

From Wicksell to Le Bourva to Modern Monetary Theory: a Wicksell connection

Abstract:

In the aftermath of the Great Financial Crisis (GFC) and with a focus on macroeconomic imbalances in the world economy economists have shown renewed interest in the way central banks and financial systems work. The rise of Modern Monetary Theory (MMT) has relied on the examination of balance sheets, which has led to advancements in the understandings of the nuts and bolts of the financial system and of the fundamental role of taxes, reserves and deposits. While the school is associated with Post-Keynesian economics, we make the case that it could just as well be called Post-Wicksellian. The aim is not to argue against or for some label, but to make explicit the Wicksellian connection. This can bring forward old discussions and insights and integrate them into the newer debates.

MMT authors stress endogenous money and the examination of assets and liabilities in balance sheets. In our inquiry, we demonstrate that a *horizontalist* approach was already present in Wicksell (1898) and in the writings of French economist Jacques Le Bourva (1959, 1962). We examine the essential publications of the two authors and compare their view with the insights of MMT. By doing this we hope to show a continuity of monetary thought. MMT should not be seen as an intruder from the outside of monetary theory, but a continuation and expansion of certain ideas that have long been part of the discipline. Identifying issues of disagreement between the three views should help to focus on the issues that are still disputed.

Keywords: central banking, monetary policy, discretionary practices, Wicksell, Modern Monetary Theory, MMT.

JEL classification: E4, E51, E58

1. Introduction

The authors that write under the label of MMT are different from other schools in their focus in balance sheets and what they call „reserve accounting“. This is not exclusive to MMT, which can be considered a Post-Keynesian spin-off. Lavoie (2003) provides a very similar introduction to endogenous money with only minor differences. This methodology is very special as it relies almost exclusively on double entry book-keeping and identities from the national income and products accounts. The behavioral assumptions are minimized and the economy is analyzed with hindsight mostly. Equilibrium exists in the sense of „balance of the balances“, not based on the neoclassical idea of bringing together supply and demand. One of the major issues where this makes a big difference is the clearing of the money market. Wray (2012) stresses that given collateral central banks are lending as much reserves as are desired, and if the interbank market interest rate is not in the target area also actively intervenes in the market. At the level of banks, the endogeneity of credit money or deposits is stressed. Banks lend against collateral, and the deposits are created when the loan contract is signed. No deposits are subtracted from any other balance sheet in the banking system. MMT also holds that fiscal spending is not inflationary *per se*. In the following, we will examine Le Bourva's articles from 1959 and 1962 which have been translated into English and published in 1992 and also Wicksell's „*Interest and Prices*“ from 1898. We have chosen to include Le Bourva because his writings prove that the Wicksellian connection was not lost over the 20th century.

Lavoie (1992) points to Le Bourva as one of the grandfathers of the ‚compensation‘ thesis, which led to a renewed interest in this formerly unknown author. The „compensation thesis“ by Lavoie (1992) claims that inflows of foreign reserves are not translated directly into a rise in domestic reserves, but rather banks compensate their increase in assets in different ways or the central bank engages in non-discretionary operations that compensate the rise in reserves. It is an alternative to the „sterilization thesis“ put forward in most modern textbooks. Le Bourva (1959, 1962) bases his monetary theory on the endogenous creation of money, which lately has received wider attention.¹ With quantitative

easing and lending of last resort being applied around the world, interest in the balance sheet operations of central banks and Treasuries has surged. One might even proclaim a new consensus monetary theory that recognizes the difference between the central bank's monetary circuit and the private (and public) banks depository circuit and the way the central bank uses its instruments to fix the short-term lending rate on the money market and the non-existence of a hard budget constraint for the government, among other things.ⁱⁱ The differentiation of credit (money) and (central bank) money goes all the way back to Wicksell (1898), if not further to the Banking School and its predecessors. Wicksell's research programme consisted of an examination of a *pure cash system* and a *pure giro system*, as he called it, and the understanding of the interconnections between the two. Given the long tradition in the macro family tree of the Wicksellian heritage (Leijonhufvud, 1981), the article by Le Bourva contributed in this respect by focusing on central bank behaviour in an open economy context. This is a topic that Wicksell (1898) did not cover. Our intention is to shed light on the theoretical background in selected writings of Wicksell and Le Bourva in order to prove a Wicksellian connection to MMT. Such exegesis can be enlightening for contemporary discussions of monetary theory in the context of the GFC, quantitative easing (QE) and the euro zone. Mainstream theory like the New Neoclassical Synthesis based on Woodford (2003) pretends to be following Wicksell – the book by Woodford is named *Interest and Prices* – but as Boianovsky and Trautwein (2006) as well as Tamborini (2006) show, Woodford's claim is rather weak.ⁱⁱⁱ

