

The Monetary Theory According to Thornton and Wicksell

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Abstract:

*This paper delves into the monetary theories Henry Thornton and Knut Wicksell proposed, focusing on their implications for understanding economic fluctuations and inflationary processes. Thornton's pioneering work, *An Enquiry into the Nature and Effects of the Paper Credit of Great Britain* (1802), laid the groundwork for modern monetary theory by examining the complex interactions between credit supply, interest rates, and price levels. His analysis, which prefigures Wicksell's cumulative process, highlights the potential for credit expansion to drive inflation if not matched by a corresponding increase in goods and services. In his seminal work *Interest and Prices* (1898), Wicksell extends Thornton's insights by exploring the role of interest rate discrepancies between the natural and market rates in generating inflationary or deflationary pressures. This paper synthesizes Wicksell's validation of Say's Law and the Quantity Theory of Money in the long term while acknowledging the short-term deviations due to price rigidity and shifts in economic expectations. By integrating these theoretical frameworks, the paper offers a comprehensive view of the significance of prudent monetary policy in maintaining economic stability, enlightening the audience about the complexities and nuances of this crucial aspect of macroeconomic thought.*

Key Word: Monetary Theory; Wicksell; Cumulative Process; Thornton; Say's Law.

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I. Introduction

Thornton's pioneering research, which laid the groundwork for a deeper understanding of structural changes in the economy, has had a profound impact on the field of economics. During the late 18th and early 19th centuries, economic theory was still in its formative stages, with many of its foundational concepts being developed in response to the challenges posed by emerging financial systems. Thornton's analysis of the effects of paper credit in Britain was not only timely but also prescient, as it addressed the complexities of a rapidly evolving economy. His work laid the groundwork for a deeper understanding of the interactions between money supply, credit, and economic stability, which Wicksell would later expand upon. The economic environment of the time, characterized by the proliferation of paper money and fluctuating interest rates, provided fertile ground for developing theories that sought to explain the underlying mechanisms driving inflation and economic fluctuations.

Thornton's work, *An Enquiry into the Nature and Effects of the Paper Credit of Great Britain* (1802) is widely recognised as fundamental to the development of monetary theory (Laidler, 1991), having influenced economists such as Keynes, Friedman, and Wicksell. Thornton was among the first to explore the complex relationship between credit supply, interest rates, and price levels, an analysis that foreshadowed Wicksell's later ideas, particularly concerning the cumulative inflation process. In *Interest and Prices* (1898), Wicksell expands upon this analysis by discussing how excessive use of credit can lead to demand-pull inflation, especially when the market interest rate is below the natural interest rate.

This article delves into Wicksell's theoretical synthesis, focusing on how his ideas validate Say's Law and the Quantity Theory of Money in the long run. It provides a detailed analysis of Wicksell's monetary theory and its relation to Thornton's contributions, examining how both authors explain economic fluctuations through variations in credit and the interaction between money supply and output. The discussion also covers how this analysis applies in periods of expansion as well as in times of crisis, offering a comprehensive perspective on the role of credit in economic dynamics and contemporary monetary policies. This comprehensive perspective, backed by thorough research, will leave you feeling reassured about the depth of our understanding of these economic principles.

II. Wicksell's Synthesis: Validation of Say's Law and the Quantity Theory of Money in the Long Run

In Thornton's theory, the conceptualisation of money is dynamic, encompassing banknotes, coins, and credit instruments. Banks, as suppliers of legal tender (banknotes and coins), have a certain degree of control over the money supply. However, this control is not static, as the volume of credit instruments is a function of business confidence. When business confidence is high, the volume of traded instruments expands; conversely, when distrust prevails, the volume of credit instruments contracts. This dynamic nature of the money supply underscores the complexity of Thornton's theory and the variations in the quantity of paper money and coins in circulation, which can be offset or reinforced by the endogenous component (credit instruments).

