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The Coherence between Sovereign Wealth Funds and Fiscal and Monetary Policies: the Norwegian Case (2001-2017)

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Abstract

This article seeks the link between the macroeconomic challenges faced by oil exporting economies and the use of public policies meant to mitigate the harmful effects of the dependence on hydrocarbon exports through the study of the Norwegian case. The main goal is to determine to what extent the coordination between the Norwegian sovereign wealth fund and countercyclical fiscal and monetary policies contributed to the mitigation of economic cycles triggered out by oil price volatility between 2001 and 2017.

1. Introduction

After nearly three decades of generous fiscal spending due to increasing hydrocarbon revenues and a monetary policy based on fixed exchange rates with procyclical effects, the Norwegian authorities decided to implement a more coherent macroeconomic policy design in 2001. This was meant to avoid economic overheating during oil booms, create greater monetary policy autonomy and to save oil rents for future generations, while at

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the same allow to maintain the welfare state by transferring certain part of the oil revenue into the government budget.

Our hypothesis states that the performance of the sovereign wealth fund, known as Government Pension Fund Global (GPFG), and its coordination with fiscal and monetary policies led to a sustained and positive economic growth without major macroeconomic imbalances in Norway between 1990 and 2017, particularly during the last sixteen years - when the link between the GPFG and the government budget was established through the fiscal rule in conjunction with an inflation targeting monetary policy. Our methodology consists in a case study with statistical analysis of the major macroeconomic aggregates.

The papers' main conclusions are the following: i) the Norwegian economy has gone through many external shocks between 2001 and 2017, but showed sustained and positive growth rates in conjunction with healthy macroeconomic indicators; ii) the GPFG achieved a spectacular growth by saving oil incomes and also through its investments' financial returns; iii) apart from its role as a savings fund for the intergenerational distribution of resource rent, the GPFG has also acted as a stabilization fund during times of economic weakness; iv) monetary and fiscal policies have been strongly countercyclical during periods of economic weakness between 2002-2003, 2008-2009 and since 2015; acted jointly in a countercyclical mode throughout the economic upturns of 2004-2007 and 2010-2011; but procyclically between 2012 and 2014 due to the fiscal rule's flaws.

After this short introduction, the second section enumerates the macroeconomic challenges faced by oil exporting economies owing to volatile and unpredictable petroleum prices and the exhaustibility of this resource. The third section introduces the main features of the Norwegian GPFG, including its history, governance, investment strategy and financial performance. Then the fourth section offers a short review of the macroeconomic framework in Norway throughout the 80s and especially the 90s, as it was a crucial decade for changes. The fifth and sixth sections introduce the current design of monetary and fiscal policy separately and the link between both is presented in the seventh section. The eighth section provides a detailed study of the performance of monetary and fiscal policies together with the GPFG's performance between 2001 and

2017 to see if both policies were effectively countercyclical. Finally, the ninth section concludes.

2. Sovereign Wealth Funds and macroeconomic challenges in oil exporting countries

The oldest and biggest Sovereign Wealth Funds (SWF) were born as stabilization funds in economies that were heavily dependent on hydrocarbon exports (Balding, 2012). These countries face major hardships related to resource incomes: commodity prices are notoriously volatile, the value of oil reserves is hard to predict over the long-term and are finite. As a substantial part of fiscal revenues derive from oil activity, so is fiscal income and budget (Husain et al., 2008). SWFs can serve as crucial tools for combatting macroeconomic volatility, stabilizing fiscal revenue in conjunction with nominal exchange rate appreciation, and preventing loss of competitiveness –the so-called Dutch disease (DD)[2]. These funds save oil revenue during booms and spend during downturns in order to smooth economic cycles.

Additionally, resource rent accumulation in SWFs targets the problem of resource exhaustibility as well. It is a means of transforming a finite resource wealth into a permanent wealth comprised of diversified financial assets, according to Hartwick's rule (1977). Hence, the country can ensure that levels of public spending during the era of resource extraction can be sustained once the resource is exhausted, promoting intergenerational equity.

SWF require a mechanism of accumulation and withdrawal of money via fiscal rules. Accumulation rules can be formulated in various ways: i) transfer a fixed percentage of resource revenues; ii) a deviation from past averages of resource income; iii) a threshold oil price; iv) based on non-oil fiscal balance; v) a combination of the former ones[3]. As for the withdrawal rules, there are several options depending on the country's features and needs. Collier et al. (2009) introduce three mechanisms. The first one is the permanent-income approach, which takes into account all the resource wealth, whether exploited or still under the ground, and states that yearly spending should be equal to S=r*W (where S is spending, r is the fraction that is spent each year, and W the total resource wealth),

[2] Corden and Neary (1982), Gylfason (2001), Mulder (2006), Magud and Sosa (2010).
[3] For a full description of these rules, see Alsweilem et al. (2015).

even when the extraction has not fully begun or has finished. However, W is difficult to estimate, so the second approach, the so-called "bird-in-hand" criteria (Bjerkholt and Nicolescu, 2004), only considers the resource wealth that has already been extracted and its estimated future returns. Thus, all resource revenue is deposited in the SWF and only its annual real rate of return is spent. This is a rather conservative approach, suitable for developed economies with aging populations. However, for developing countries it could be preferable to opt for the third option, which allows increasing public spending in human and physical capital when the resource is discovered in order to increase the economy's non-resource productive base, which would generate economic growth even when the resource is depleted. Despite the establishment of many stabilization SWFs with their respective fiscal rules, there is still skepticism regarding their ability to moderate the growth of public spending and smooth cycles. The fundamental problem is that governments tend to interpret temporary shocks in commodity prices as permanent, which promotes excessive increases in fiscal spending during booms and halts investment and spending when busts occur (Alesina et al., 2008).

Apart from coordination with fiscal policy, cohesion with monetary policy is also crucial in oil exporting countries. As we will see later on, most of the major oil exporting counties stick to tightly fixed exchange rates by pegging their currencies to the USD. There are several reasons for choosing the USD as a monetary anchor: i) it allows an emerging economy with weak institutions to import the monetary policy of a relatively stable country; ii) the USD peg provides a credible and easy anchor for inflationary expectations, simplifies trade and financial transactions; iii) oil and gas, their main exports, are traded in USD, so linking their currency to it eliminates the apparent mismatch between the government's USD priced oil revenues and its local currency spending; iv) in case of a resource boom, the peg prevents nominal currency appreciation which would harm non-oil sectors' competitiveness, thus it is a measure to fight DD.

Nonetheless, this exchange rate policy bears a number of downsides[4]. The most obvious is the loss of monetary autonomy by importing the policy from a country with a completely different economic structure, the United States. In a context of open capital

[4] For a full review of exchange rate regime options for oil exporting countries, consult Lotfi-Heravi (2015).

markets, the dollar peg requires fixed exchange rate countries to follow US interest rate policy, which may not be adequate for local needs, and can turn monetary policy procyclical[5]. If there is a resource boom in conjunction with low US interest rates, oil exporting countries need to lower local interest rates in order to maintain the exchange rate, which would exacerbate the expansionary business cycle (Looney, 2008). Whereas, if oil prices fall and the USD stays strong, authorities cannot lower interest rates to boost their economies, but raise them because they need to keep the exchange rate, which aggravates the downturn. Moreover, the peg implies that oil exporter cannot defend against imported inflation from trading partners outside the US, such as Europe and Southeast Asia, and adjustments to the real exchange rate to a new equilibrium necessarily will happen via changes in domestic prices, a process that takes considerable time and leads to swings in real interest rates (Setser, 2007). Therefore, in the absence of monetary autonomy, fiscal policy becomes the sole stabilizer for oil exporters with fixed exchange rates.

There are oil exporters with developed institutions that opted for a floating exchange rate backed by an inflation targeting monetary policy, such as Norway. However, the lack of independent central banks, developed financial markets and technical knowledge for inflation monitoring, makes Gulf countries inadequate for adopting this sort of regime.

3. The Government Pension Fund Global (GPFG)

The Government Pension Fund Global formally belongs to the Norwegian Ministry of Finance and is the world's largest SWF in terms of assets under management (figure 1). Despite its name, the GPFG is not a public pension fund, but a stabilization and savings SWF to deal with the potential increase in pension expenses in a future context of resource depletion and aging population, so that a balanced public budget and intergenerational allocation of oil resources can be achieved. It lacks current pension liabilities and the link to the funding of future pension liabilities still has not been formally defined[6], as

[5] Applying the framework of the impossible trinity dilemma, a country can only choose two of the following economic goals: monetary independence, exchange rate stability and financial integration (Obstfeld et al, 2005).

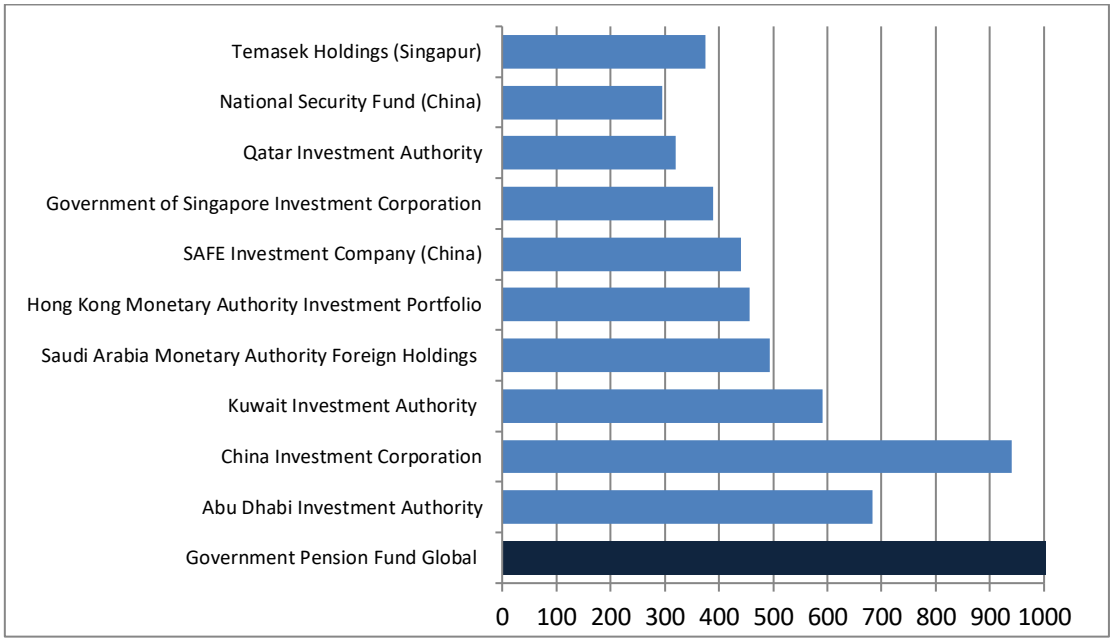
[6] Until 2006 the Fund was known as Government Petroleum Fund, but it was rebaptized as GPFG. By incorporating the word "pension", authorities tried to make the Fund more acceptable for the citizens, as a tool for their future wellbeing (Ekman, 2006).

nowadays retirement pensions are covered by the Norwegian Social Insurance Scheme (social security). Therefore, the GPFG has a longer investment horizon and higher risk tolerance at least in the short and medium term. Additionally, all of its investments are located outside of Norway, as the GPFG's investment mandates rule out domestic investments denominated in Norwegian krones (NOK), so the GPFG does not serve as a development fund or as a state-owned enterprise.

It was set up in 1990 after two decades of economic volatility caused by dependency on oil prices, as a means for severing oil revenues from public spending. The fund remained as a mere account at the Central Bank without funds until 1996, because the government needed oil revenue to cover budget deficits caused by a banking and housing crisis that hit Northern economies in the late 80s-early 90s. It was in 1996 when the Fund received its first allocation when the government had managed to generate fiscal surplus. Since 1996 the GPFG's total value has not stopped increasing, reaching 8.5 billion NOK at the end of 2017, which represents 280% of the Norwegian mainland GDP[7] (figure 2). When the GPFG was established, very few did imagine that the Fund would reach such increases, as oil prices were very low during the decade of the 90s. At the end of 2017 the GPFG possessed equity investments in 9,146 companies[8] and fixed income investments issued by 1.262 entities. The Fund's asset allocation was 66.6% equities, 2.6% unlisted real estate and 30.8% fixed income. The Fund's currency basket was comprised of 34 currencies (NBIM, 2018).