In this article we review the book published by Wicksell (1898), compare his ideas with those of the articles by Le Bourva (1959, 1962) and with those of MMT, as exemplified by the Primer published by Wray (2012).^{iv} Major ideas like the *horizontalist* approach, the theoretical ability of banks to create credit money without limit or the importance of the demand for money have played a central role in monetary theory before the rise of MMT. While these two strands have largely been forgotten, we think that bringing forward old discussions and insights and integrating them into the newer debates should be a fruitful endeavour. We proceed with our comparison topic by topic, starting with methodology and the research project, followed by origin and value of money, central banks and the

money market, banks and banking, the monetary circuit and deficit spending by the government. While this choice of topics is not exhaustive, it should cover enough of the approaches to form a judgment regarding their relationship. We conclude by pointing out what exactly the Wicksellian connection to MMT consists of and what gains can be expected from making it explicit.

2. Methodology and the research project

Knut Wicksell published his ‘Geldzins und Güterpreise’ originally in 1898 in German, with an English translation under the title ‘Interest and Prices’ being on the market since 1936. We will quote from the English edition.^v Given that Wicksell has been lost to the current generation of economists,^{vi} we find it worthwhile to distill his insights from his 1898 book for the reader who has never heard of him. Wicksell, if he is known, is often portrayed as the inventor of the loanable funds theory. While the book does contain it, it is not correct to qualify Wicksell as just another neoclassical economist. Wicksell indeed starts out from the neoclassical position, trying to bring dynamics into the quantity equation. He does so by splitting the problem in half. It is worthwhile to present a quote by Wicksell (1936, pp. 70) on his research method:

“We intend therefore, as a basis for the following discussion, to imagine a state of affairs in which money does not actually circulate at all, neither in the form of coin (except perhaps as small change) nor in the form of notes, but where all domestic payments are effected by means of the Giro system and bookkeeping transfers. A thorough analysis of this purely imaginary case seems to me to be worth while, for it provides a precise antithesis to the equally imaginary case of a pure cash system, in which credit plays no part whatever. The monetary systems actually employed in various countries can then be regarded as combinations of these two extreme types.”

Wicksell’s methodology consists of a discussion of an idealized theoretical system, which he calls „pure“. He describes reality and builds his theory around

his observations. His approach is positive and not very abstract. Even though one might think that „pure“ theory is disconnected from the real world, it is not. Wicksell uses examples to discuss certain transactions and explains by telling little stories that simplify reality somewhat, but are intended to capture the essentials. This is where abstraction comes in. Wicksell’s approach is empirical in the sense that observations in the real world form the basis for his theory which should answer questions that arise from problems rooted not in the abstract but in the real. Wicksell turned to economics for practical reasons, i. e. to solve social problems such as inflation and deflation processes such as in the second half of the 19th century, particularly the Long Depression starting in 1873 with deflation until (almost) 1898, the year of the publication of Wicksell’s book. Ohlin explicitly mentioned this in the introduction of the translation of the 1898 book into English (1936), writing: „’Why do prices rise or fall?’ [...] Wicksell at an early stage came to regard as the main problem of monetary theory“ (1936, p. vii).