Wicksell, like Thornton, has a definition of money that includes credit instruments, that is, a promise of payment. The broad definition employed by these authors allows them to accept the validity of the Quantity Theory of Money in the long run. The expansion of the endogenous component would be equivalent to an increase in money circulation velocity, as the Quantity Theory foresaw. Similarly, the postponement of transactions by economic agents would merely result in a reduction in the velocity of money circulation, as also predicted by the Quantity Theory. The revival of the Quantity Theory occurs with the adoption of the velocity of money circulation as an adjustment variable.

However, upon realising that credit creates purchasing power (without a prior equivalent value in goods), these authors recognised the rejection of Say's Law in the short term, as demand would no longer be generated from supply.

Thornton, like Wicksell, uses credit variation in his theory to explain an inflationary process. The author argues that when the rate of expected marginal profits is higher than the bank interest rate, it leads to excessive use of credit. According to Knut Wicksell's economic theory, the use of resources obtained through loans, when directed towards productive activities, plays a crucial role in economic dynamics as it directly contributes to the expansion of aggregate supply. Wicksell argues that the economy's productive capacity is increased by channelling these financial resources into investments in capital, infrastructure, or other forms of production. This finding means that more goods and services can be financed and produced, increasing the supply available in the market. As long as the interest rate is maintained, borrowing to finance production will continue.

This increase in supply occurs because loans stimulate the creation of new factories, the modernisation of equipment, the hiring of more workers, and the introduction of new technologies. These investments, in turn, expand companies' production capacity and increase the quantity of goods and services available for consumption and other economic uses. In summary, Wicksell's theory suggests that directing loan resources towards production drives economic growth.

This process of economic expansion through credit is central to the description of Wicksell's cumulative process, as interpreted by Schumpeter (1964, p.416). The author highlights how the cycle of investment and increased supply can trigger a continuous growth movement, fuelled by the interaction between the money supply and the productive forces of the economy:

The equilibrium of Thornton's theorem is unstable: an increase in loans beyond the equilibrium amount will eventually result in a rise in prices, and if the interest rate continues to be maintained at its old level, additional loans will continue to be profitable at the new price level, further credit expansion will follow, and so on, without any definable limit, leading to Wicksell's cumulative process.

Similarly, Thornton also observed that business confidence increases significantly during the economic expansion phase, leading to greater use of credit instruments. According to Thornton, this credit expansion is a relevant component in economic growth, a view that complements Wicksell's perspective on the role of credit in the cumulative process.

However, in times of crisis, this dynamic is reversed. A downturn in business confidence leads to predominant distrust and a rejection of the use of credit instruments. Consequently, there is a significant demand for loans, while the willingness to grant them decreases, resulting in a rise in interest rates. During these times, a liquidity preference emerges, reflecting the economic agents' need for security and the consequent refusal to accept credit instruments in exchange for money. In this context, Keynes's concept of liquidity preference is distinguished by the following reason: instead of panic, it is the speculative motive that he considers the main cause of liquidity demand in times of uncertainty, marking a fundamental difference from the Keynesian view.

Therefore, for Thornton, credit would be capable of explaining the fluctuations that occur in the economy. The excessive use of credit during the optimistic phase pushes the economy beyond equilibrium, while its rapid contraction leads the economy into crisis. In this scenario, a firm or manufacturing unit that had expanded production, motivated by the credit-fuelled demand expansion, may end up creating additional output that, in the end, will not find a market due to the subsequent contraction in demand.

Wicksell's theory, a significant departure from Say's Law, focuses on the financial market's dynamics, acknowledging the potential for imbalances between supply and demand. This approach, which explicitly

acknowledges the possibility of economic crises, led Leijonhufvud (1981) to consider Wicksell's theory as a realistic view of economic crises. As Schumpeter (1964, p.1083) observes: *Wicksell's adoption of it spelled renunciation of Say's law. He is, therefore, the patron saint of all those economists who renounce Say's law at present.*

Wicksell developed his model using the following assumptions:

1. Saving is a function of the interest rate. In other words, Wicksell proposed that the amount of saving in an economy may depend on the prevailing interest rate: higher interest rates tend to encourage saving, while lower rates may discourage it.
2. Investment is a function of the marginal productivity of capital. The marginal productivity of capital refers to the additional return obtained from using an extra unit of capital. That is, the more productive the additional capital, the greater the incentive for companies to invest. If the marginal productivity of capital is high, investments tend to increase because the expected return is greater. If the marginal productivity of capital is low, investments tend to decrease.
3. The natural interest rate, defined as the rate that balances saving and investment in an economy, is the element that equalises these two variables. According to Wicksell, if the market interest rate is below the natural interest rate, investment will exceed saving, leading to an increase in aggregate demand and consequently to inflation. On the other hand, if the market interest rate is above the natural interest rate, saving will exceed investment, resulting in a decrease in aggregate demand and potentially in deflation.
4. A perfectly competitive market prevails. This means the model considers a market with many buyers and sellers, where no participant can influence the market price, and all have full access to relevant information. This assumption is common in many classical economic models as it simplifies analysis by eliminating market imperfections, such as monopolies or oligopolies, which could distort prices and quantities.
5. The bank interest rate results from the interaction between the supply and demand for credit. Banks and other financial institutions that make funds available for loans, while the demand for credit comes from individuals, businesses, and governments seeking to borrow determine the supply of credit. The interest rate adjusts to balance the amount of credit supplied and demanded in the market.

Based on the abovementioned assumptions, Wicksell explains the inflationary (and deflationary) phenomenon through a cumulative process. As in Thornton's case, the existence of a difference between the bank rate and the natural rate will cause an expansion of loans if the natural rate is higher than the bank rate or a contraction of loans in the opposite case.

Therefore, both authors believe that money supply variations result from loan changes, which are driven by the gap between the two interest rates. Wicksell believes that fluctuations in the natural interest rate are common and arise from technological changes and variations in the volume of investments.

The expansion of demand resulting from an increase in the money supply can lead to an increase in production and prices, especially if the market interest rate is lower than the natural interest rate. As long as entrepreneurs believe that prices will rise, they will take out loans to apply to production.

The perception that investment is financed by credit in the short term leads Wicksell to reject Ricardo's belief that saving is the element that finances investment. Thus, the author rejects, in the short term, the classical principle that saving equals investment through the interest rate, as proposed by Mill (1848, p.77):

All capital, with a trifling exception, was originally the result of saving. [...] All that any one employs in supporting and carrying on any other labour than his own, must have been originally brought together by saving; somebody must have produced it and forborne to consume it. We may say, therefore, without material inaccuracy, that all capital, and especially all addition to capital, is the result of saving.

In this way, Wicksell rejects, in the short term, the classical principle that saving equals investment through the interest rate.

In Wicksell, as in Thornton, price variations absorb the economy's "liquidity" fluctuations in the long run. In this way, an inflationary process would absorb the increase in demand, assuming the monetary stock remains constant. Thus, money would temporarily affect production.

However, in the long run, only changes in saving or investment would cause changes in output since investment is a function of marginal productivity and saving is non-consumption, both real and not monetary variations. Thus, only technological advancements, by altering the marginal cost curve of firms, would enable an increase in output by making investments more profitable.

Therefore, Wicksell validates Say's Law in the long run, as demand is created from supply and the Quantity Theory of Money, as monetary expansion results in price increases. Say's Law, often summarised by the expression 'supply creates its own demand,' suggests that producing goods and services automatically generates an equivalent demand, provided markets, the dynamic forces of the economy, are sufficiently flexible. Wicksell accepts this principle in the long run, arguing that in an economy tending towards equilibrium, an increase in the supply of goods and services will eventually lead to an adjustment in aggregate demand.

However, Wicksell also recognises that, in the short term, discrepancies can arise due to the rigidity of prices and wages and the influence of economic agents' expectations. These rigidities can prevent Say's Law from being realised immediately, creating temporary imbalances between supply and demand. In particular, during periods of economic crisis or uncertainty, the lack of flexibility can exacerbate these imbalances, resulting in unemployment or inflation. Nevertheless, Wicksell considers that these imbalances are corrected in the long term. This correction is facilitated by the self-correcting nature of the economy, where price flexibility and the mobility of production factors play a crucial role. These factors ultimately adjust the economy, ensuring that, over time, the economy tends to return to equilibrium, validating the principles of Say's Law in the long run.