Figure 1: Largest SWFs in terms of assets under management, USD billion, June 2018

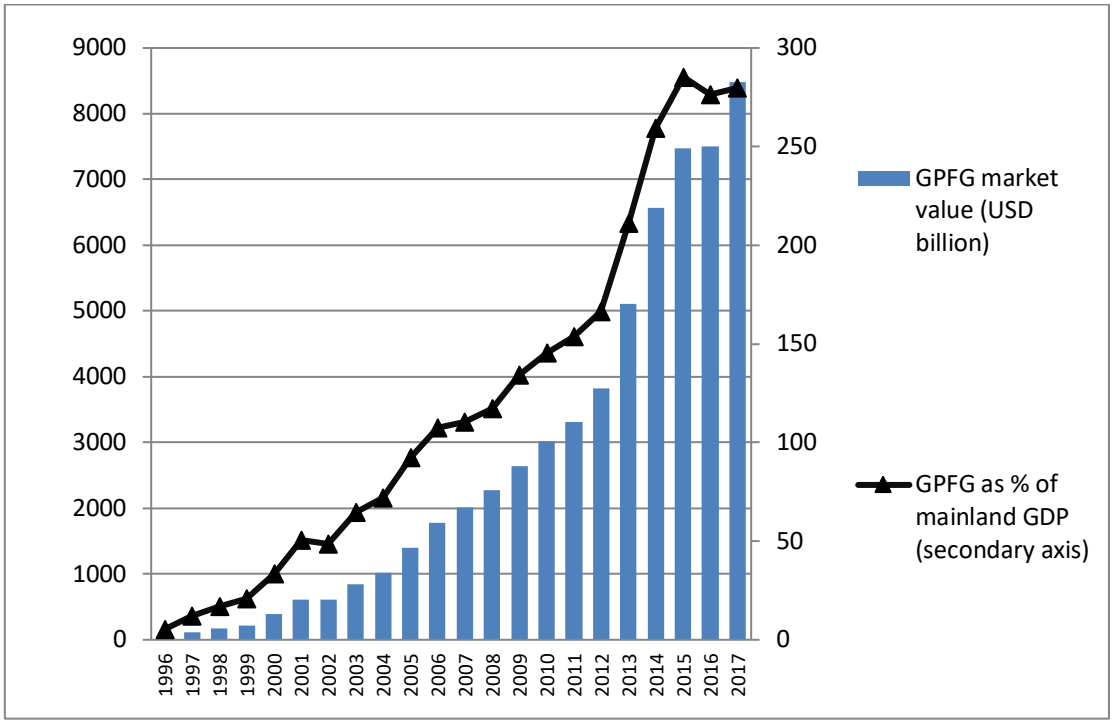
[7] The mainland GDP excludes offshore activities: oil and gas extraction and services related to it, pipeline transport of oil and gas, and maritime transport. However, the total GDP includes these activities.
[8] Nestlé, Apple, Roche, Novartis, Amazon, Shell, Alphabet or Microsoft are the companies where the GPFG carried out most of its equity investments during the last years (NBIM, 2018).



Source: Sovereign Wealth Fund Institute

The Norwegian Ministry of Finance is the formal owner of the GPFG, which is a deposit denominated in NOK in the Norwegian Central Bank (Norges Bank). The Ministry of Finance establishes the Fund's Investment Mandates, which include strategic asset allocation, benchmark indices, investment limits, investment risk and management costs (NBIM, 2017). The operational management of the GPFG's resources is the responsibility of Norges Bank Investment Management (NBIM), a department within Norges Bank that was created specifically with a view to managing of the Fund's assets in 1998.

Figure 2: GPFG total market value, NOK billion and as a percentage of the Norwegian mainland GDP, 1996-2017



Source: author's calculations based on NBIM and SSB

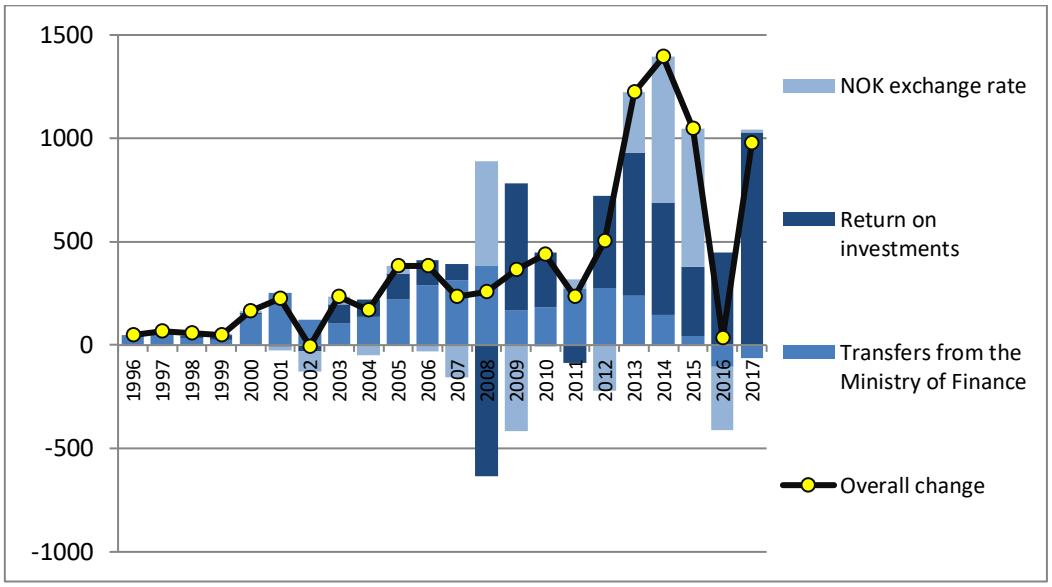
The GPFG experiences changes in its market value each year due to three factors: the return on the Fund's investments, the transfer of oil revenues to the Fund carried out by the Ministry of Finance, and the NOK's exchange rate. According to figure 3, at the beginning of the Fund's existence the factor that contributed the most to the Fund's increase were the transfers made by the Ministry of Finance. However, as time went by and the value of the Fund increased, return on the investments acquired a major role, for the better or worse.

While transfers from the Ministry were positive[9] and very sensitives to oil prices, returns were volatile and could acquire positive or negative signs –in some years, as in 2008 and 2011, they detracted value. Nevertheless, ever since the Fund's establishment, the overall contribution of investment returns was positive and very similar in value to the contribution of transfers from the Ministry. The NOK's exchange rate also affects the market value, due to the fact that all of the Fund's investments are denominated in foreign currencies. As a matter of fact, the exchange rate is a shock-absorbing factor in relation to oil prices: when oil prices plummet and hence transfers of oil income from the Ministry

[9] Except for 2016 and 2017.

are lower, the NOK depreciates against the rest of the currencies and thus the Fund's value in NOK increases, just as in 2008 and between 2014-2015. During years of oil boom it is the other way around: transfers from the Ministry are thriving but the NOK appreciates and detracts from the Fund's market value, as was the case between 2002-2007, 2009-2010 and 2012. The annual net real return on the Fund[10] since 1998 January until December 2017 was 4.16% (NBIM, 2018), a few percentage points above the Norwegian authorities' target, which is 4%.

Figure 3: Annual change in the GPFG's market value, NOK billion, 1996-2017



Source: NBIM

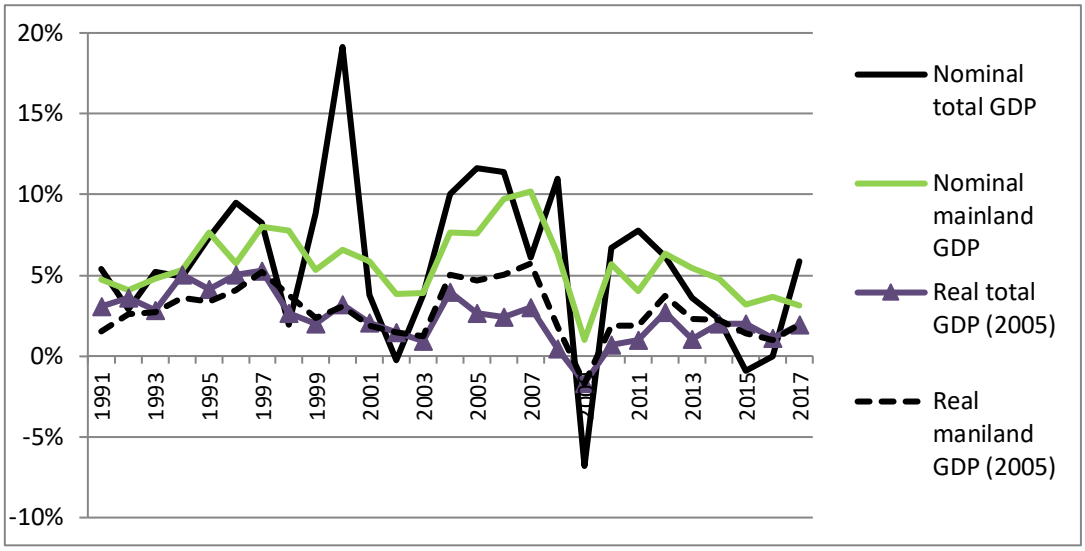
After introducing the GPFG's main features as a SWF and its performance as an investor, the next sections will link it to fiscal and monetary policies carried out in Norway between 1990 and 2017, focusing on the period between 2001 and 2017, when the fiscal rule that ties the GPFG to the government budget and the inflation targeting monetary policy were set up.

[10] Return after subtracting inflation and management costs.

4. The 90s: crucial for policy change

The decade of the 90s began with uncertainties regarding the international economic context, low oil prices after the 1986 plunge, worsening banking problems, increasing unemployment rates and a procyclical monetary policy. After the speculative attacks against European currencies[11], the Norwegian economy went through a recovery since the second half of 1993 and enjoyed an expansionary phase until 1997, sustained by internal factors. Economic growth was positive during the 90s, in terms of total GDP growth, as well as mainland GDP growth, both in nominal and real terms (figure 4), but there was also a rise in unemployment, although the increase was less sever in comparison with the Scandinavian neighbors (figure 5).

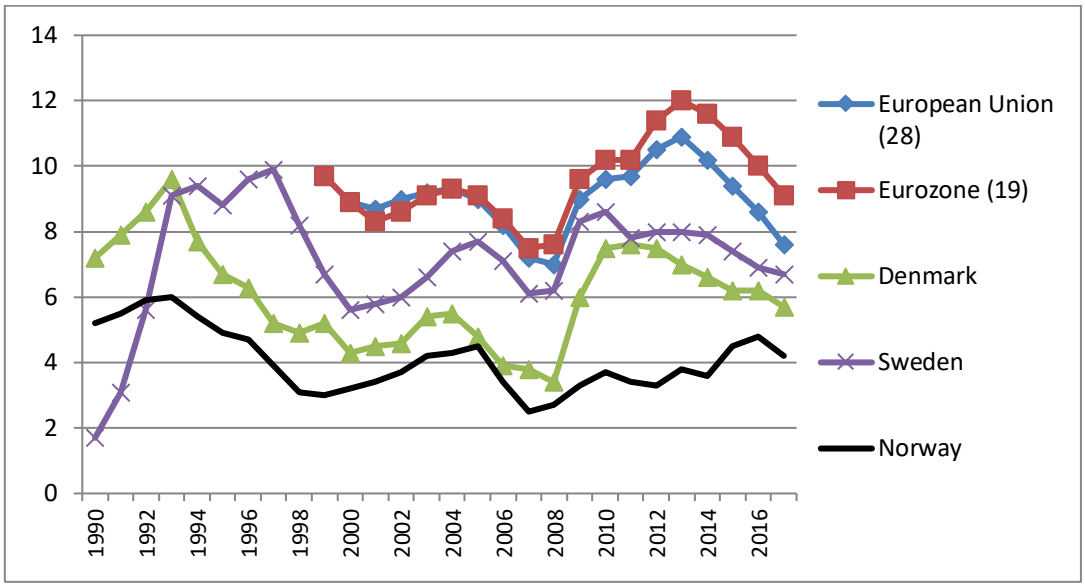
Figure 4: Growth rates of nominal total GDP, real total GDP, nominal mainland GDP and real mainland GDP at 2005 prices, in %, 1991-2017



Source: author's calculations based on SSB

[11] For more details about the crisis of the European Monetary System, see Vázquez Vicente (2007) and Bjønnes et al. (2014).

