

# MPRA

Munich Personal RePEc Archive

## **Liquidity preference in the Walrasian framework**

Icefield, William

10 January 2020

Online at <https://mpra.ub.uni-muenchen.de/98538/>

MPRA Paper No. 98538, posted 10 Feb 2020 08:35 UTC

# Liquidity preference in the Walrasian framework

William Icefield

## ABSTRACT

John Hicks argued that liquidity preference theory and loanable funds theory are equivalent, because in general equilibrium, Walras law dictates that one (for example, money) market is redundant when other markets (bond, commodities) are in equilibrium. While there are many other well-known criticisms of this point, I take a route that is rarely invoked - that liquidity preference can encode agent's reactions against risk of disequilibrium in a general equilibrium model. In such a case, money market may be in equilibrium, especially due to endogenous money, while other markets are in disequilibrium. In such a case, liquidity preference theory - or theory of money demand - determines rate of interest, as John Maynard Keynes asserted in General Theory, instead of loanable funds theory.

## KEYWORDS

liquidity preference, loanable funds theory, disequilibrium, general equilibrium, Keynes, Walras law

## JEL CLASSIFICATION

B22, B41, D59, E12, E20, E43

## 1. Introduction

As seen in Patinkin (1958), it is common to hear the argument first made by John Hicks (Hicks, 1939) in mainstream economics that it does not matter whether we use liquidity preference theory (Keynes, 1936) or loanable funds theory. In this paper, liquidity preference theory is understood as theory of money demand, while loanable funds theory is understood as theory of simultaneous equilibration of commodity and bond markets.

The argument of equivalence goes as follows. Walras law dictates that if commodity and bond markets are in equilibrium (governed by loanable funds theory), then money market, governed by liquidity preference theory, must be in equilibrium as well. Thus, one can drop money market to solve for an equilibrium. Similarly, one can instead drop bond market to

solve for an equilibrium. In this sense, loanable funds theory is said to be equivalent to liquidity preference theory.

Going the other way, one can drop commodity market instead and solve for an equilibrium. In this case, we get IS-LM model (Hicks, 1937), with the IS sector representing the semi-equilibrium condition of bond market and the LM sector representing the semi-equilibrium condition of money market. It must be acknowledged, though, that the IS sector is more often connected to the semi-equilibrium condition of aggregate savings and investment.

So far the Hicksian vision of loanable funds theory was considered - other variants, such as by Dennis Robertson (Robertson, 1940), exist. For Robertson's vision of loanable funds theory and the original exposition of IS-LM model in Hicks (1937), where aggregate savings and investment are equilibrated, a rebuttal that aggregate investment equals to aggregate savings regardless of funding issues can be made. (Hayes, 2009) I focus on the Hicksian vision from now on.

There have been criticisms of this Hicksian vision of mainstream economics. One is that Walras law is meaningless in a monetary economy, because there is not a single money market, but money markets for all transactions. (Tsiang, 1989) If a firm wishes to sell products that have gone unsold, then a firm creates excess demand for money corresponding to excess supply of product. In this sense, Walras law is meaningless.

### **1.1. Hayes (2009): System of Keynes**

Another major point against the Hicksian vision of loanable funds theory and liquidity preference theory is that in the system of Keynes in *General Theory* (Keynes, 1936), a Walrasian model makes no sense, as explained in Hayes (2009).

The following summary will definitely miss out some details, but a crucial detail is this: unlike in a Walrasian general equilibrium model where you have to determine actual income and budget by solving for an equilibrium, in reality people do know their actual monetary budget when making decisions. This is a characteristic of a monetary economy, in contrast to a centralized barter exchange economy. One may then ask, "wouldn't part of these budgets be spent to others, which become new incomes? In that sense, aren't actual income and actual budget undetermined before solving for an equilibrium?"

This question arises out of confusion over handling of time. Any economic transaction

takes time. So it is still true that agents know their actual budget at any time. Then, it makes no sense to discuss a state of Walrasian disequilibrium, if an equilibrium state can only be actual. Now let us take the quantum of time to be a day.

