

NEGATIVE INTEREST RATE POLICY (NIRP): HISTORY AND ARGUMENTS FOR AND AGAINST

Vendula Hynková

ABSTRACT

The paper deals with the history and the main pro and con arguments of an unconventional monetary policy used by a central bank or another monetary authority that falls out of line with traditional measures. Until recently, the introduction of negative interest rates was unthinkable in the economic practice. From the point of view of economists, there is no unified opinion on this unconventional monetary policy, and there are different attitudes and policies of central banks. Thus, this paper contains not only arguments for, but also arguments against, and compares the two opposing views on the negative interest rate policy. There is a debate on effective macroeconomic policy instruments and some pitfalls can be observed also at the scientific level.

Key words: *monetary policy; negative interest rates; negative interest rate policy (NIRP); unconventional monetary policy (UMP); monetary policy instruments*

JEL classification: E43, E52, E58

INTRODUCTION

According to economic theory, the rate of interest is defined generally as the price of credit, and it plays the role of the cost of capital. Interest rates can be examined from a microeconomic point of view, where the interest rate figures as an investment cost or as an equilibrium interest rate in the loanable funds market, or from a macroeconomic point of view, in the money market, where the money supply determined by the monetary authority meets the demand for money, and how this monetary authority can, via the key interest rates setting, influence the economy (investment, GDP, average price level, and employment).

When looking for an explanation of interest, the creator of the interest theory and the author of *The Abstinence Theory of Interest*, the English economist N. W. Senior (1790–1864), explained in detail and emphasized that the money used for lending purposes is the money not used for consumption and that earning interest acquired by abstaining from spending makes the funds possible and available for potential borrowers (Medema and Samuels, 2013).

Usually all nominal interest rates are set at a certain positive level in the financial sector, while real interest rates could be negative according to Fisher's equation, where real interest rates mean the difference between the nominal interest rate and the inflation rate. Specifically, key interest rates were set by central banks at positive values until some central banks decided to cross their lower limit, the so-called “Zero Lower Bound” (ZLB), of a nominal key interest rate towards negative values during the stagnation and fading of the 2008 recession. In the near past, central banks imposed negative interest rates because they were afraid that their domestic economies could fall into a deflationary spiral, in which there is no spending which leads to dropping prices, no profits, and no economic growth.

Many economists have questioned whether such a policy could be effective and whether it would do more harm than good. This paper provides an overview of setting negative interest rates, deals with the history of setting negative interest rates, examines the arguments for and against, compares the two opposing views on the negative interest rate policy (NIRP), and opens up questions to anyone to judge negative rates setting, submit pro and con arguments regarding the NIRP,

and point to experience in economic practice when making their judgement. The implementation of the NIRP still represents a “macroeconomic policy experiment” across concerned economics and so far, there has been no consensus on the effects of negative nominal interest rates, either empirically or theoretically.

1 THE HISTORY OF NEGATIVE INTEREST RATE POLICY

Negative interest rates are not an entire novelty that has emerged in the last few years, but they were detected as early as the 1970s. Switzerland was the first country to apply this policy in the 1970s in order to prevent excessive appreciation of its domestic currency, which would in turn negatively affect exports, real product, and employment.

In 1971, the convertibility of the US dollar to gold was abolished. The US dollar experienced a devaluation and Switzerland became an investment haven. As foreign investors increased the demand for the Swiss franc, they increased its value. The strengthening of the Swiss currency disadvantaged domestic exporters, and the Swiss government first introduced mandatory reserves for non-resident deposits. As this measure did not help, they banned the payment of interest to non-residents and, while not effective, they opted for a quarterly negative interest rate (penalty) of 2% on non-resident deposits. The first oil shock of 1973 exacerbated this situation, leading to subsequent measures when the Swiss government introduced a negative interest rate of up to 12% on non-resident deposits. However, Switzerland continued tackling capital inflows that did not stop even after a 41% negative annual interest rate on foreign deposits was introduced in 1975. Between 1971 and 1975, the Swiss franc strengthened significantly against the dollar, dampening the Swiss economy, mainly through declining exports. The real exchange rate of the Swiss franc rose significantly in 1978 as well; the Swiss National Bank was compelled to purchase foreign exchange on a large scale and short-term interest rates fell to zero and turned slightly negative early in 1979 (Kugler; Rich, 2001). Negative interest rates did not discourage the inflow of foreign capital, only the intervention of the central bank and the easing of monetary policy helped. Experience during this period proved the inefficiency of negative interest rates in a country with a strong currency.