Figure 5: Unemployment rate, in %, 1990-2017



Source: Eurostat

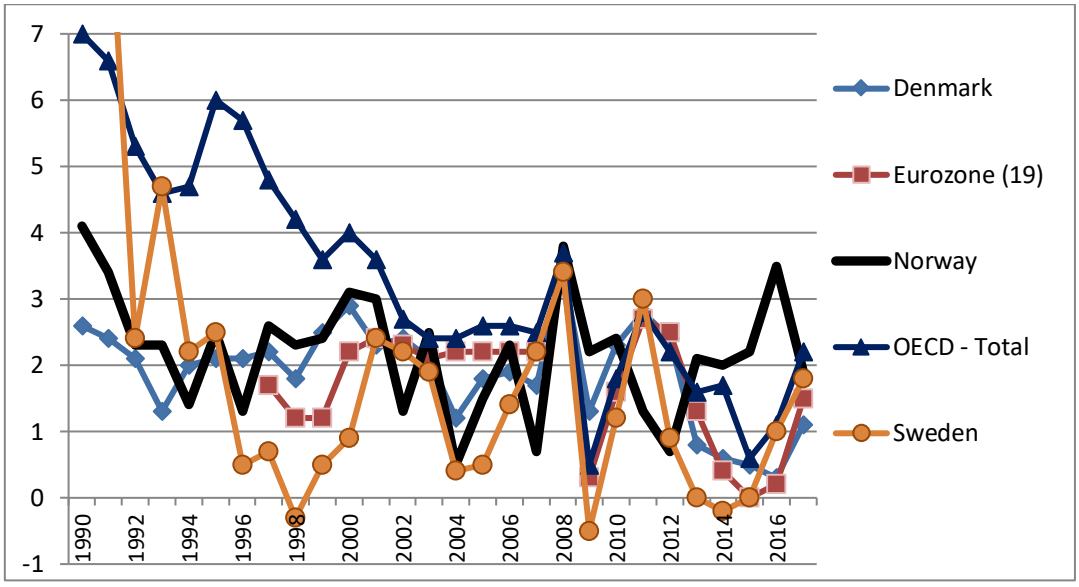
Owing to the economic difficulties and structural problems that Norway suffered since the 1986 oil price plunge, the Norwegian Parliament requested a set of policy recommendations from the "Employment Commission" in order to deal with a hostile economic context. The Commission presented the White Paper no. 26 to the Parliament in 1992, which paved the way for the so-called "Solidarity Alternative", a combination of monetary, fiscal and incomes policies which bore a resemblance to the postwar order (Mjøset and Cappelen, 2011). Thus, fiscal policy was in charge of stabilizing economic cycles and fostering employment, a clearly Keynesian feature. As for monetary policy, its task was keeping the NOK's exchange rate as stable as possible against the currencies of the major European trading partners in order to maintain inflation rates close to the European average. Additionally, incomes policy pursued wage moderation and solidarity with a view to preventing high inflation, loss of competitiveness in international markets and unequal income distribution, which increased during the 80s (Mjøset, 1989).

Between 1993 and 1996 economic growth was based on solid pillars, consisting in falling unemployment rates without financial and lower government imbalances. The Solidarity Alternative was very successful until 1996, when government expenses began to increase at a higher pace in a context of economic bonanza. Wages were accelerating more than

productivity as unemployment hit minimum rates and there were labor shortages in several sectors (figure 5) (SSB, 1999).

The effects of the Asian, Russian and Brazilian crises began to be noticed in 1998 through the oil price fall and the resulting instability in foreign exchange markets, which contributed to a procyclical monetary policy anew, as throughout the end of the 80s and beginning of the 90s. Despite the oil price decrease, the GDP growth rate was above zero, the unemployment rate remained close to 3% and the inflation rate continued under control (figure 6). Real wages kept increasing above productivity in 1998 owing to a tight labor market (SSB, 1998). In this economic framework the policy division set by the Solidarity Alternative no longer worked, both monetary policy and incomes policy operated in a procyclical way and fiscal policy was the only one in charge of stabilizing the economic cycle . Furthermore, intense growth rates registered in the GPFG's market value through 1999 and 2000 after the oil price recovery generated pressures in favor of higher fiscal expenses so that current generations could also benefit from oil windfalls. Faced with such demands, the government in conjunction with Norges Bank decided to modify the way macroeconomic policy coordination was formulated in 2001, a policy shift that will be presented in detail throughout the following sections of this article.

Figure 6: CPI based interannual inflation rates, in %, 1990-2017



Source: OECD

5. Monetary policy

From 1978 until 1990 the NOK was fixed to a basket made up of Norway's main trading partners' currencies, although authorities often resorted to surprise devaluations when employer and employee organizations set wage increases that surpassed productivity hikes and thus damaged the competitiveness of local exports in global markets. However, these devaluations no longer surprised economic agents during the 80s, they could not stop inflation and posed serious credibility issues for monetary policy (Gylfason, 1990). In 1985 Norges Bank acquired its legal independence from the government through the Act of 24 May 1985 (Norges Bank, 2016) and monetary policy became responsible of drastically reducing the nearly two digit inflation rates and restoring the financial credibility of the country in international markets. This strategy demanded substantial interest rate hikes above the European average rates, which damaged the Norwegian economy in the midst of a recession caused by low oil prices and the burst of the local housing market bubble. It was the first sign of monetary policy procyclicality, which constantly reemerged during the 90s, up to 1999.

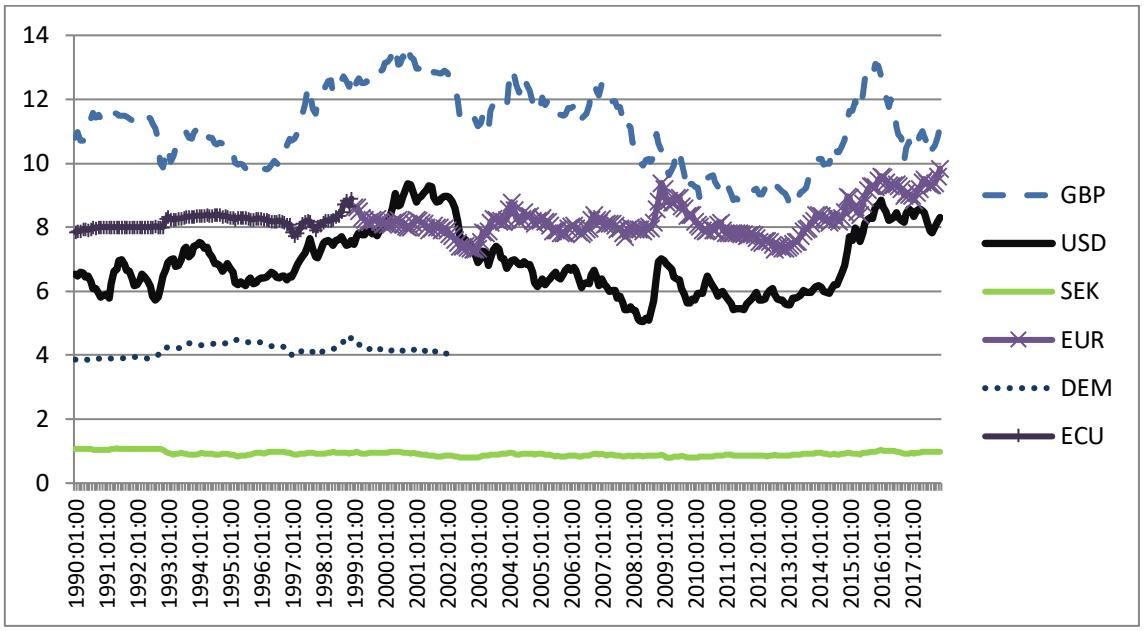
In 1990 the NOK was pegged to the ECU via the European Monetary System (EMS), an anchor shared by Sweden and Finland as well. The Norwegian authorities believed that the adherence to the EMS would provide higher exchange rate stability and thus interest rates could be reduced (Kleivset, 2012). Nonetheless, the decision backfired against Norway and other countries when the Bundesbank raised interest rates in 1990 after the inflationary effects triggered out by the German reunification. It meant importing the monetary policy of an oil importer overheated by a costly reunification such as Germany[12], while Norway was suffering from economic weakness. In order to keep the NOK's peg, Norges Bank needed to raise the key policy rate.

Norges Bank decided to let the NOK float freely in December 1992 as it was unable to counter the currency's value loss despite selling foreign currency and interest rate hikes above 10 percentage points (figures 7 and 8), which harmed local investment, consumption and the export sector's competitiveness. The NOK's value fell immediately

[12] The German mark had the highest weight (32%) in the ECU's currency basket. By observing figure 7, it is clear that the NOK's parity remained stable between 191 and July 1992, against the ECU as well as the German mark.

after the free float was announced (figure 7). The floating exchange regime was meant to be a temporary measure until speculative attacks against the European currencies were over and economic growth was back, the Ministry of Finance's purpose was to return to a fixed exchange regime as before.

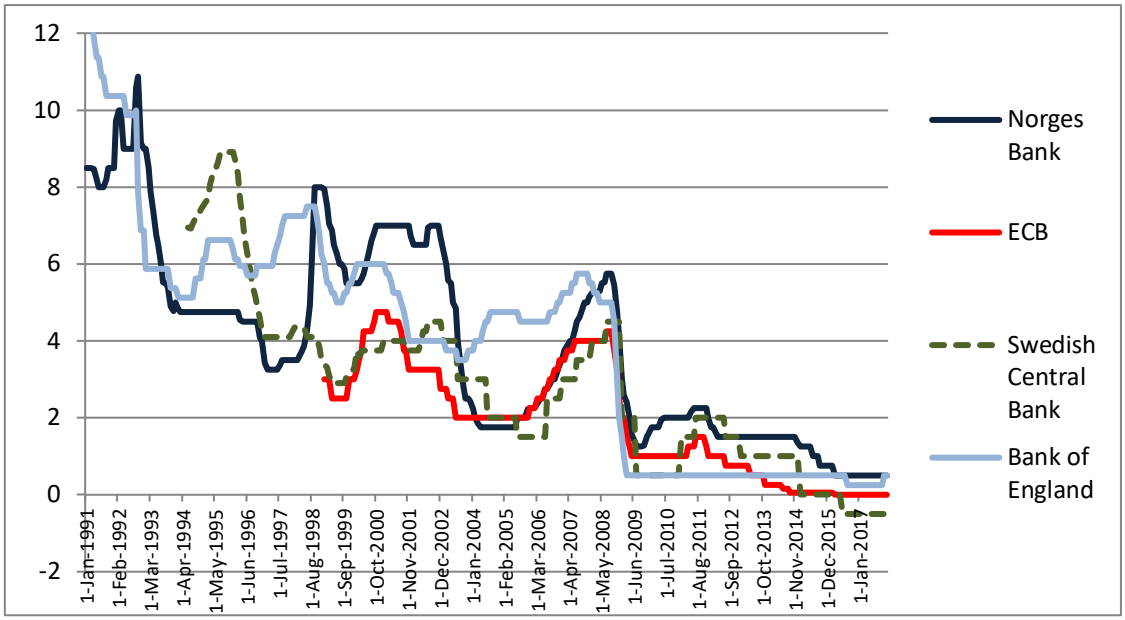
Figure 7: Monthly NOK exchange rates against several currencies, in NOK per foreign currency[13], January 1990-December 2017



Source: Norges Bank. Note: GBP stands for British pound, USD for US dollar, SEK for Swedish krone, EUR for euro, DEM for German mark and ECU for European Currency Unit.

[13] Note that an increase of the exchange rate represents a depreciation of the NOK and a decrease an appreciation.

Figure 8: Key policy rates of Norges Bank, the European Central Bank (ECB), the Swedish Central Bank and the Bank of England, in %, January 1991-December 2017



Source: Norges Bank, ECB, Swedish Central Bank and Bank of England

It might seem surprising that a small and open country that depends on large oil exports had defended fixed exchange rates when floating rates would have absorbed terms of trade shocks in a better way, especially those related to oil price fluctuations. But Norway, as well as Sweden and Denmark, firmly opted for fixed rates after the fall of the Bretton Woods regime because of the Scandinavian system of wage formation, known as *frontfagsmodellen*, where the export sector sets wage increases for the rest of the industries. Each two years the confederation of enterprises and of labor unions decided wage increases through collective bargaining in a way that those increases would not undermine the export sector's competitiveness in global markets. Nonetheless, if wage increases ended up too high, the authorities could resort to currency devaluations in order the offset the loss of international competitiveness (Gylfason, 1990; Wallerstein and Golden, 2000; Steigum and Thøgersen, 2013).

