA in its own books							400	
10	Lloyds' Tom Account in Lloyds books								400
11	Tom's Lloyds Accounts			400					
11	Tom's Gifts from Freda account		400						
12	Freda's tax payable account	200							
12	Freda's tax due account				200				
13	Freda's tax due account			200					
13	Freda's Nationwide account				200				
14	Nationwide's Freda account							200	
14	Nationwide's Barclays Account								200
15	Nationwide's CBRA at BoE – to pay Barclays					200			
15	Barclay's CBRA at BoE – receipt from Nationwide						200		

16	Barclays's Nationwide account in its own accounts							200	
16	HMRC's account at Barclays								200
17	HMRC's account at Barclays							200	
17	Barclays CBRA in its own books								200
18	Barclays CBRA at the BoE					200			
18	HMRC Consolidated Fund account at the BoE						200		
19	HMRC Consolidated Fund Account in its records			200					
19	HMRC Tax income		200						

Netting all these transactions out we now get:

Step	Account	Income accounts		Non-bank balance sheets		Balance sheet accounts - CBRA's		Balance sheet accounts – commercial bank money	
		Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
		£	£	£	£	£	£	£	£

Income accounts									
1	DWP – Cost of old age pensions	1,000							
1	Freda – income		1,000						
7	Freda – gift to Tom	400							
12	Freda – tax due	200			NB: Freda now has £400 left out of her income				
11	Tom – gift from Freda		400						
19	HMRC tax income account		200						
Private balance sheets									
2	Consolidated fund account in DWP books				1,000				
18	Consolidated fund account – HMRC books			200		The government now records that it has £800 of liability (credit) left in the central bank reserve accounts			
6	Freda Nationwide account			400					
11	Tom – Lloyds account			400					
CBRA Accounts									
3, 19	Consolidated Fund					800			
4, 9, 15	Nationwide CBRA in BoE books						400		
9	Lloyds CBRA						400		
Bank balance sheets									
5,	Nationwide CBRA in							400	

	Nationwide Books								
5,	Freda Nationwide account in Nationwide books								400
	Lloyds' CBRA in its books							400	
	Lloyds' Tom account in Lloyds' books								400

A net £800 of new money has been created via the inflation of the central bank reserve accounts, which is reflected in the balances of the Nationwide and Lloyds even though originally paid to HSBC.

To match there is £800 of new commercial money created by those same banks, with Freda and Tom being the beneficiaries of this.

Of the original £1,000 of new money created £200 has been cancelled by the payment of tax.

That's how the central bank reserve accounts work.