Today's decisions that determine (and not just affect) today's income parts of budget tomorrow, of course, depend on expected (more distant) future budget and profits. A firm notices actual demand today and along with other market indicators, forms expectations of future demand such that internally, its expected future demand equals expected future supply. This can be summarized as the principle of effective demand.

### ***1.2. So why discuss the Walrasian framework again?***

So if these points against the Walrasian framework, supported by stock-flow and accounting consistency, are valid, why even discuss the Walrasian framework?

First, it is beneficial to see how far liquidity preference theory may matter in a general equilibrium model, at least as a simplified exposition and abstraction of the system of Keynes, given complexity of modeling and time aggregation issues involving recorded data. A simplified exposition may help understanding how and why liquidity preference theory works.

Second, it is still reasonable to expect that excess supply or demand for today's goods - whether commodities, bonds - exists. We can call this Walrasian excess demand (Walrasian disequilibrium) without having to accept a Walrasian model. This can hold even when a firm internally has equaled its expected future demand with expected future supply, and therefore no state of disequilibrium exists in sense of Keynes. It thus makes sense to discuss how agents would try to protect against risks of Walrasian disequilibrium.

This is the direction I proceed toward. Again, I do not intend to defend the Walrasian framework nor argue against authors critical of the Walrasian framework.

First, a simple theory of liquidity preference and money demand based on risks of Walrasian disequilibrium is pointed out. Then it is pointed out that if money market is in equilibrium, then other markets are in disequilibrium - in such a case, liquidity preference theory comes before loanable funds theory even in the Walrasian framework. I invoke the structuralist view of endogenous money (Palley, 2013) to give a good reason why money market reaches an equilibrium first in the Walrasian framework. This analysis provides one reason why when left to the markets, full-employment or full-capacity equilibrium may not be reached.

## **2. Walrasian disequilibrium theory of liquidity preference**

From now on, I stick with the Walrasian framework.

The question asked is: why do people have preference over liquidity? Translated to the language of mainstream economics, it is about providing microfoundations for liquidity preference, and works on this area can be seen as in Wright (2018), some of them called New Monetarist models. However, these models tend to feature heavily artificial economic environments, which somewhat defeat the intent of New Monetarist models to provide sound microfoundations for monetary economics.

Given this circumstance, it is beneficial to look at a simple theory of liquidity preference possible in the Walrasian framework - disequilibrium. Walrasian disequilibrium means that even at market price, agents will not sometimes be able to sell their assets to obtain money required to purchase or fund anything else. Money thus provides protections against Walrasian disequilibrium, even though it cannot eliminate disequilibrium risk of products simply being unavailable.

Liquidity preference function - or money demand function - then arrives as expectation for likelihood and scale of Walrasian disequilibrium, and what incentives must be provided for parting with liquidity - the latter being mentioned directly in General Theory (Keynes, 1936).

### **2.1. *Disequilibrium analysis***

Suppose that money market is in equilibrium. But given nature of liquidity preference as arising out of desires of agents to protect against Walrasian disequilibrium, money market equilibrium very likely is not supported as an equilibrium for other markets. That is, an equilibrium of all markets does not exist.

Given the assumption that money market is in equilibrium, liquidity preference theory then dominates over loanable funds theory. Rate of interest and 'quantity of money' are determined by intersection of money supply and money demand, which is modeled by liquidity preference theory.

### 3. Endogenous money and money market

I now describe why money market may reach an equilibrium in the Walrasian framework first, while other markets do not. I invoke a structuralist vision (Palley, 2013) of endogenous money to support such a view, since a simple horizontalist view (Moore, 1988) provides no role for money demand, required for liquidity preference theory.

An important point in understanding endogenous money is that reserves (high-powered money) necessities are the resulting consequence of loans and deposits. Mainstream economics has moved toward this understanding as well, but a popular misconception that reserves create loans and deposits still exists. In this endogenous money sense, it is inevitable that roughly, central bank accommodates reserves necessities at the target rate of interest on reserves. Thus, the reserves market is roughly in equilibrium.