The Swiss National Bank returned to the negative interest rate monetary policy

in 2014. However, the first central bank in the world that introduced a negative interest rate after 2008 recession was the Swedish central bank, from 2009 to 2010, and then again from 2015 to 2019. The European Central Bank (ECB) joined this policy in 2014 and has continued implementing it until today (2021). Its decision related to the whole euro area. The Danish central bank applied the negative interest rate policy from 2012 to 2014, and again from 2014 until now (2021). The central bank in Norway has not explicitly adopted the NIRP, but the central bank lowered its reserve rate below zero in 2015. The central bank of Japan, which had long battled deflation in the past, decided to join the NIRP for the first time in 2016 with a negative interest rate (-0.1%) on current accounts that financial institutions held at the central bank, and in 2016, also the Hungarian central bank and the central bank of Bosnia and Herzegovina joined the NIRP (Angrick and Nemoto, 2017; Kuroda, 2016).

In June 2014, the ECB introduced negative interest rates for the first time. The ECB applied the negative rate only to its deposit rate called “Deposit Facility Rate” (DFR), through which the ECB pays short-term overnight deposits to commercial banks. The DFR climbed gradually from -0.10% with effect from June 2014 to -0.50% in September 2019. The ECB changed two other key interest rates – the main refinancing operations (MROs) rate and the rate on the marginal lending facility. The MRO rate defines the cost at which banks can borrow from the central bank for a period of one week. If banks need money overnight, they can borrow from the marginal lending facility at a higher rate. Since March 2019, the fixed interest rate has fallen to zero and has remained at zero so far, with the marginal lending facility set at a quarter of a percentage point since March 2019. The purpose of these steps was to prevent commercial banks from depositing excess liquidity with the central bank and to continue lending money to private economic entities. A negative interest rate is thus a form of tax or sanction for banks so that they no longer offer excess liquidity in the form of loans. The NIRP is thus a monetary policy, pursued by central banks to stimulate inflation and achieve its only goal of a gradually rising price level, according to about the 2% inflation target.

This argument seems logical, but negative interest rates divide economists into supporters or opponents. Alternatively, there may be those who accept negative

interest rates as an extreme, or as a short-term solution. And some economists only support “effective negative interest rates” on a certain “effective” level. Some economists emphasize that for the efficiency assessment, a distinction should be made between temporarily low interest rates and chronically low interest rates (Ruchir and Kimball, 2015).

2 SUPPORTERS OF NEGATIVE INTEREST RATES

The proponents of negative interest rates, mainly economists in central banks, justify the NIRP to fulfil the inflation target. This unconventional policy should help increase the growth of investment, output, and employment via the well-known Keynesian transmission mechanism, i.e., through lowered costs of lending. Since mainly investment and possibly also consumption financed in the capital market supports the growth of aggregate demand, this growth supports the growth of product and average price level. The arguments for keeping negative interest rates are to demonstrate the effect of falling interest rates on the growth of investment activity. Thus, the assumption is that firms will increase their fixed investment via this credit (lending) channel.

There is an ongoing debate about how this channel works and how the NIRP supports the economy, and whether firms will increase their fixed investment. It was found that mainly stable, sound banks in an economy can enhance the transmission mechanism because these banks are able to stimulate firms’ investment indirectly when they are able to pass negative interest rates onto their corporate depositors without experiencing a contraction in funding (Altavilla et al., 2020). Further experience has confirmed that lending rates have tended to fall more in banking systems with a higher proportion of variable rate loans, shorter loan maturities, or higher competition among commercial banks (Vinals et al., 2016).

The development of the DFR, the level of investment activity by institutional sectors, and the growth rate of real GDP in the eurozone is shown in Table 1. As can be seen in Table 1 and Graph 1, the negative interest rates since 2014 in the eurozone have really been stimulating the growth of companies’ investment activity. The share of investment activity of companies in 2019 (13.88%) exceeded the value from 2008, from the period before the economic recession (12.74%). The growth of household investment was not as significant as the growth of firms’

investment. For firms there was a vision of an optimistic scenario of the economic development.