At the beginning of 1994 the speculative attacks against the European currencies ceased and the Norwegian economy started an expansionary cycle in line with the rest of the European countries. The Ministry of Finance decided to return to fixed exchange rates

believing that price stability could be achieved by pegging the NOK to a basket made up by the currencies of European countries, such as Germany or France, whose central banks were pursuing inflation stability after having signed the Maastricht Treaty (Gjedrem, 1999; Skånland, 1999). Thas is to say that monetary policy was imported again from countries with credible central banks. There was no longer a specific currency or currency basket that served as an anchor, nor fluctuation bands but by observing figure 8 it seems fair to state that the anchor continued to be the ECU with the same parity as at the beginning of the 90s, but with wider fluctuation bands. This exchange rate policy was embedded in the Solidarity Alternative and policy coordination operated smoothly between 1994 and 1995, but in 1996 the symptoms of economic overheating became obvious, such as private consumption and wage hikes, fiscal expansion and gradual loss of competitiveness. The logical move would have been a tighter monetary policy through interest rises, but the Bundesbank cut its key policy rate as the German economy was slowing, so Norges Bank had to do the same since September 1996 in order to keep the peg. Thus, monetary policy became procyclical again. Despite lower interest rates and Norges Bank's interventions in foreign exchange markets, the NOK kept getting stronger in the first half of 1997 due to the oil price increase.

The situation took a turn since July 1997 with the Asian crisis and the subsequent fall in oil prices and Norges Bank had to raise interest rates to stop the NOK's depreciation. Between March and August 1998 the Norwegian central bank doubled the key policy rate (figure 8), although investors kept fleeing to safe Western countries such as Germany, Switzerland or the US after the Russian and Brazilian crises. Norges Bank kept selling foreign currencies between August and December 1998 to the detriment of its international reserves, but the NOK was getting weaker against the ECU, USD and GBP (figure 8). The depreciating trend was over in December 1998 as oil prices started to recover, but Norges Bank's policy officers acknowledged that the fixed exchange regime was not sustainable, particularly because the ECU was displaced by the euro in 1999. In January 1999 Norges Bank's new governor, Svein Gjedrem (1999), announced that the only way to maintain a stable exchange rate in the long run was by reducing inflation rates to those of the Eurozone and Sweden, which were lower than the Norwegian ones between 1997 and 2000 (figure 6), and added that Norges Bank's persistent interventions in foreign exchange markets were no longer sustainable.

As a matter of fact, between January 1999 and February 2001 monetary policy underwent a transitory period towards inflation targeting and the central bank's goal was keeping local inflation rates in line with the Eurozone's average, that is to say, around 2%, while allowing higher exchange rate volatility. During 1999 inflation registered 2.3%, a relatively low rate which was still above the Eurozone's average. However, in 2000 Norwegian prices increased above 3% and Norges Bank responded by raising interest rates despite the fact that it led to a stronger NOK: that year Norges Bank started acting as an inflation targeting central bank, without worrying that much about exchange rate fluctuations.

The formalization of inflation targeting took place in March 2001 through the Royal Decree of 29 March 2001. The new strategy for setting the key policy rate was inspired by the frameworks of the Bank of England and the Swedish Central Bank, and the positive experiences of other countries that had implemented this kind of monetary policy throughout the 90s (Svensson, 1997; Mishkin and Schmidt-Hebbel, 2001).

The interannual inflation target was set at 2.5% with fluctuation bands of ±1 percentage points, which was 0.5 percentage points higher than the European Central Bank's or the Swedish Central Bank's target, and was due to the fact that Norway possess large oil exports which lead to potential leaks of oil money into the mainland economy, generating price and wage increases (Norges Bank, 2017). Moreover, the target was almost identical to the average inflation of 2.4% recorded throughout the decade of the 90s[14]. However, the regulation states that temporary factors, such as changes in interest rates, taxes and external shocks should not be taken into account and two complementary price indexes besides the conventional CPI are used. The first one is the CPI-ATE, the CPI adjusted for tax changes and excluding energy products, which measures core inflation since it was first calculated in 2001. The second one is the CPIXE, the CPI adjusted for tax changes and excluding temporary changes in energy prices and began to be calculated since 2007. As for the policy's time horizon, the inflation target was first supposed to be achieved in 2 years, then the time horizon was widened to 1-3 years in 2004, but since 2007 Norges

[14] The numerical target was lowered to 2% in February 2018, bringing it in line with other Western central banks (Norges Bank. 2018b). The decision reflects Norway's evolution from an economy heavily reliant on oil to one that's trying to become less dependent on fossil fuels. But the change also coincides with a global struggle to revive inflation after years of record monetary policy stimulus.

Bank only refers to "the aim of stabilizing inflation around the target in the medium term" (Norges Bank, 2018a).

Nevertheless, the reference to exchange rate stabilization still prevails and coordination with fiscal policy is also present. Norges Bank sets the key policy rate with a view to avoiding a strong appreciation and maintains the right to intervene in foreign exchange markets by buying and selling currencies if the NOK's value substantially diverts from the rate that would guarantee the inflation target.

The feature deemed to be relevant for our analysis is the monetary policy's flexibility, meaning that it is not only focused on controlling prices, but also on the exchange rate and the economic activity around its natural growth rate or on fostering employment. Furthermore, inflation can fluctuate between an upper band of +1 percentage point (3.5%) and a lower band of -1 percentage point (1.5%) around the desired numerical target, which allows for symmetrical deviations. Therefore, the Norwegian monetary policy is much more flexible than that of the European Central Bank (ECB), which states that "the ECB aims at inflation rates of below, but close to, 2% over the medium term", without mentioning fluctuation bands, nor economic growth, nor employment (ECB, 2018).

6. Fiscal policy

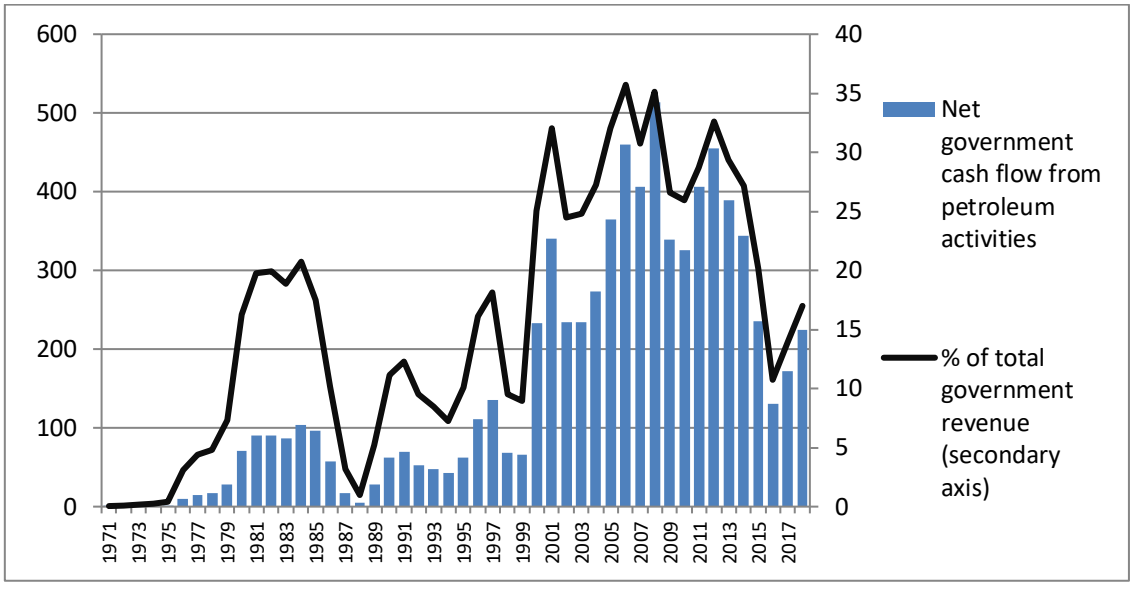
The State has a major role in the Norwegian economy: in 2017 general government income represented 54% of GDP, almost 10 percentage points above the European Union's (EU) average, and government expenses represented 51% in terms of GDP (OECD, 2018). Out of all government income, 17% came directly from the oil sector, although this figure was above 30% during oil booms, a fact that portrays this sector's importance for the Norwegian state (figure 9).

Oil extraction began in 1971 and despite the slow increase in physical volumes throughout the 70s, the oil crisis abruptly increased the oil output's market value. At the beginning of the oil era both the government and social agents were worried about the potential effect that this new activity could entail for the rest of the economy, especially for fishing due to environmental reasons and for the non-oil export sectors by a loss of competitiveness through the DD. Report no 25 (1973-74) to the Norwegian Parliament asked for a moderate oil extraction, for a gradual inflow of oil rents so that they would

not deindustrialize existing local industries, and for the use of oil rents to build a better society. It also mentioned the intergenerational distribution of oil rents but without referring to a savings fund. However, the international crisis led to excessive fiscal expenditures, as well as public and external indebtedness (Noreng, 1980).

State oil revenues rocketed during the first years of the 80s due to high oil prices and the opening of several large oil fields (figure 9) and the economy entered in an expansionary phase. Nevertheless, the Conservative government of Kåre Willoch decided to apply tax cuts instead of using a countercyclical fiscal policy, and thus overheated the economy. After the 1986 elections, the newly elected Labour government had to use a tight fiscal (as well as monetary and incomes) policy to stop the overheated economy, but the boom suddenly turned into a decline in 1988 and fiscal policy had to become expansionary, which lead to fiscal deficits during the beginning of the 90s (figure 10).

Figure 9: Government net cash flow from petroleum activities, billion NOK (2018), and as % of total government revenue, 1971-2018*



Source: Norskpetroleum. *Note: 2018 figures are forecasts.

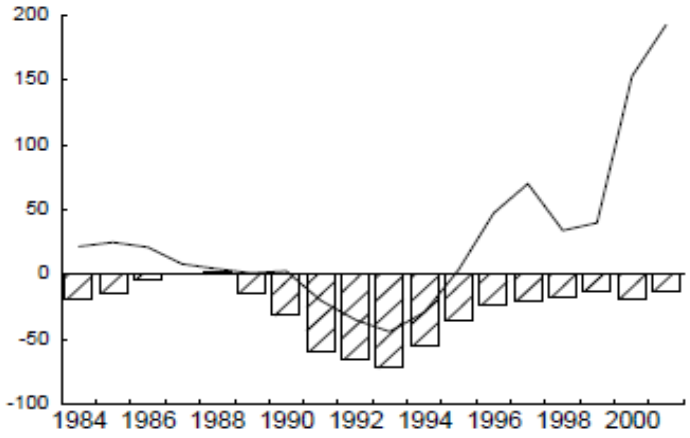
During the 80s there were debates on how to isolate the mainland economy from oil rents. In 1983 the Tempo Committee presented a report entitled "The Future of the Oil Activity", which advocated the separation of state oil income and fiscal expenditure by

applying a fiscal rule and investing the unused oil income in international markets through a savings fund. However, the Committee had limited confidence in the ability of the State to develop a savings fund and suggested that authorities put a threshold on the level of investments in the oil sector as previous production limits were useless.

After the unexpected oil price plunge in 1986 the Norwegian economy's exposure to the world oil market volatility became undeniable and in 1988 a new advisory group, named Steigum Committee, recommended the establishment of a financial fund nurtured by state oil rents to stabilize the economy and insisted anew on placing a maximum threshold on the oil sector's investment levels.

Finally it was the Minister of Finance of the Conservative government led by Jan P. Syse who announced the creation of the petroleum fund through the Government Petroleum Fund Act no. 36 of 22 June 1990. This act established the integration of the Government Petroleum Fund (later renamed as GPFG) into the budgetary process and stated that the Fund would only receive money from the government when there was a fiscal surplus. However, the government did not achieve a surplus until 1995 (figure 10), thus the Fund remained as the Ministry of Finance's mere account in Norges Bank without money.

Figure 10: Overall fiscal balance (line) and non-oil fiscal balance (bars), billion NOK, 1984-2001



Source: SSB

It was in May 1996 when the Fund received its first money transfer from the Ministry, as the fiscal balance showed a positive sign at the end of 1995. The government accounts improved thanks to the effect of the automatic stabilizers when the 90s expansionary cycle

began, the opening of new major oil and gas fields and record extraction from more mature fields, which generated increasing state oil revenues even in a context of low oil prices. However, no rule was defined related to oil income savings that could be channeled to the Fund or expenditures. Between 1993 and 1999 the government's deficit was gradually decreasing: the overall balance showed positive signs since 1995 and the non-oil deficit experienced reductions in absolute terms (figure 10) and relative to the mainland GDP – as the mainland GDP showed positive growth rates (figure 4).