Liquidity preference affects demands for deposit facilities, which we may call as money demand. Through this channel, demands for reserves are affected by liquidity preference.

The question then is for other markets - loan and deposit markets. Are they in equilibrium? I argue that while loan markets may be in disequilibrium, deposit markets are roughly in equilibrium. We can consider reserves and deposit markets as being money markets, and we can therefore argue that money markets are in equilibrium.

The reason is that central bank aims to control the money market rate of interest by setting the target rate of interest on reserves. The rate of interest on deposits then is commonly assumed to be controlled by the rate of interest on reserves. Thus, demand for deposits are accommodated at the given rate of interest on deposits, looked from macroeconomic perspectives.

It is true that money demand is affected by outcomes in other markets. However, money demand here is affected by actual outcomes, not potential outcomes. How agents respond to today's actual disequilibrium outcomes is about agents setting prices and rates next period, which we may model as changing money demand function.

In this sense, given that money markets are in equilibrium, we can conclude that for matter of solving for a model outcome, liquidity preference theory has primacy over loanable funds model. It is difficult to know what disequilibrium would form, and it is thus better to solve for an equilibrium whenever feasible. Therefore, liquidity preference theory should be used

to solve for a model outcome.

#### **4. Conclusion: why markets do not converge to full-employment outcomes**

In New Keynesian economics (Woodford, 2003; Galí, 2015) that has become quite dominant in mainstream macroeconomics, without market frictions such as sticky price or sticky wage, markets adjust to full-employment outcomes. This paper suggests that once desires to protect against risks of Walrasian disequilibrium outcomes are projected to liquidity preference, then markets may not even have an equilibrium, in Walrasian sense. Because of endogenous money, money markets are roughly in equilibrium before other markets, and this suggests that liquidity preference theory, or theory of money demand, has primacy over loanable funds theory.

Thus, markets cannot automatically adjust to full-employment outcomes, even when there are no market frictions, unless one considers Walrasian disequilibrium as market frictions. To reach full-employment outcomes, government interventions, which include, but not limited to, Keynesian fiscal policies, may be necessary even in the Walrasian framework.

#### **Conflicts of interest**

Authors report no conflict of interest.

#### **References**

- Galí, J. 2015. *Monetary Policy, Inflation, and the Business Cycle*. Princeton University Press.
- Hayes, M. G. 2009. The loanable funds fallacy: saving, finance and equilibrium. *Cambridge Journal of Economics*, 34(4):807–820.
- Hicks, J. 1937. Mr. Keynes and the "classics": A suggested interpretation. *Econometrica*, 5(2):147–159.
- Hicks, J. 1939. *Value and Capital*. Oxford: Clarendon Press.
- Keynes, J. M. 1936. *The General Theory of Employment, Interest and Money*. London: Macmillan for the Royal Economic Society.

- Moore, B. 1988. *Horizontalists and Verticalists: The Macroeconomics of Credit Money*. Cambridge: Cambridge University Press.
- Palley, T. 2013. Horizontalists, verticalists, and structuralists: The theory of endogenous money reassessed. Working paper, Hans-Böckler-Stiftung, Institut für Makroökonomie und Konjunkturforschung (IMK).
- Patinkin, D. 1958. Liquidity preference and loanable funds : Stock and flow analysis. *Economica*, 25(100):300–318.
- Robertson, D. H. 1940. *Essays in Monetary Theory*. London: Staples Press.
- Tsiang, S. 1989. Walras' law, say's law, and liquidity preference in general equilibrium analysis. In *Finance Constraints and the Theory of Money*, M. Kohn and S. Tsiang, eds., Pp. 133 – 151. Academic Press.
- Woodford, M. 2003. *Interest and Prices*. Princeton University Press.
- Wright, R. 2018. On the future of macroeconomics: a New Monetarist perspective. *Oxford Review of Economic Policy*, 34(1):107–131.