Tab. 1 » Investment activity as a share of GDP by institutional sectors, real GDP growth rate and deposit facility rate in the eurozone during 2008–2019

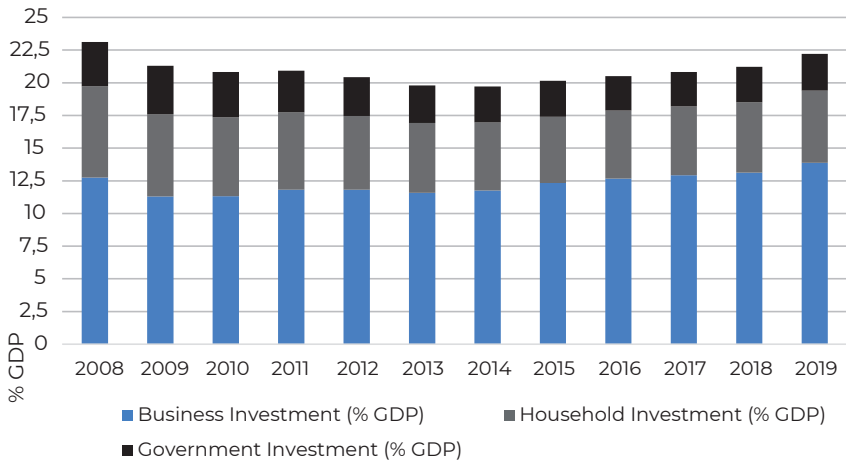
Eurozone: 19 countries/ Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
ECB: Deposit Facility (%)	Jul. 3.25 Oct. 2.75 Oct. 3.25 Nov. 2.75 Dec. 2.00	Jan. 0.10 Mar. 0.50 Apr. 0.25	0.25	Apr. 0.50 Jul. 0.75 Nov. 0.50 Dec. 0.25	Jul. 0.00	0.00	Jun. -0.10 Sept. -0.20	Dec. -0.30	Mar. -0.40	-0.40	-0.40	Sept. -0.50	
Total In- vestment (% of GDP)	23.12	21.29	20.82	20.91	20.42	19.79	19.72	20.14	20.50	20.82	21.22	22.21	
Business Investment (% of GDP)	12.74	11.31	11.33	11.82	11.81	11.58	11.75	12.34	12.67	12.92	13.12	13.88	
Household Investment (% of GDP)	6.99	6.29	6.03	5.92	5.65	5.34	5.22	5.06	5.20	5.27	5.39	5.52	
Govern- ment Investment (% of GDP)	3.39	3.70	3.46	3.18	2.96	2.87	2.75	2.75	2.63	2.64	2.72	2.81	
Real GDP Growth (Eu- rozone, %)	0.4	-4.5	2.1	1.7	-0.9	-0.2	1.4	2.1	1.9	2.6	1.9	1.3	

Source of data: Eurostat, ECB; author's processing

Graph 1 illustrates more clearly the development of investment by institutional sectors in the eurozone during 2008–2019. The focus should be on the period before and after the NIRP introduction in 2014. As can be seen in the Graph 1, since 2015 the business (corporate) investment had been growing (first column from the bottom), while household and government investment

(the second and third column) remained roughly at the same level. And because of the growth of business investment, the total investment had also been growing (until the outbreak of the coronavirus crisis in 2020). According to the Table 1 the GDP growth rate of the euro area increased after the introduction of NIRP with a peak in 2017 that was 2.6%.

Graph 1 » The development of business investment, household investment and government investment in the eurozone during 2008–2019 (% of GDP)



Source of data: Eurostat; author's processing

The ECB highlights the positive effects when considering the compensating effects of other policy innovations, such as the two-tier system and targeted longer-term refinancing operations. Thus, central banks are looking for an “effective interest rate” according to their tiered system when they exempt a portion of commercial bank balances held at the central bank from the negative rate, called the “tiering” system (Barr et. al., 2016). This means new tools are being sought to reduce the impact on banks’ profitability – this impact will be discussed in the next chapter. In addition, some authors suggested various tools to overcome the zero bound just before 2004, for example, a “carry tax” on money, open market operations in long bonds, or monetary transfers (Goodfriend, 2000; Buiter and Panigirtzoglou, 2003). According to economists from the Norges Bank (the Nor-

way central bank), the central bank can use two ways to overcome the ZLB: “*Central bank can achieve negative short-term money market rates in two ways, either by setting a negative policy rate or, in some situations, supplying the banking system with excess central bank reserves, while the interest rate on the central bank’s marginal deposit facility is negative.*” (Bernhardsen and Lund, 2015, p. 2)