About 60 years after Wicksell published his book, Jacques Le Bourva wrote two articles in *Revue Economique* in 1959 and 1962 respectively that have been published in a comprehensive English version in the *Review of Political Economy* in 1992 under the title „Money creation and credit multipliers“.^{vii} Given that most readers will find it easier to familiarize themselves with the English version, we discuss the translation rather than the original.^{viii} Le Bourva stands on Wicksell’s shoulders in terms of research project and methodology. „To sketch properly the formation of credit, it would seem logical to proceed from the simplest case to the most complex and realistic one“, Le Bourva (1992, p. 453) states. He reminds his readers of Wicksell and his „pure credit money“ and starts with the same setup as Wicksell – one single bank and one single form of money consisting of deposits that are transmitted via cheque. As Wicksell, Le Bourva develops an alternative monetary theory. In contrast to Wicksell Le Bourva does not set out to build on the quantity theory, but instead sees it as „no longer tenable“, which is why in France of his day „the Banking School and Wicksell prevail“ (pp. 447-8). As for Wicksell, explaining changes in the price level is his goal. Le Bourva would prefer to see his theory prevail and not amend the quantity theory of money. The aim of his paper(s) is to shift the main point of attack on the quantity theory of money from ‘instability of the velocity of money’ to ‘credit is not limited by

money'. As a central banker of the Banque de France, Le Bourva was used to think in balance sheets. His approach follows Wicksell's in not building on abstract models with equilibrium but rather focussing on (reserve) accounting, with a practical problem in his mind.

Practical problems seem also to be the core of MMT. Wray (2012, pp. ix) writes in his introduction: „To put it simply, we have uncovered how money ‚works‘ in the modern economy.“^{ix} This statement is followed by a presentation of balance sheets and transactions. Wray and most other MMT authors use balance sheets more explicitly than both Wicksell and Le Bourva, but apart from the essential ideas added it is rather an improvement in style of presentation than a difference in method. What Wicksell and Le Bourva – aided by two diagrams – argued in verbal prose can be seen as a forefather to the „balance sheet economics“ put forward by MMT. The research project is quite identical. There is not a lot of discussion of what it exactly is that is done and why, but practically, Wray (2012) in chapter 3 explains banking and central banking not unlike Wicksell and Le Bourva. He goes to some length in pointing out what reserves and deposits are, how they are created and destroyed, who uses and creates them and what the function in the economy is. It is not mentioned that this methodology is different from Woodford (2003) and others. Wray (2012, pp. x) sets out to write largely about theory with „a few examples, a little bit of data, and some discussion of actual real world operations“.

3. The origin and the value of money

Wicksell (1936, pp. 49) writes that „[s]trictly speaking, we can assert that *all* money – including metallic money – is *credit money*.“ For Wicksell it is the belief of the receiver of money in the ability to use it to acquire commodities that gives value to credit money. When reviewing Knapp's (1905) „State Theory of Money“, Wicksell (1999 [1907], pp. 32) writes that „Knapp seems to me to be absolutely correct [...] that as soon as an external form and marking of this kind have become essential to the legal force of the means of payment, then by this very development the substance itself has been displaced, has become a

peripheral, a secondary matter ...“. Le Bourva (1992, pp. 454) is not writing explicitly about the value of money but notes that „a bank’s main task is to *monetize debts*“. It seems that this view is compatible only with the chartalist view of money as expressed by Knapp, and not compatible with the metallist view of intrinsic value of metals. In the latter view, banks monetize gold and silver, but not debts.

MMT has been described as Neo-Chartalism by Lavoie (2013). Wray (1999) describes the Chartalist approach explicitly.^x In Wray (2012), he stresses that taxes drive money and explains that government needs to spend before it can tax. Money is described as an IOU (I owe you) issued by the state or by banks. The state issues central bank money via the central bank and government bonds via the treasury. Taxes ensure a steady demand for money. Traditional commercial banks make loans against collateral, Wray (2013) writes. MMT in general is more precise when it comes to the questions of origin and value of money, compared to Wicksell and Le Bourva.^{xi} Apart from detail, we do not find large differences in the three viewpoints discussed.