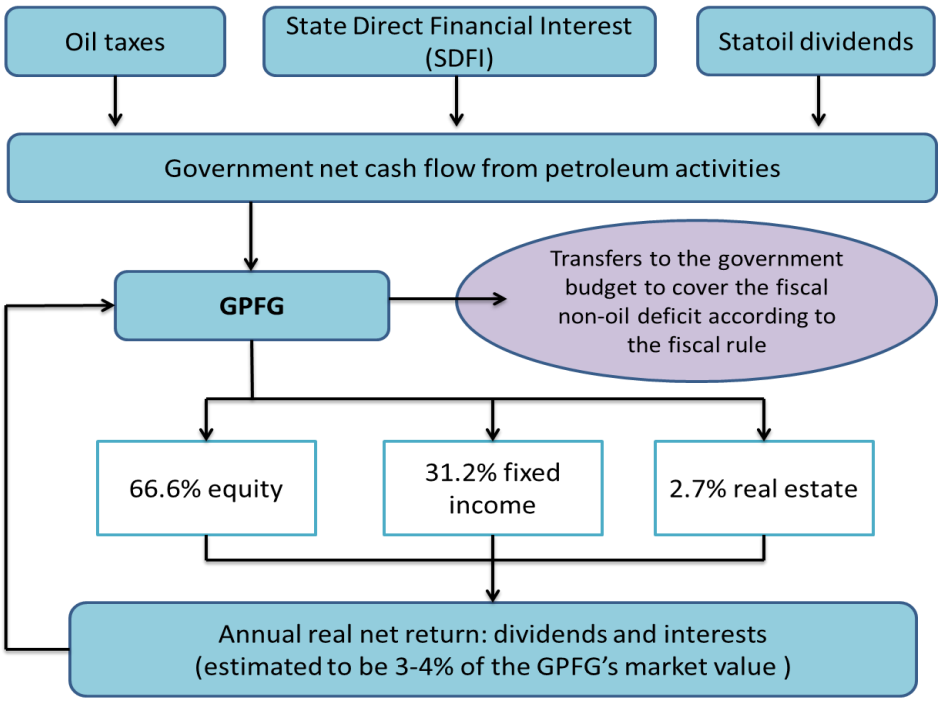
The GPFG's value kept growing due to rises in the oil price, to the transfers of oil income from the Ministry of Finance and no money was withdrawn from the GPFG towards the government budget. Between 1999 and 2001 the media and the population started to demand higher government expenses in a context of high oil prices and the GPFG's increasing market value. Both the government and the opposition agreed that saving state oil income for the future without spending a single NOK was not the best policy alternative and found it necessary to channel certain portion of the oil income towards the general budget in order to favor the current generations as well.

The Ministry of Finance started to work on the principles of oil income expenditure by recovering the Tempo Committee's ideas. The result was the "4% fiscal rule", included in the White Paper no. 29 to the Parliament in (2000-2001)[15], which allows for a business-cycle corrected non-oil fiscal deficit equivalent to the 4% of the Fund's value at the end of the year[16]. The Norwegian government collects oil rents comprised of taxes, royalties, dividends from the semipublic oil company (Statoil) and state oil fields (called State Direct Financial Interest), which constitute the state's petroleum net cash flow and is integrally transferred to the Fund. However, at the end of the fiscal year, the government is allowed to transfer 4% of the Fund's value into the public ark in order to cover the structural non-oil fiscal deficit, while the rest remains in the Fund (figure 11). Therefore, 4% of the Fund's value can be transferred to the general government's budget each year with a flexible margin due to short term trends. It is based on the bird-in-hand approach, as only hydrocarbons already extracted matter when calculating the national oil wealth, the remaining resources below the ground are not taken into account. It is adequate for a

[15] Norwegian Government (2001).
[16] This 4% is the expected long-term real net annual return on the Fund.

highly developed country, with strong public infrastructure, ample alternative sources of State revenue and an aging population. In March 2017 the Government decided to lower the fiscal rule's threshold to 3% of the Fund's value, as the actual real return on the GPFG's assets was below 4% between 1998 and 2016. This decision followed the advices given by the Central Bank's governor (Olsen, 2014) and the Fiscal Rule Commission, led by Øystein Thøgersen (Norwegian Government, 2015) in order to increase the Fund's sustainability.

Figure 11: The fiscal rule mechanism, 2017



Source: authors' own elaboration based on data from the Norwegian Ministry of Finance and Norges Bank.

To sum up, the fiscal rule allowed to isolate state oil revenues from the general government budget, which could not be achieved neither with putting a cap on oil extraction volumes, nor with the establishment of maximum investment levels for oil companies. Thanks to this isolation, the oil extraction pace could increase without limits and the oil extraction topped between 2002 and 2003 (Norskpetroleum, 2018).

7. The link between monetary and fiscal policy

Now that we have introduced the design of monetary and fiscal policies in a separate way, this section aims at presenting the link between both, in order to stabilize the Norwegian economy countercyclically. While the link between the GPFG and fiscal policy is obvious through the fiscal rule that integrates the GPFG into the budgetary process, the tie between the GPFG and monetary policy is more indirect, and is defined by the link between fiscal and monetary policy.

The fiscal rule and the inflation targeting regime were announced simultaneously in March 2001 by the Ministry of Finance and Norges Bank, and the link was embedded in White Paper no. 29 to the Parliament (2000-2001), entitled "Guidelines for economic policy". With regard to fiscal policy, the Ministry of Finance stated that oil prices between 1999 and 2000 exceeded the government's forecasts, so it increased the GPFG's value in the eyes of Norwegian citizens and created pressures to spend more state money. The Ministry warned that the channeling of oil money into the mainland economy - as it had been done previously through massive public employment generation in the 90s - would have risen the non-oil government deficit, would have triggered out wage and price rises, and would harm the non-oil sector's international competitiveness, which would have led to DD. Moreover, the government would have had to deal with ever-growing fiscal expenses due to higher retirement and disability pensions and healthcare services supplied to an aging population since 2015-2020, when oil and gas reserves would start to get substantially exhausted.

In addition, Norges Bank remarked that if the Ministry of Finance would have opted for a gradual phase-in of oil rents into the mainland economy according to the 4% fiscal rule without changes in monetary policy, it would have boosted the Norwegian aggregate demand, inflation and may have constantly created appreciation pressures for the NOK, damaging the non-oil sector's export potential. In order to avoid such unwanted appreciations, Norges Bank would continually have had to intervene in foreign exchange markets selling NOK and/or buying foreign currency and/or lowering the key policy rates.

As it was already mentioned, since 1994 and until 1999 the non-oil fiscal deficit did not stop decreasing both in absolute terms and in terms of the mainland GDP. Furthermore, all state oil rents were deposited in the GPFG, together with all dividends and interests

generated by the Fund's investments, which probably avoided a stronger appreciation of the Norwegian currency. When the phase-in of state oil rents through the fiscal rule was laid down, the fixed exchange rate policy would have become unsustainable in the face of increasing non-oil fiscal deficits. The 4% fiscal rule entailed a fiscal expansion that would have led to substantial increases in aggregate demand, prices, costs and the real exchange rate (Torvik, 2004). Such fiscal impulse would have triggered out inflationary pressures that could have been combatted with a tighter monetary policy, leading to a nominal appreciations, so that the peg's maintenance would have been extremely difficult. Thus, the easiest way to avoid importing monetary policies from structurally different European countries was letting the NOK float. This way, changes in terms of trade were absorbed by the nominal exchange rate, a swifter adjustment mechanism in comparison with real exchange rate adjustments, although it could also damage the non-oil sector's competitiveness during a prolonged period of high terms of trade.

According to White Paper no. 29's first page, the government's intention was keeping the Solidarity Alternative, in other words, the horizontal division of the roles of fiscal, monetary and income policies. But with the adoption of inflation targeting, monetary policy's procyclicality disappeared and Norges Bank acquired a prominent role in economic stabilization. This turn concerned social agents owing to the belief that a central banks with inflation targets merely act with a view to lowering inflation until reaching the target and cannot tolerate any increases in wages or domestic prices above the established target. That is to say, the relation between the three macroeconomic policies would no longer be horizontal but hierarchical, with the dominance of monetary policy (Mjøset and Cappelen, 2011). Were the government to decide spending above the 4% rule to cover the non-oil deficit o were labor unions and the confederation of enterprises to set high wage increases, inflationary pressures would be created and Norges Bank would discipline the economy by raising interest rates, thus punishing the most indebted inhabitants. Therefore, governments that fail to comply with the fiscal rule and opt for high expenditure would be penalized with high interest rates. Citizens, especially younger generations accumulating debts with variable interest rates, would punish the ruling government in the next elections if it does not apply fiscal discipline.

Norwegian labor unions were particularly reluctant to the introduction of a strict inflation targeting policy because of the previous experiences in Denmark and Sweden. In these Scandinavian neighbors the move towards a strict monetary policy was accompanied by the weakening of collective bargaining, increasing unemployment rates, the erosion of social benefits and rising inequality among citizens (Moses, 1994; Iversen, 1996; Palazuelos and Buendía, 2014). With increasingly interconnected capital markets, excessive wage hikes set during collective bargaining rounds ended up in international competitiveness loss and risks of capital flights towards countries with lower production costs. Thus, labor unions had lower leeway when demanding wage increases at the expense of profits and competitive devaluations - which were recurrent throughout the 60s and 70s, but were no longer feasible due to the distrust of foreign investors.

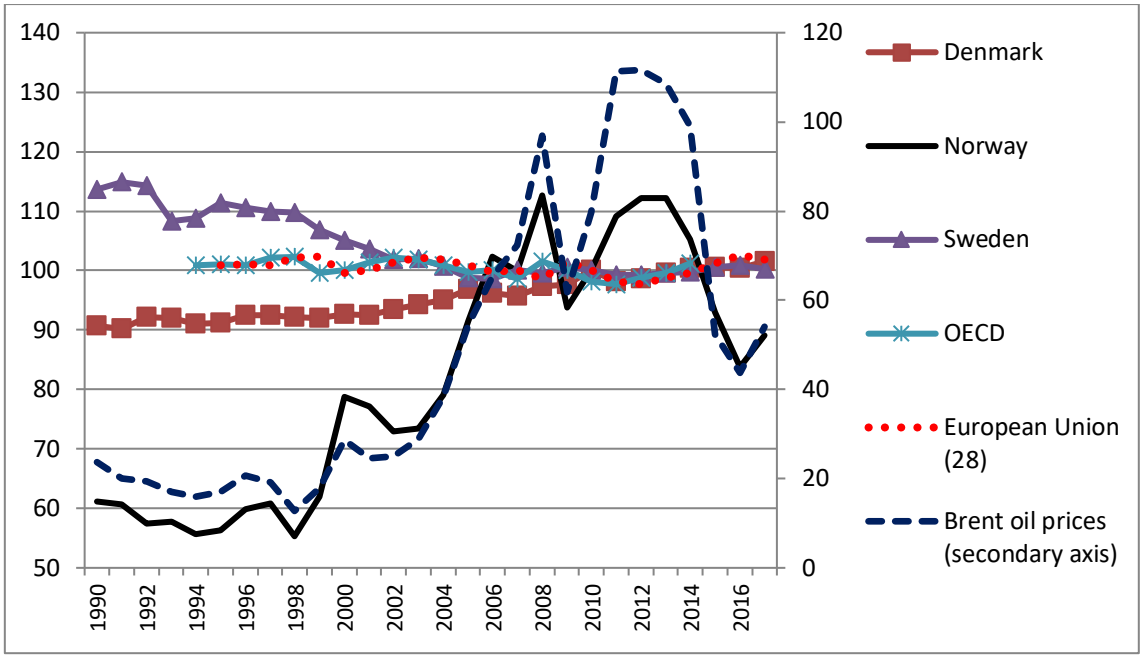
The first Labor government of Jens Stoltenberg, which ruled when White Paper no. 29 was published, wanted to stop the economic agents from rejecting the inflation targeting monetary policy and chose to keep the Solidarity Alternative's basis and underline the monetary policy's flexible philosophy, focused on multiple targets. According to Mjøset and Cappelen (2011: 231), "the 1990s and the 2000s stabilization phase are two versions of the Solidarity Alternative, only with different approach to monetary policies". As it will be detailed throughout the next sections, Norges Bank acted in a flexible manner, taking into account the effects of its decisions on a wide range of variables –inflation, GDP, employment and exchange rate- in a favorable macroeconomic context and without any conflicts with fiscal policy or the social agents.