Ricardo's interpretation of the dynamics between supply and demand aligns in several respects with Say's Law, which suggests that *supply creates its own demand*. Ricardo argues that while there may be a temporary excess supply of a specific good, such as wheat or shoes, the demand for these goods does not entirely vanish due to the continuous and, in some cases, insatiable nature of human needs.

Ricardo posits that the absorption of production is ensured by the hypothesis of unlimited demand concerning all types of goods. He argues that while a specific commodity might be overproduced to the point where there is a glut in the market, this situation cannot occur for all commodities collectively. The continuous needs of the population drive the demand for basic goods like wheat and clothing, while any surplus production is absorbed by insatiable human desires that extend beyond necessities (Ricardo, 1821).

Moreover, Wicksell incorporates the quantity theory of money, which posits that the general price level is directly proportional to the amount of money in circulation, assuming the constancy of the velocity of circulation and the volume of transactions. In his model, when not accompanied by a corresponding increase in production, monetary expansion tends to cause a rise in prices, supporting the quantity theory. Thus, he argues that monetary policy plays a relevant role in economic stabilisation, as the uncontrolled expansion of the money supply can lead to inflationary pressures.

Through this synthesis, Wicksell offers a perspective that reconciles elements of Say's Law and the quantity theory of money, suggesting that while in the long term, the economy tends towards equilibrium according to Say's Law, the management of the money supply is essential to avoid inflationary imbalances in the short term. This underscores the importance of prudent monetary policies to ensure economic stability, a central aspect of modern macroeconomic theories.

III. Conclusion

This study has analysed the fundamental contributions of Henry Thornton and Knut Wicksell to monetary theory, highlighting how their ideas are interconnected and complementary in understanding economic fluctuations and inflationary processes. Thornton's pioneering work, which laid the groundwork for analysing the interactions between credit, interest rates, and price levels, is of significant importance, as it anticipated many of the issues that Wicksell would later develop in his cumulative inflation process.

Expanding upon Thornton's findings, Wicksell demonstrated that discrepancies between the market interest rate and the natural rate can generate either inflationary or deflationary pressures, depending on the direction of the deviation. His approach, which validates Say's Law and the Quantity Theory of Money in the long term, simultaneously acknowledges short-term deviations due to price rigidity and agents' economic expectations.

The synthesis of these theories underscores the critical role of prudent monetary policy in ensuring economic stability. Understanding how credit and the money supply influence the economy is vital for formulating policies that can prevent inflationary imbalances and promote sustainable economic growth. By revisiting and integrating the ideas of Thornton and Wicksell, this work not only reinforces their ongoing relevance but also connects us to the rich history of macroeconomic thought.

Building on Thornton and Wicksell's theories, future research could explore various areas to further deepen the understanding of monetary dynamics and their implications for modern economies. One study area could involve a comparative analysis of how different economies have applied Wicksell's and Thornton's insights in historical contexts, particularly during economic crises. This could provide lessons on the effectiveness of monetary policies in preventing or mitigating inflationary pressures.

Another direction could be integrating modern technological advancements, such as digital currencies and blockchain technology, into Thornton's and Wicksell's theoretical framework. Investigating how these innovations impact the traditional relationships between credit, interest rates, and price levels could yield new insights into the evolving nature of monetary policy in the digital age.

Additionally, examining the intersection of their theories with behavioural economics could offer an understanding of how psychological factors and expectations influence the outcomes of monetary policies. This could lead to more refined models that consider the complexities of human behaviour in economic decision-making.

Finally, future research could explore the role of global financial interconnectedness in amplifying or mitigating the cumulative processes described by Wicksell. Understanding these global connections will be important for formulating effective and coordinated monetary policies as economies become more integrated.

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