3. Banks and banking

In his classic from 1898 [1936] called „Interest and Prices“, Wicksell clearly understands that banks create money. He writes: „No matter what amount of money may be demanded from the banks, that is the amount which they are in a position to lend (so long as the security of the borrower is adequate). The banks have merely to enter a figure in the borrower’s account to represent a credit granted or a deposit created” (p. 110).^{xii} The demand for credit determines the quantity of credit, as Le Bourva stated early on in his article (p. 448). Le Bourva also agrees with Wicksell that banks set a price - the rate of interest - and not a quantity. Further agreement is reached on the idea that, as Le Bourva puts it, „bankers can, if they so desire, respond without limit to demands for credit“ (p. 449). Wicksell (1898, p. 85) recognizes that „[i]f a bank provides credit on too liberal a scale it is in direct danger of its notes or cheques becoming concentrated in the hands of the other banks and being presented by them for *redemption* ; or,

at best, it might have to pay a higher rate of interest on its current account with the other banks than the rate that it receives“.

Le Bourva in his discussion of clearing in section IV also recognizes that one possible solution of interbank market clearing „is that the four [=all] banks increase their loans equally at the start“ (p. 460). This would close the circuit automatically. The monetary circuit was also a topic in Wicksell, with the word „circulation“ appearing on 46 pages out of 196! He explicitly describes a monetary circuit with what Le Bourva calls „total prefinancing of operations“. Credit is created at the beginning and the notes circulate until „[t]he entrepreneurs in their turn present these cheques at the bank and so liquidate their liability to the bank“ (p. 105).

Le Bourva follows Wicksell and examines pure „credit money“, by which he means bank deposits. A single bank issuing deposits is imagined, in which deposits are subsequently moved around just as in Wicksell (1898). Le Bourva finds that „there is no limit to the volume of loans that the bank can grant“ (p. 453). At the going interest rates, loan demand is positive and the bank engages in what Le Bourva terms monetizing debts. The reputation of the bank is better than that of the business, which is why this scheme would arise. Le Bourva did not embrace Chartalist positions like Tcherneva (2007), who belongs to the MMT school.

While the pure money economy leads to the usual neoclassical view, the pure credit economy is more interesting. This is where Le Bourva connects to Wicksell. In contrast to Wicksell, he sets out to refocus the attack on the neoclassical view of money. Quoting Wicksell and the Banking School, he sides with those arguing that money is – or should be – elastic. Le Bourva builds on Wicksell when he comes up with his Figure 2, a horizontal credit supply curve and downward sloping credit demand curve.

Le Bourva defines desired and undesired money. Although it would be equally true for reserves, it seems to us that Le Bourva writes about money as deposits. Since this type of money is created by loans, repaying loans would destroy

undesired money. Hence all existing money must be desired. The initiative in the loan market lies with the demand side, and monetary policy can try to reduce the amount of loans, even though it remains doubtful that such policies will succeed. Loans are a last resort for borrowers since they are costly. Only if mobilizing idle balances and using overdrafts fail the amount of money will increase. Le Bourva proceeds with a discussion of transactions financed by dishoarding, which is somewhat unclear. Nevertheless the conclusion is that „the theory of credit elasticity [...] seems basically sound, while the opposite theory seems indefensible.“

The second part is on the automatic closure of circuits between loans and deposits. On the microeconomic dimension, Le Bourva agrees with Kalecki's (1939) principle of increasing risk. Credit extended to one client is not infinitely elastic, both the bank and the debtor face increasing risk with increasing size of the loan. Macroeconomically, there would be no problem with increasing the amount of loans. If banks expand their loan book in lockstep, the circuit of deposits in the clearing system would automatically close as inflows and outflows net out over time. Le Bourva sees „no theoretical limit to the capacity of the banking system as a whole to create the money it needs to meet the demands on it“ (p. 461).