Some proponents of negative interest rates point out that this policy strengthened the incentives of investors to rebalance their portfolios towards illiquid longer-dated securities to preserve banks’ profitability. Some authors have found that high-deposit banks tend to increase their holdings of high-yield securities in an environment of negative interest rates policy (Wu and Xia, 2020). And, according to an analysis carried out in Italy, these moves were proved and, moreover, it was shown that previous interest rate cuts just above the ZLB did not induce these shifts and consequently did not cause a similar portfolio rebalancing (Bottero et al., 2019).

Some economists defend negative interest rates because negative interest rates can also help weaken a country’s currency by making it a less attractive investment than other currencies. A weakened domestic currency (its depreciation) because of the capital outflow causes a competitive advantage in export. A weakened currency will support exporters, particularly when the volume effect of the depreciation prevails. It means when there is an increase in the volume of exported goods that will improve the trade balance and consequently enhance the aggregate expenditures, GDP, employment and will also help meet the objectives of the monetary authority (the price level target). This example can be found in the Swiss economy. The goal of its monetary authority (the Swiss National Bank) was to discourage capital inflows and thereby counter the monetary tightening due to the Swiss franc’s appreciation.

To sum up, there are three main channels and arguments for introducing and analysing the effects of negative interest rates: the credit (lending) channel allowing inflation expectations to rise and boosting the aggregate demand and product, the exchange rate channel when the domestic currency is weakened, and the portfolio rebalancing channel when high-yield securities can in turn support investment and then product. It is assumed by supporters that these channels work with the change of both positive and negative interest rates setting. “*The experience so far suggests that negative policy rates are transmitted through to money market rates in much the same way as positive rates are and it also appears that they*

are transmitted to longer-maturity and higher-risk rates, although this assessment is clouded by the impact of complementary monetary policy measures.” (Bech and Malkhozov, 2016, p. 31)

3 OPPONENTS OF NEGATIVE INTEREST RATES

According to economic theory, the existence of financial market and indirect financing depends on the setting of positive interest rates. In the capital market, savings are turned into necessary investments. Savings are held by households and households are motivated by a positive interest rate to hoard loanable funds. Interest is defined as a reward for deferring current consumption in favour of future consumption plus interest. Therefore, negative interest rates seem to be an absurdity, mainly if they are set by commercial banks for interest on deposits to compensate for their eventual losses. Thus, negative interest rates can disrupt normal decision-making about interest rates.

One very common con argument against the NIRP often emphasized by its opponents is the trade-off between effective monetary transmission and a bank's profitability. A bank's incomes can be divided into three groups: net interest incomes, non-interest incomes, and banks provisions. A lot of analyses can be found into how the NIRP affects banks' net interest margins and equity. Related to this, some commercial banks decided to pass the costs on to clients with large deposits and significant transaction costs of closing an account. For example, the third largest Danish bank, the Jyske Bank, set the interest on ten-year mortgages at -0.5% per annum and charged a negative interest rate on large deposits (Campbell and Levring, 2016). Opponents point to the increase in a bank's non-interest incomes (higher fees, commissions, provisions) providing the bank's net interest margins have decreased. In Sweden, the effect of the NIRP on the lending channel was examined and authors documented that the negative central bank rates had not been transmitted to aggregate deposit rates that remained stuck at levels close to zero (Eggertsson et al., 2019). It also depends on the bank's ratio of overnight deposits to total assets, and the higher this rate is, the greater the tendency to impose higher interest rates on, for example, mortgages, and the pass-through on economic operators is not so strong (Amzallag et al., 2019). Moreover, not all clients will pay for having their money stored in a bank; they would quickly

empty their accounts, which can be identified as the first step towards the collapse of the banking system. However, in Sweden there is an issue of using exclusively non-cash payments and economists try to find the effective lower bound. *“The effective lower bound will therefore depend on how costly it is to manage cash and by how much the monetary policy impact decreases at different rate levels. In addition, risks to the financial system increase, the lower the CB’s repo rate goes.”* (Alsterlind et al., 2015, p. 1)