8. Coordination between monetary and fiscal policy since 2001

Norway faced intense terms of trade shocks since 2000. Figure 12 reflects that the country's terms of trade showed an upward trend since the end of the 90s until 2014 and became much more volatile, especially if we compare them with those of the OECD, the EU and even the Nordic neighbors. This upward trend, although with many ups and downs is due to the fact that the Norwegian terms of trade are directly correlated with the oil price, thus following the same trajectory as the latter, increasing the Nowegian economy's exposure to external shocks, which could have led to higher volatility

regarding economic cycles. However, it did not happen and Norway registered enviable macroeconomic data.

Figure 12: terms of trade index (2010=100) and oil prices (USD/barrel), 1990-2017



Source: OECD and US Energy Information Administration (EIA)

Apart from these terms of trade developments, the Norwegian economy went through additional external shocks between 2001 and 2017, which posed further challenges for public policies: i) China's integration into the World Trade Organization (WTO), which reduced import prices and represented an additional improvement to Norwegian terms of trade; ii) the dot-com bubble at the beginning of the 2000s and the 2007-2008 subprime crisis did also spread into the Norwegian economy; iii) persistent decline in Western markets' nominal and real interest rates owing to the savings glut in emerging countries, sluggish investment and extraordinary monetary stimuli in many Western economies, which reduced the Norges Bank's autonomy; and iv) the enlargement of the EU and the Schengen Area triggered out a constant influx of labor force from Eastern Europe and the Baltic States, which increased the country's population and contained internal labor costs, and thus local prices.

The aforementioned period can be divided into five periods (figure 4): a moderate growth between 2000 and mid-2003; a vast expansion between the second half of 2003 that

reached its peak in 2007 with a 6% GDP growth rate in real terms; a short recession between 2008 and 2009 coinciding with the global financial crisis and the oil price fall, which was much milder than in the rest of the OCDE or the EU; a new expansionary wave between 2010 and 2014, although less intense than in 2003-2007; and a weak growth between 2015 and 2017. The average annual real GDP growth rate during these seventeen years was 2.7%, above the average growth rates in the OECD (1.9%), the Eurozone (1.2%), Sweden (2.3%) and Denmark (1.1%)[17]. These high growth rates were accompanied by an equally enviable macroeconomic framework. The average annual unemployment rate was merely 3.7% and never surpassed 5% - not even between 2008-2009 or 2015-2016, when GDP growth rates were low - and was below the figures of the Scandinavian neighbors, the Eurozone and the EU (figure 5).

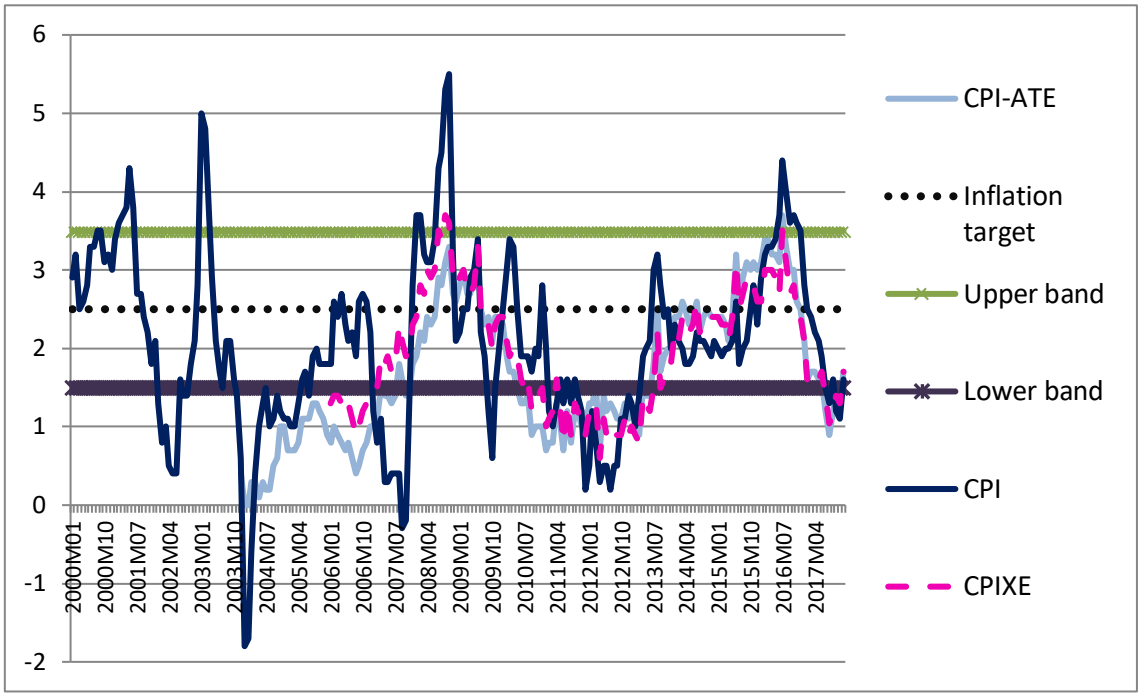
Figure 13 displays interannual inflation rates measured through the general Consumer Price Index (CPI), two core inflation indexes used by Norges Bank when setting the key policy rate, the CPI-ATE and CPIXE; and the inflation target (2.5%) with its fluctuation bands (3.5% and 1.5%). The general CPI registered wide fluctuations during certain months and surpassed both bands, while the CPI-ATE and CPIXE remained within the bands or below the lower band throughout the years of major economic growth. They never exceeded 3.5%, so Norges Bank never faced strong inflationary pressures between 2000 and 2017, a fact partly explained by cheaper imports from Asian countries, the influx of labor from Eastern Europe and the increase of competition in certain Norwegian sectors, as air transport, retail sale and telecommunications. Inflation accelerations are often based on the NOK's depreciation due to worsening terms of trade whenever the oil price falls, as it was the case at the end of 2002-beginning of 2003, 2008-2009, and 2014-2016, which is explained by the high weight of imported goods in the Norwegian CPI basket, around 30% (SSB).

The government accounts have also remained in a healthy state. During all these years the general government's balance registered positive figures and almost reached 20% of the mainland GDP between 2005 and 2008 (figure 14). The fact that these surpluses are directly correlated with oil prices should not be surprising owing to the high role played by oil rents in public revenues –the so called government net cash flow from petroleum

[17] Data from the OECD.

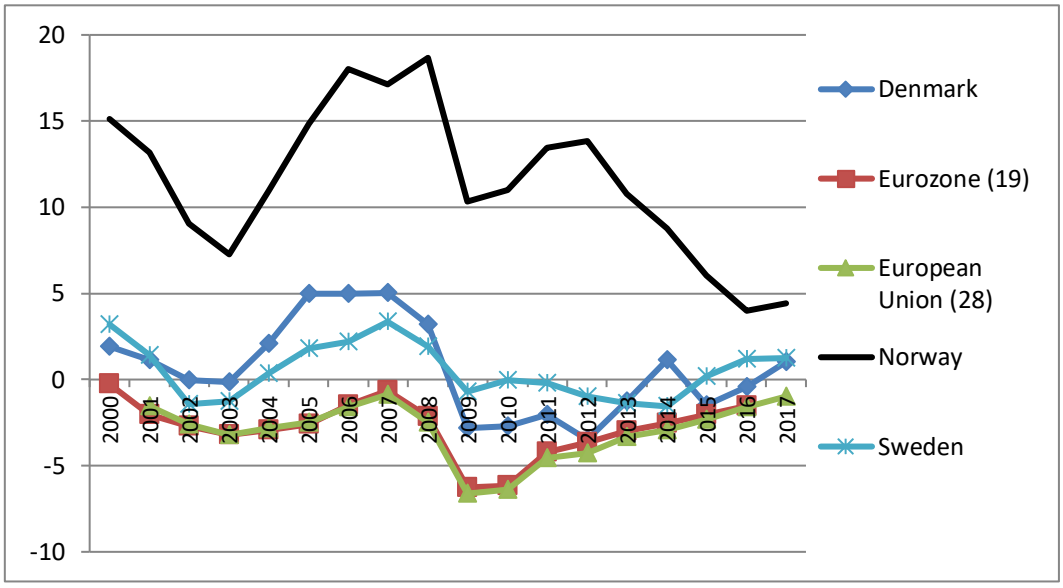
activities. As for government debt in terms of GDP, Norway showed stable rates that were below those of the major OECD members or of the Scandinavian neighbors (figure 15).

Figure 13: Interannual inflation rates measured through CPI, CPI-ATE and CPIXE, in %, January 2000-December 2017



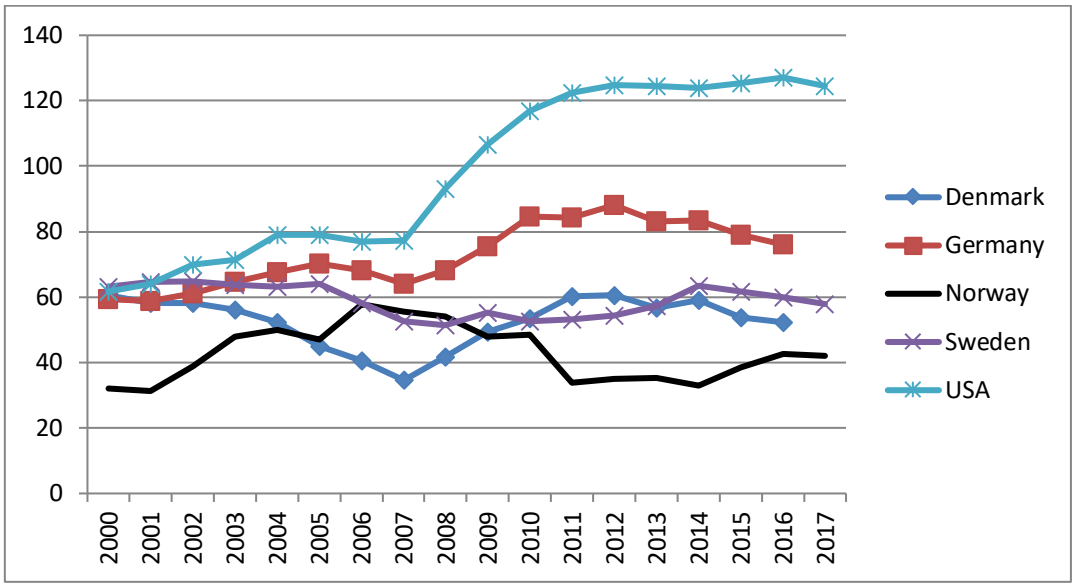
Source: author's own calculations based on Norges Bank and SSB

Figure 14: General government fiscal balance in terms of GDP, in %, 2000-2017



Source: OECD

Figure 15: General government debt in terms of GDP, in %, 2000-2017



Source: OECD

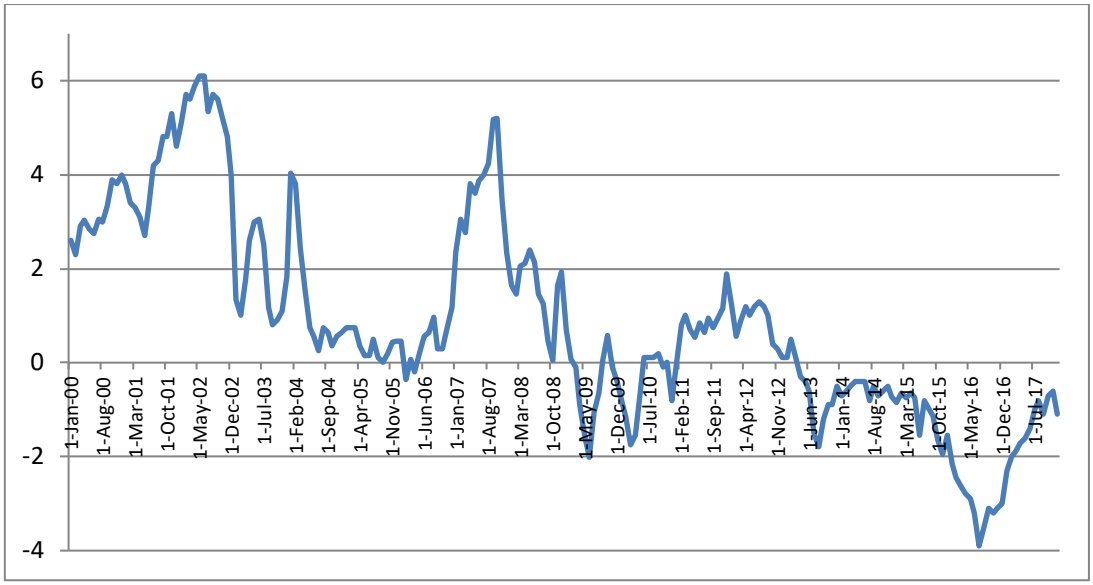
Based on this macroeconomic background, in the next sections of the paper we will show how monetary and fiscal policies acted once the link between both was established, in order to achieve such a stable economic framework in spite of the enormous terms of trade shocks faced by the country.