For Modern Monetary Theory, Wray (2012, p. 93) affirms that „the bank is not lending anything it has, it just creates money things – bank deposits – at will“ which, in the 21st century, is done „by entering a number [...] in a computer“ (ibid). Wray stresses the role of creditworthiness and the bank's capacity to acquire reserves at low costs when it comes to the „success of the banking operation“. The former corresponds to the existence of collateral in Wicksell and Le Bourva and seems to confirm that given collateral banks can create unlimited amounts of deposits, whereas the latter is a variation of the discussion of the interbank market. When Wicksell wrote, his native Sweden was part of the Scandinavian Monetary Union, which was on the gold standard. It was clear that final settlement meant gold. With Le Bourva, settlement was a transfer of central bank money, and Wray (2012, pp. 94 f.) agrees with this view. He also shares the „horizontalist“ approach (p. 97) that vows the interest as exogenous with demand

for credit determining the quantity of credit.

4. Central banks and the money market

Wicksell (1898) did not explicitly introduce a central bank. He had only one bank extending credit to the whole economy, with deposits being transferred on its books from one account to another. Without a second bank the question of interbank deposit transfers naturally does not come up, and there is no role for a central bank or a clearing-house.^{xiii} The institutions that did fulfil the role of what today's money markets provide are not discussed. Wicksell does write about international transfers between banks and assumes that notes (reserves) are backed by gold – he was writing during the gold standard. Section III by Le Bourva (1992) titled “The similarities between real monetary systems and systems of pure credit money: the central bank” establishes a Wicksellian connection. Le Bourva recognizes that reserves are not backed by gold (any more) and that “[t]he central bank is very similar to the single bank of the ideal model” (p. 456), an insight which escaped Wicksell. Wray (2012, p. 77) in a historical section also describes a monetary system in which the currency is backed up by gold, just as in Wicksell's time. Modern monetary systems are compared to a pyramid, where government IOUs are located at the top. Bank IOUs and non-bank IOUs follow further down. Using the same concept of IOU for each layer means that MMT recognizes the similarity of money (IOU) creation for central bank and bank(s).

According to Le Bourva the central bank sets the interest rate and accomodates demand. Banks need reserves to pay off clearing-house deficits, to give cash to customers and to procure foreign currency.^{xiv} Changes in the interest rate by the central bank would have an effect that ‘is very indirect and uncertain’ (p. 457). Apart from profitability Le Bourva notes that banks must maintain their liquidity and avoid long-term clearing house deficits. Only if reserves would be automatically created equivalent to the deposits created, banks would be able to create money without limit. Le Bourva (1992) contrasts the quantity theorists and Keynes (of the General Theory) with the Banking School and Wicksell. The former would believe that a rise in demand for money leads to a rise in the rate of

interest, the latter would not.

Instead of setting a quantity, (central) banks would set a price for the money market - the interest rate - and lend what borrowers ask for, provided they have collateral. Le Bourva provides two graphs that perfectly express what Moore (1988) in his book termed horizontalist and verticalist views. Moore was working in the Post-Keynesian tradition, out of which MMT evolved, as Lavoie (2013) states. The idea of a horizontal credit (money) supply curve has been taken over by MMT. It is often stressed that central banks have the power to set the short-term money market interest rate at any level they want, and that central banks have full control over the interest rates they charge borrowers. MMT, just like Wicksell and Le Bourva, is denying that central banks control a monetary aggregate, which is not to say that the central bank is not able to change the amount of reserves in the banking system.

Le Bourva's discussion of the the money market being „in the bank“ is somewhat confusing, perhaps owing to the missing definition of money. Perhaps his expression of the money market being „in the bank“ means simply that banks do not settle. Instead, they move in and out of debt with each other. This is what MMT stresses as well. Banks do not settle after each transaction, but only at the end of the day. Banks are borrowing reserves only when they have to, because this operation is costly. Fullwiler (2008, p. 7) notes that „an individual bank desiring more reserve balances can borrow in the interbank or other money markets, while such borrowing between banks again can only shift balances between banks and does not alter the aggregate quantity.“