In Sweden and Denmark, they introduced negative interest rates at the earliest after the recent recession of 2008 and therefore have the longest experience. According to research that includes annual balance sheet data from more than 5,000 banks in the EU and Japan between 2010 and 2016, commercial banks experienced significant declines in net interest income, and they mitigated the losses from net interest income by generating significant increases in net non-interest income and provisions. Commercial banks as business entities try to find other sources of income. In addition, the impact of the NIRP on the net interest incomes of commercial banks depends on business cycle conditions and bank-specific characteristics such as size, liquidity, capitalization, and incidence of market funding (Lopez et al., 2018; Borio et al., 2015).

In a further analysis across banks in different countries, the authors found that after the introduction of negative interest rates, the volume of banks’ loans was weaker in countries where a policy of negative interest rates was introduced. Smaller banks, more dependent on retail deposit financing, less capitalized, whose business models were dependent on interest income, and which operated in more competitive markets, suffered the most (Molyneux et al., 2020).

Even before the recession caused by the current coronavirus, there was talk of macroeconomic policy options that were already exhausting their instruments before the advent of the next declining phase of the economic cycle. Some economists fear ECB’s extreme expansionary monetary policy can lead to an increasing money supply and rising inflation. The argument is that when ECB’s key interest rates fall more into the negative, this will lead to greater losses of commercial banks and the value of their equity will fall as the share prices of large banks will continue to decline. The loss will be felt by investors. In the future, significant interest rate cuts may outweigh the benefits from higher asset values and stronger

aggregate demand, so there is a point that further monetary accommodation may need to rely more on credit easing and an expansion of the ECB's balance sheet rather than substantial additional reductions in the interest rate policy (Jobst and Lin, 2016). Based on their surveys, some economists consider the NIRP as an inadequate tool to tackle stagnation and they rather prefer to use fiscal instruments or point out that the NIRP can act contractionary due to a negative effect on bank profits (Di Bucchianico, 2020; Eggertsson et al., 2017).

Negative interest rates also change the bankruptcy situation, when the borrower is unable to repay the principal and there are no warnings that the borrower is unable to repay the interest on the loan. The lender is the one taking the risk of loan default and now there is no bond where a less creditworthy borrower pays a higher interest rate. It seems there is a greater risk in the banking sector, although the borrowers pay some special fees instead of a higher interest. Moreover, many lending institutions have adopted tighter liquidity and capital standards since the recent global financial crisis and there is a dangerous interaction between this fact and the NIRP (Angrick and Nemoto, 2017).

Interest rates set by the central banks also impact the yield of bonds. There is an inverse relationship between setting interest rates and assets prices. Now economies are experiencing a problem with zero-yield bonds or negative-yielding bonds. It was previously inconceivable for central banks that bonds could have a negative yield, and so zero-yield bonds issued pose a significant difficulty. In Swedish economy, negative policy rates seem to have had a strong and immediate pass-through to bond market yields, according to the survey (Erikson and Vestin, 2019).

4 TWO OPPOSING VIEWS

Table 2 presents briefly the two contrasting views on the negative interest rate policy. The left side of the table contains the main objectives of central banks that decided for the negative interest rates and the three channels when advocating the NIRP. The right side of the table outlines the main arguments for and the three main risks of rejecting negative interest rates.