8.1 Monetary policy

Once inflation targeting and the subsequent floating exchange rate policy were adopted, the essential instrument of monetary policy became the key policy rate set by Norges Bank, apart from other complementary tools destined to combat lack of liquidity during financial crises. By observing figure 8, the downward trend of nominal interest rates stands out, and the rates were strikingly low during the past six years. This is due to external shocks, as immigration and the "China effect", which prevented inflationary pressures, as well as to key policy rates' downward trend in Norway's major trading partners: the Eurozone, Sweden and the United States. As for real interest rates, the trend was also negative, with periods when the rates were close to zero between 2004 and 2006, and two periods with negative rates: between mid-2009 and the end of 2010 and since

2013, when real rates registered less than -2% (figure 16). These negative rates stimulate economic activity through indebtedness.

Figure 16: Real interest rates, in %, January 2002-December 2017



Source: author's own calculations based on Norges Bank and SSB

As a matter of fact, figure 8 also reflects the decrease in interest differentials since 2000 regarding the Eurozone and Sweden. Norwegian rates were higher during the first years of the inflation targeting regime in Norway, with +3.75 percentage point differential with regard to the ECB and +2.5 percentage points with regard to the Swedish Central Bank. Nevertheless, since 2003 the interest rate differential never surpassed 2 percentage points in absolute values, and since 2009 it was below 1.5 percentage points.

Concerning the evolution of the NOK's exchange rate, it's volatility logically increased after the adoption of the free float against the euro, but also against the Swiss franc since 2008, while the rate against the Swedish krone remained almost constant (figure 7). However, Norges Bank (2017) states that the currency's volatility is low in comparison with the exchange rates of other developed commodity exporters, such as New Zealand, Australia or Canada. Thus, Norges Bank still kept an eye on exchange rate stability and the instrument used for its management was interest rate differential regarding trading partners to the detriment of direct interventions in foreign exchange markets.

During most of our period of analysis, Norges Bank followed a countercyclical and foreseeable policy concerning key policy rate setting, by taking into account not only inflation rates, but also economic cycles and the oil price. The sole exception took place in 2002: in spring there were fears of inflationary pressures and Norges Bank decided to raise the key policy rate. Nonetheless, the central bank's forecasts underestimated the economic weakness across the main trading partners after the dot-com bubble burst and the currency appreciation that a rising interest differential could trigger out (Bjørnland et al., 2004). The NOK got stronger (figure 7), harmed exports and decreased aggregate demand and generated unemployment (figure 5). Norges Bank acknowledged its mistake and at the end of 2002 it began to progressively reduce the key policy rate until 2004. These interest rate decreases soothed the economy, which started to recover and experienced a memorable expansion until 2007 (figure 4), sustained by the strength of global markets and rocketing oil prices.

It was in 2005 when it began to increase interest rates, but not due to inflationary pressures (price increases were well below the central bank's target, see figure 13), but because of fears of GDP overheating, which accelerated spectacularly owing to the oil price boom and the subsequent investment rush in the petroleum sector. Between July 2005 and June 2006, the interest rates set by Norges Bank and the ECB were practically identical (figure 8) and remained below 4 percentage points despite strong mainland impulses, a tight labor market with unemployment rates below 3% (figure 6), and an upward trend in housing prices and the Oslo Stock Exchange (Oslo Børs). According to Goodfriend et al. (2007) and Revå (2010), the maintenance of low nominal interest rates – close to or below 2% - during two consecutive years gave the impression that rates would remain low indefinitely, encouraging enterprises and households to take out debt and invest either in the stock exchange or in real estate.

In all likelihood Norges Bank took into account the trends in foreign exchange markets: the NOK did not cease to appreciate against the USD and the pound sterling since 2002, although the parity remained relatively stable against the euro and the Swedish krone (figure 7) in spite of Norway's terms of trade gains and the vigorous accumulation of oil rents within the GPFG (figures 2, 3 and 12). The Norwegian monetary authority did not

want to raise the key policy rates above those set by the ECB and the Swedish Central Bank in order to avoid a loss of competitiveness in global markets.

The global financial crisis and the subsequent oil price slump had an impact on the Norwegian economy by creating a recession throughout 2008. Norges Bank reacted by swiftly cutting the key policy rate from 5.45% in October 2008 to 1.25% in July 2009 (figure 8), even if inflation surpassed the 2.5% target in 2008 (figure 13). Moreover, the monetary authority injected money into the banking system: it allowed to exchange less liquid bonds (covered bonds) for more liquid bonds (Treasury bonds), eased the requirements for its loans and provided direct liquidity denominated in foreign currency (Bergman et al., 2009 and Bjørnland et al., 2010).

Owing to the oil price fall and interest rate cuts, the NOK suffered a considerable depreciation against the USD and the euro between June 2008 and December 2009, giving a break to exporters (figure 7). This triggered out inflationary pressures between July and November 2008, but price acceleration dissipated since December: both CPI growth and CPI-ATE growth remained within the fluctuation bands around Norges Bank's target (figure 13).

This policy based on monetary stimuli, in conjunction with a vast fiscal expansion -which will be seen in the next section- and the oil price recovery since 2009 boosted the economy. As the economy recovered, Norges Bank gradually withdrew the extraordinary monetary stimuli and then undertook moderate increases regarding the key policy rate. It raised the rate between October and December 2009, then during March and May 2010, and finally in 2011 May, when the rate was set at 2.25%, the highest figure during the current decade (figure 8). However, uncertainties surrounding the Irish, Greek and Portuguese government debt spread instability in European stock markets and doubts about the Old Continent's recovery. Norges Bank reacted to the ECB's policy rate cuts and lowered the rate in December 2011 to 1.75% despite the Norwegian economy's signs of recovery. Once again Norges Bank gave priority to the interest rate differential, which could have damaged the NOK's competitiveness. Markets were taken aback by such decision, although the new policy rate cut to 1.5% in March 2012 was even more unexpected. As a result, the NOK depreciated in a midst of economic strength in mainland Norway. This new interest rate cut was justified by central banks' decisions in the main

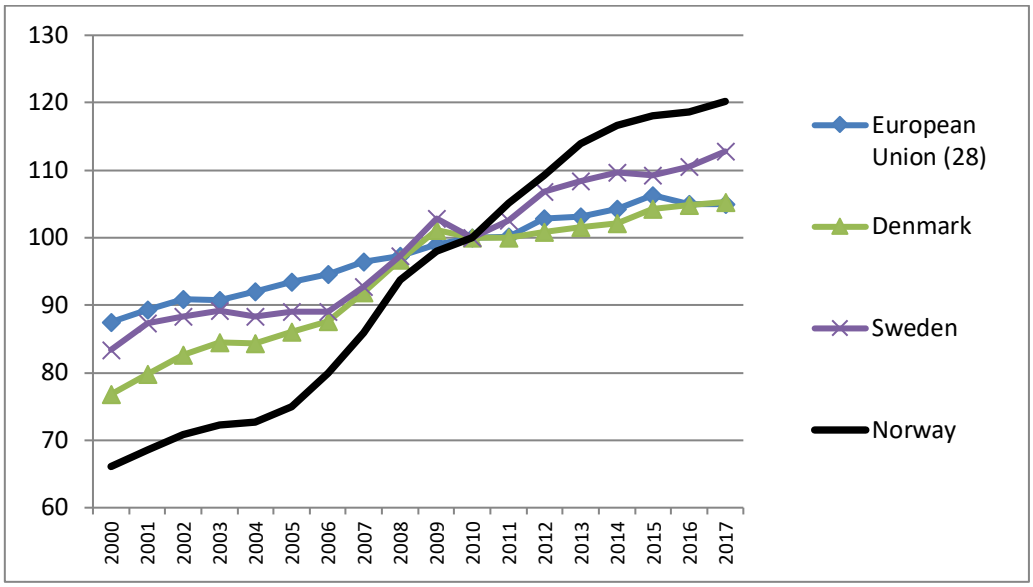
trading partners and Norges Bank's willingness to keep interest rate differentials in order not to undermine the non-oil tradable sector's competitiveness in a context of large terms of trade gains.

Norges Bank kept the policy rate at 1.5% throughout 1002 days in an environment characterized by extremely low inflation (figure 13), a certain moderation in economic growth and a very soft increase in unemployment rates. But the NOK appreciated gradually against the euro during the first half of 2014 and remained relatively stable against the USD, so Norges Bank did not want to generate a higher currency appreciation through interest rate hikes.

Norges Bank's next move consisted in cutting the policy rate in December 2014 to 1.25% once oil prices had registered falls since summer and the OPEC countries decided not to decrease their oil extraction volumes. Policy rate cuts followed in June and September 2015 and the rate ended up being 0.5% as unemployment problems worsened, private investment became weaker and GDP growth fell below its trend.

Norges Bank's decision did not collide with inflation, which remained between the fluctuation bands around the 2.5% target, although between summer 2015 and the end of 2016 prices accelerated owing to the NOK's heavy depreciation. Such depreciation gave a break to non-oil exporters, jeopardized by a constant loss of competitiveness due to high labor unit cost increases since 2004, and especially since 2010 (figure 17). Moreover, the currency depreciation offset to a certain extent the income losses for oil companies, as the majority of oil exports are accounted in USD. The depreciation also improves the GPFG's return when converted into NOK, as most of its investments are denominated in euros or USD –in 2014 and 2015 the factor that contributed the most to the Fund's market value increase was precisely the exchange rate effect (figure 3).

Figure 17: Nominal labor unit cost index per hour (2010=100), 2000-2017



Source: Eurostat

To sum up, between 2001 and 2017 the inflation targeting monetary policy was able to provide a controlled inflation below the 2.5% target, sustained GDP growth rates and very low unemployment. However, Norges Bank had to deal with the dilemma of controlling real estate prices and keeping the NOK's competitiveness in the midst of positive terms of trade shocks. As in previous decades, Norges Bank kept track of the NOK's exchange rate despite having adopted a flexible inflation targeting regime and letting the domestic currency float. As a matter fact, neither were there abrupt fluctuations in the NOK's value, nor brusque appreciations during the oil boom. This feature of exchange rate tracking is important for a small open economy exposed to intense terms of trade shocks in order to prevent irreversible competitiveness losses for the non-oil tradable sectors during oil booms. On the other hand, nominal depreciations due to oil price slumps are most welcome as they restore international competitiveness and help to reallocate productive resources that are expelled from the oil industry towards the non-oil sectors. This interest in the NOK's rate proves that the Norwegian monetary policy did not enjoy total independence, but kept depending on the actions of foreign central banks' to a certain extent, mainly those of the Eurozone.

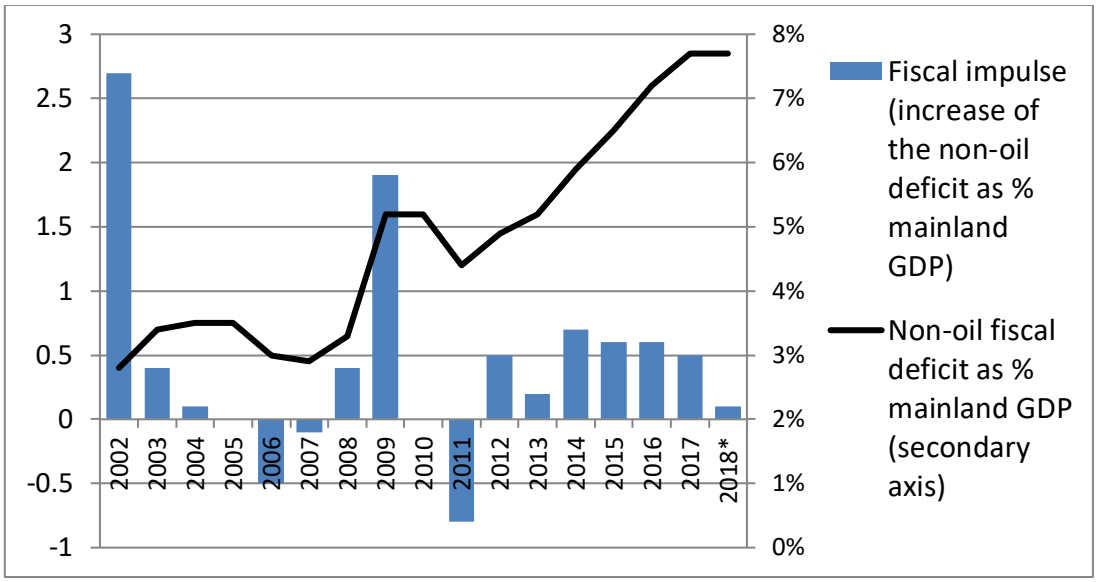
8.2 Fiscal policy

As it was already mentioned, the government's fiscal balance showed remarkable positive signs during the 2000-2017 period (figure 14), but it is not an ideal tool to measure the fiscal sustainability of an oil exporting country. Emphasis should be placed in the non-oil fiscal deficit's development, fiscal impulses and the government's savings capacity with a view to determining whether fiscal policy showed a countercyclical and thrifty profile as it was supposed to do according to the fiscal rule.