Le Bourva (1992) denies that the credit multiplier theory is valid. He points out that a reverse view is possible. Whereas it is normally assumed that banks lend out excess deposits at the central bank (reserves) to the private sector, one might alternatively argue that given the central bank lends at some interest rate against collateral whatever level of reserves that are demanded, it is credit determining money and not the other way around! Le Bourva writes that credit is often based on debt obligations, and that these debt obligations „are all alike in being mobilizable at the central bank provided that the maturity date falls within the

time limit set for each category“ (p. 462). Hence the access to reserves is determined not by the central bank but by the availability of suitable debt obligations upon which the central bank would be willing to lend reserves.^{xv} In a footnote Le Bourva writes: „The existence of excess liquidity must not be interpreted as a sign of imminent creation of credit, but as that of an insufficient demand for credit on the part of the borrowers“ (p. 462). This statement would be correct if Le Bourva had in mind a certain relation between deposits and cash.^{xvi}

Fullwiler (2009, p. 2) notes as his first principle that „[r]eserve balances do not ‚fund‘ loans or otherwise aid the creation of outside money“. Collateral is the basis of loans from the central bank if reserves are acquired not via the interbank market. Excess liquidity is ruled out by Fullwiler because it conflicts with the goal of controlling the short-term interest rate on the money market. A central bank usually targets the interest rate, and absorbs excess liquidity through open market operations. This description of the central bank engaging in automatic operations to achieve given targets is also found in Le Bourva. He assumes that banks have a certain demand for reserves, which they could acquire via different routes. Borrowing from other banks or the central bank is one obvious route, getting them through exchange of foreign reserves into domestic reserves would be another. Reserves can be created through different mechanisms and Le Bourva does not see why reserves created through foreign exchange operations between banks and central bank would hold any “magical power” (p. 463).

Le Bourva argues against the idea that a net exporting country will see its monetary aggregate and hence its price level rise. The Mundell-Fleming model would not work because additional reserves created through net exports can be used by banks to reduce their debt vis-a-vis the central bank. The foreign reserves that pile up at the central bank would not lead to any expansionary and/or inflationary effect that can be easily forecast. Wray (2012, pp. 165-6) mentions the case of China and predicts that “eventually” the country “will probably run current account deficits that will drain foreign currency reserves”. It is not clear in how far this is a prediction based on theory or empirical observation, but it would be interesting to pursue this issue further. Both Le Bourva and MMT agree that different actors who pursue different goals can drive money market operations. In

principle, agreement on the issue of a country's sustainability of a net exporting position would seem more likely than not.

5. The monetary circuit

Wicksell (1936, pp. 102-5) describes a monetary circuit that starts with production. Entrepreneurs without any capital of their own approach a bank and „all that happens is that the banks extend to the entrepreneurs credits against which they draw cheques.“ These cheques are used to pay workers (and rents), which after production occurs use the cheques to purchase the goods and services. The entrepreneurs „present these cheques at the bank and so liquidate their liability to the bank“. This is the law of reflux: unwanted money returns to the issuer.^{xvii}

Le Bourva understands that money created by the bank is destroyed when loans are repaid (p. 454). He compares this with the inflow of notes at the central bank, where the same applies. In today's world we would talk of reserves that are created by banks borrowing from the central bank and destroyed when banks repay their loans. Le Bourva affirms that „loans create deposits“ and that banks are not intermediaries. He also points out that „money is not just a stock, it is also a flow“ (p. 455). This flow would be very important, much more so than liquidity preference as stressed by Keynes (1936). Le Bourva continues by imagining a system of total prefinancing of operations, which would provide a link between the creation and destruction of money and income.^{xviii} In a passage that is worthy of highlighting he writes (p. 455):

‘Of course, incomes are not spent in their entirety on consumption, if net investment is positive in the aggregate, and if entrepreneurs have some cash balances at the outset and do not completely prefinance their activity, this creates complications that have achieved notoriety in the history of economic thought and that must be considered.’

In Wray (2012) and MMT in general, the monetary circuit is not appearing as in

Le Bourva and Wicksell. There is no discussion of why there is a demand for credit and why it depends on the interest rate. Hence the connection between profits and interest is not stressed. It seems that to some extent the idea of the monetary circuit underlies the discussion of the basic of macroeconomic accounting in which the three sectors – private, public, external – are stressed. Wray (2012, p. 6) writes that „[w]e want to make sure that all spending and saving comes from somewhere and goes somewhere“. He also discusses causation in terms of the sectors balances causing one another or being caused by the other. Wray (2012, pp. 8 ff.) stresses that economics is a social science, but that nevertheless some statements can be made about causality. Individual spending is determined by income, deficits create financial wealth, aggregate spending creates aggregate income and deficits in one sector create surpluses of another. This is a description of a monetary circuit in all but name.