Tab. 2 » The opposing views of the NIRP

Defending the negative interest rate policy (NIRP)	Refusing the negative interest rate policy (NIRP)
<p>Objectives according to the central banks:</p> <ul style="list-style-type: none"> • price stability and anchoring inflation expectations (eurozone, Japan, Norway, Sweden) • reducing appreciation and deflationary pressures (Switzerland) • countering inflows and exchange rate pressures (Denmark) • price stability and countering exchange rate pressures (Hungary) • price stability and maintaining the exchange rate peg (Bulgaria, Bosnia and Herzegovina) 	<p>Historical context: during the history of economic thought, nominal interest rates have never been negative (until the last decade at some central banks). Negative interest rates distort the capital market and cause distortions in the banking sector. Many laws and regulations are based on the implicit assumption that interest rates cannot be negative. CB's negative interest rates can affect the profitability of commercial banks and the banks would pass on their losses to their clients (the NIRP can be inefficient or even contractionary).</p>
<p>Three main channels when advocating the NIRP:</p> <ul style="list-style-type: none"> - the credit channel - the exchange rate channel - the portfolio rebalancing channel 	<p>Three main risks when refusing NIRP:</p> <ul style="list-style-type: none"> - excessive indebtedness of economic entities - underestimation of risk (investing in riskier assets and financial instability) - overvalued long-maturity illiquid asset prices (asset price bubbles), zero-yield bonds

Source: IMF (objectives of CBs), author's processing

The arguments of the central banks to fulfil their objectives seem to be understandable and in line with macroeconomic theory. It must be added, though, that there is no consensus among all central banks. Whether this policy it is needed depends on the specific economic conditions of each economy or the eurozone. Mr. Haruhiko Kuroda, the Governor of the central bank of Japan (The Bank of Japan), stated during his speech when defending the NIRP: “*The Bank of Japan will do whatever we can to achieve the price stability target...*” when Japan had been tackling deflationary pressures in the past (Kuroda, 2016, p. 6). Other central banks, e.g., the U.S. Federal Reserve or the Czech National Bank, have been less keen or restrained to adopt the NIRP. The usefulness and efficiency of the NIRP differs across countries due to different institutional settings and bank-specific characteristics (such as liquidity, capitalisation, funding costs, risk, and income

diversification, etc., and business and financial cycle condition [Borio and Gambacorta, 2017]). For Japan or the eurozone this policy seems to be relatively efficient, while, for example, the US sees a lower efficiency, according to the banking models (Ulate, 2019).

CONCLUSION

Negative nominal interest rates have not been entirely new in the monetary sector in the past several years but appeared in the Swiss economy as early as the 1970s. In the Swiss economy they were used as a tool for preventing capital inflows. For a long time, this instrument had not been applied in economies. In the middle of the last decade, central banks in Europe or Japan decided to introduce negative interest rates to support their economies. When a monetary authority wants to support the economy, it provides a monetary expansion policy and lowers its key interest rates. But the rates had been systematically declining since the beginning of the 2008 recession, and the central banks soon encountered the “zero lower bound” (ZLB) during the bad times. And thus, they decided to provide another monetary stimulus and lower the rates into negative zone expecting the pass-through to the economic operators and their reactions.

A negative interest rate policy divides economists into two groups – supporters and opponents. Supporters of negative interest rates argue that enhanced investment activity is followed by an increase in aggregate demand, product, and employment. Indeed, private investment in the eurozone has been on a rising trend since 2015. However, the growth rate of real output in the eurozone has been rather stagnant since the introduction of negative interest rates and has been declining since 2018 and, unfortunately, in 2020 a pandemic broke out. Due to the coronavirus crisis, the ECB was forced to help otherwise – by buying €750 billion worth of securities that helped the economies immediately (ECB, 2020). Opponents of negative interest rates have a long-term focus and see the essence of markets’ functioning. When setting key interest rates, they see the limit at technical zero and in the choice of alternative economic policy instruments that do not disrupt the financial markets. The functioning of markets is more important to them, and economies may be given other stimulations to support employment and product growth in times of recession or stagnation.

To assess the choice of negative interest rates, it should be said that it belongs among unconventional policies in the market economies and if this choice is applied, it should be assessed whether the negative interest rates do more harm than good in the economy, and whether they are selected as a short-term or a long-term instrument. It is perceived nowadays that there is no homogeneous policy of negative interest rates across economies; conversely, there is relevant heterogeneity in the purpose, design, and operational specificities of negative interest rate policies, with significant consequences for capital market effectiveness, private sector funding conditions, and economic operators' expectations. Being aware of financial market failures, economies will gain experience in the future, and if negative interest rates are set again, it will be seen whether negative interest rates do more good or harm.

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Ing. Vendula Hynková, Ph.D.

AMBIS vysoká škola, a.s., Katedra ekonomie a managementu

Email: vendula.hynkova@ambis.cz