6. Deficit spending by the government and (no) inflation

Wicksell, writing in the Gold Standard era of small government, does not mention government spending explicitly. Government back then did not engage in counter-cyclical fiscal policy. Nevertheless, Wicksell (1936, p. 190) wrote towards the end of his book about a situation in which the monetary circuit would be weak and policy intervention necessary:

‘The objection that a further reduction in rates of interest cannot be to the advantage of the banks may possibly in itself be perfectly correct. A fall in rates of interest may diminish the banks’ margin of profit more than it is likely to increase the extent of their business. I should like then in all humility to call attention to the fact that the banks’ prime duty is not to earn a great deal of money but to provide the public with a medium of exchange—and to provide this medium in adequate measure, to aim at stability of prices. In any case, their obligations to society are enormously more important than their private obligations, and if they are ultimately unable to fulfil their obligations to society along the lines of private enterprise—which I very much doubt—then they would provide a worthy

activity for the State.'

This can be interpreted as a paleo-Keynesian prescription of a government-owned bank that would extend credit to the entrepreneurs in times of crisis to keep the monetary circuit going. Keeping in mind that Wicksell understands that additional bank deposits create additional incomes, this amounts to a description of deficit spending by the government that is compatible with later Keynesian ideas, like Lerner's (1943) "functional finance".

Le Bourva writes about government spending in the context of monetarist ideas of inflation and fails to find a link: "When the Treasury has to obtain advances from the Bank of France in order to settle state debts, this money then flows into the accounts that banks have at the Bank of France" (pp. 463-4).^{xix} It would be cheaper for banks to obtain reserves through this mechanism than through borrowing from the Bank de France. Banks would compensate the increased reserves created through fiscal expansion by diminished demand for rediscounting at the Bank de France. Another way to compensate additional reserves would be for banks to buy government securities held by the central bank. In the next section on whether deficits of the public sector can cause inflationary processes, Le Bourva states that the general price level is an independent variable on which the quantity of money would depend. This turns the quantity theory on its head. The price level does not depend on the quantity of money, but the quantity of money on the general price level.

„A government using fiat money has pricing power that it may not understand“, writes Mosler (1995, p. 18). MMT authors are well aware that the government needs to spend first before it taxes, and that its spending will have an influence on the inflation rate. Wray (2012, p. 194) recognizes in the context of functional finance that „runaway spending would be inflationary“ and has a chapter named „Policy for Full Employment and Price Stability“. This is in line with both Wicksell and Le Bourva, since it is not the increase in reserves that raises the price level but the rise in aggregate demand, probably via increased wages in the labour market. Wray (2012, p. 221 ff.) proposes that the government gives citizens a job guarantee (or acting as employer of last resort) at a fixed wage and

defined additional non-wage benefits like health care or social security. This would stabilize the economy by maintaining full employment, as workers shift in and out of the government's employment programme over time.^{xx}

7. Conclusion

Comparing the limited work of Wicksell and Le Bourva that we have chosen to represent their ideas with that of MMT we think that they share many similarities. Obviously, the institutions change over the decades and so do the problems, but all three views agree on some fundamental issues. The methodology is quite the same, with a strong focus on balance sheets and not on theoretical models based on assumptions that are necessary for the mathematics to work. There is also a strong consensus that monetary theory is positive, not normative. All three seem to agree on the idea of Chartalism when it comes to the origin and value of money, on endogeneity of money with respect to banks creating deposits, on the role of the money market in the economy and the missing link to inflation, on the monetary circuit and the link from debt to income and on the effects of deficit spending.

Some minor differences occur when it comes to the question of why banks do not expand credit without limit if they can. Wicksell believes that the interbank-market debt of banks expanding their loan books relatively faster than other banks will hold back bank loan creation, while Le Bourva agrees with Kalecki and sees rising risk as the major factor. In Wray (2012), it is creditworthiness and access to reserves that limit the extension of loans. There is also some potential disagreement between Le Bourva and MMT about the exchange rate regime. Le Bourva argues that in a system of fixed exchange rates foreign capital inflows do not have a direct effect on domestic inflation. He would probably not agree with Wray (2012, p. 185) who sees a flexible exchange rate system as the most feasible.

A third issue that we find interesting is the monetary circuit. Whereas Wicksell and Le Bourva quite explicitly embraced the idea, Wray (2012) and MMT in

general seem not eager to discuss it.^{xxi} There is not much discussion of why entrepreneurs borrow and under which conditions, and there is not much discussion the link between debt and income or debt and capital.^{xxii} That is not to say that we think that MMT authors would disagree with these ideas, but it might be interesting to find out why the monetary circuit is not featured more prominently. These three issues might be interesting points to discuss in the future.

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ⁱ McLeay et al. (2014) from the Bank of England created an introduction to endogenous money which triggered a lot of discussions in economics faculties.

ⁱⁱ This new consensus monetary theory encompasses Post-Keynesians, including Modern Monetary Theory (MMT), the paper by McLeay et al. (2014) of the Bank of England, Gavin and Kydland (1995) of the Fed St. Louis, Stracca (2007) of the ECB and many if not most central bankers, and authors such as Koo (2009), Mehrling (2010), as well as Sheard (2011) for Nomura and Sheard (2013) for Standard&Poor's and other financial market participants.

ⁱⁱⁱ A contrasting view is expressed by Clinton (2006).

^{iv} The Primer by Wray seems to be the most recent compendium of MMT. Other compendia are Mosler (2010) and Ehnts (2014), who focuses on the eurozone. The work of Minsky, which is also part of MMT, is omitted in this article because it touches some finer points that Wicksell and Le Bourva did not write about. See Wray (2011) for a Minskian view of the GFC.

^v Available online at <https://archive.org/details/interestandprice033322mbp>.

^{vi} Leijonhufvud (1981), Woodford (2003) and Lavoie and Seccareccia (2004) are noteworthy exceptions. We agree with Boianovsky and Trautwein (2006, 184) though that the models developed by Woodford (2003) are 'wider off the mark than the approaches of the old Wicksellians'.

^{vii} The translation was done by a graduate student of Marc Lavoie with some help from Mario Seccareccia. Only part I is from the 1959 paper.

^{viii} One of the authors is a native French speaker and has read the originals as well.

^{ix} Tymoigne (2006) presents an alternative MMT framework to the functional approach to analyze money.

^x A shorter version is Wray (2014).

^{xi} See Wray (1999) for historical treatment of money.

^{xii} All quotes are taken from the English translation of 1936.

^{xiii} Jevons (1876, ch. XX) describes a system of two banks with a clearing house some time before Wicksell published his book.

^{xiv} Deposits held at the central bank can be withdrawn in the form of cash.

^{xv} It seems that Le Bourva describes the short-term here. In the long-term, the central bank can decide the standards regarding suitable debt obligations (collateral).

^{xvi} Another possible cause for excess liquidity would be a disintermediation of the interbank market.

^{xvii} See chapter 3 in Fullarton (1845).

^{xviii} For an overview of the income theory of money see Mensik (2015).

^{xix} This connects to Innes (1914), who wrote that "there is apparently no special depreciation of the government money, but a gradual rise of prices, a rise which, if it implies the depreciation of any money, implies evidently the depreciation of all money, by whomsoever issued; and there is nothing in the credit theory, if considered by itself, which would lead the student to think that a general fall in the value of bank money or merchants' money would follow an excessive indebtedness on the part of the government."

^{xx} The role of monetary policy is not discussed in that chapter.

^{xxi} The index in Wray (2012) contains no entry „monetary circuit“.

^{xxii} Perhaps MMT is a demand-side theory by default and it never occurred to anyone to describe what and how much would be produced in a world of fiat money and full employment?