The fiscal rule was proposed and accepted by Jens Stoltenberg's Labor government in March 2001. Nevertheless, in October 2001 there was a government shift and a new coalition between the conservatives, liberals and Christian democrats came into power. It opted for a tax decrease in 2002, which was welcome both by the Norwegian citizens as by the IMF, which considered the country's tax burden to be excessive when compared to other EU countries (IMF, 2002). While in 2001 the non-oil deficit in terms of the mainland GDP hardly reached 0.1%, in 2002 this rate escalated up to 2.8%, which was equivalent to a fiscal impulse of 2.7 percentage points explained by tax cuts and higher government spending (figure 18). Moreover, the non-oil deficit was slightly above the structural non-oil deficit (or cyclically adjusted non-oil deficit) and well above the amount allowed by the fiscal rule (figure 19).

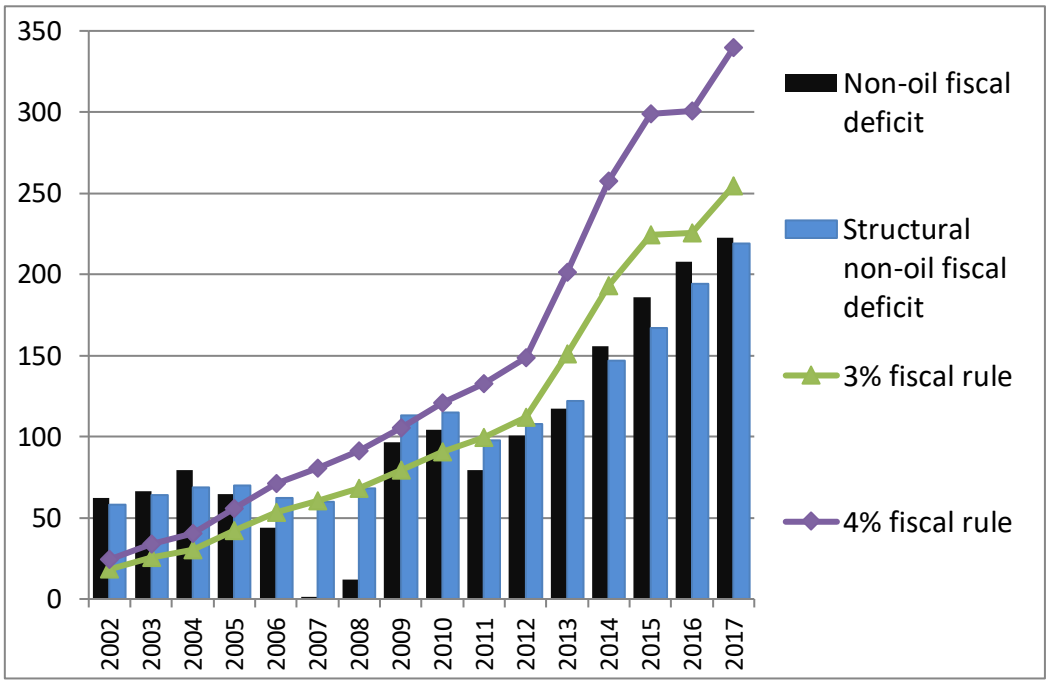
This diversion from the rule was understandable in an economic context characterized by the global dot-com crisis, a meager economic growth and a strict monetary policy until 2002. Additionally, the GPFG's value did not increase both because of the NOK's strength and the lack of returns in the midst of the dot-com bubble burst (figure 3). Unemployment increased up to 4% and fiscal expansion related to automatic stabilizers was expected. As the first signs of economic recovery started to appear in 2003, fiscal policy became less expansive (figure 18), although fiscal impulse kept registering a positive sign even in 2004, when economic growth was already high. Thus, the fiscal rule was infringed both in 2003 and 2004. The government justified these breaches with income losses linked to tax cuts, which were meant to increase the country's efficiency.

Figure 18: Fiscal impulse and the non-oil fiscal deficit in terms of mainland GDP, in %, 2002-2018*



Source: author's own calculations based on the Ministry of Finance. *Note: data for 2018 is a forecast.

Figure 19: Fiscal rule and non-oil fiscal deficit, NOK billion, 2002-2017



Source: author's own calculations based on the Ministry of Finance.

It was in 2005 when the fiscal impulse was reduced to zero and the gap between the actual non-oil deficit and the maximum non-oil deficit allowed by the 4% fiscal rule substantially decreased. Finally, in 2006 authorities complied with the fiscal rule for the first time, the actual non-oil fiscal deficit was below the structural non-oil deficit and fiscal impulse turned out to be negative (figures 18 and 19). With oil prices between 60 and 80 USD per barrel and the subsequent increase in the GPFG's value (figures 2 and 3), the economic context was most favorable for the Norwegian government's accounts.

With oil prices fluctuating between 100 and 130 USD per barrel at the end of 2007 and summer of 2008, the government's oil net cash flow reached a historical record in 2007 (figure 9), transfers towards the GPFG did not cease and non-oil deficits were much lower than expected. The fiscal rule was met during both years and the non-oil deficit was below the structural deficit forecast by the government. However, in 2008 the GPFG's market value increased less than between 2005 and 2006 owing to the international financial crisis: the Fund's investments yielded negative returns, but these were offset by the exchange rate effect and transfers from the oil sector despite the oil price's fall during the last months of 2008 (figure 3).

The financial crisis turned out to be more severe than expected and authorities decided to apply extraordinary measures consisting of investments in maintenance and construction of public infrastructure and creation of public employment, which complemented automatic stabilizers and the liquidity stimulus from Norges Bank. The non-oil deficit represented 5.2% of the mainland GDP in 2009 compared with 3.3% in 2008, although it did not exceed the fiscal rule. This fact could be explained by the GPFG's good performance in 2009 due to the oil price's gradual recovery and, above all, by the high returns yielded by the Fund's assets after the recovery registered by international financial markets (figure 3).

As the government had doubts about the local economic recovery, it decided to maintain high state spending and investment in 2010, so the non-oil deficit in terms of mainland GDP kept on increasing up to 5.2% in 2010 and the fiscal rule was barely met. The government agreed to reduce the fiscal stimulus in 2011, the non-oil deficit fell: it was well below the figure set by the fiscal rule and was equivalent to 4.4% of mainland GDP. Oil prices were high between 2011 and the first half of 2014, which helped to generate

fiscal revenues from the petroleum sector that were comparable to the income collected between 2004 and 2008 (figure 9).

Between 2012 and 2014 the fiscal rule was met again. Actually, the difference between the 4% of the GPFG's market value and the actual non-oil deficit was increasing year by year: between 2011 and 2012 the government seemed to follow a 3% fiscal rule and between 2013 and 2014 a 2.3% fiscal rule. However, fiscal impulses during the economic bonanza were positive, that is to say, the non-oil deficit in terms of mainland GDP expanded each year and reached 5.8% in 2014 (figure 18). In other words, between 2012 and 2014 fiscal policy was procyclical. In 2014 the government justified such impulse with the fiscal reform destined to enhance the country's competitiveness via corporate income and property tax cuts (IMF, 2014).

In 2015 the symptoms of economic weakening due to the oil price fall were evident and the government opted for a fiscal expansion, increasing the non-oil deficit in terms of mainland GDP up to 6.4%, which still met the fiscal rule as it was equivalent to the 2.6% of the GPFG's market value. The same happened in 2016 and 2017: fiscal impulses were positive, which increased the non-oil deficit in terms of mainland GDP year by year despite meeting both the 4% fiscal rule and the 3% rule (figures 18 and 19). The stimulus package included additional cuts regarding the corporate income and the personal income tax, in conjunction with policies meant to reduce unemployment in the Southwest of Norway, the most dependent on the oil sector (Hvinden and Nordbø, 2016). The current government forecasts a fiscal impulse of only 0.1 percentage points for 2018 and the stabilization of the non-oil deficit in terms of mainland GDP in the midst of economic recovery (Norwegian Ministry of Finance, 2018).

As it was already mentioned, authorities permanently complied with the fiscal rule since 2006 and the difference between the actual non-oil deficit and the 4% of the GPFG's value kept increasing in such a way that it gave the impression that the government was following a 2-3% rule instead of 4%. However, between 2012 and 2014 the non-oil deficit in terms of mainland GDP accelerated, implying positive fiscal impulses even during an economic upturn. What we observe is that fiscal impulses are not symmetrical: during times of economic weakness, as in 2002, 2009, and between 2015 and 2016, it shows very high values; during the 2004-2007 expansion it displays zero or negative values, which

are low in absolute terms; and during the 2012-2014 expansion it shows positive figures well above zero. This is explained by the fact that the GPFG's market value accelerated much more between 2002 and 2017 than the authorities expected when the 4% rule was laid down back in 2001, when oil prices moved around 25 USD per barrel. The fiscal policy's main weakness is the fiscal rule's lack of flexibility. Admittedly it takes into account cyclical factors, as it is applied to the structural non-oil deficit, but neither does it consider oil price fluctuations, nor the weight of the non-oil deficit when compared to the total or mainland GDP. In other words, the fiscal rule is very sensitive to the increases in the GPFG's market value.

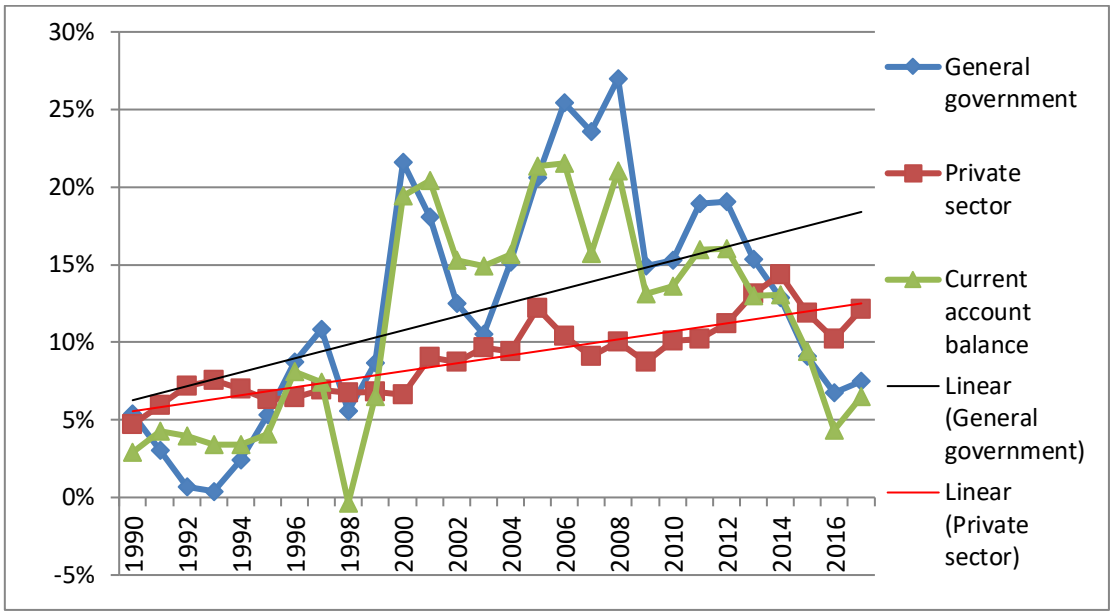
In February 2017 the government expressed its willingness to introduce changes to the fiscal rule and the percentage of the GPFG's market value that can be transferred annually towards the fiscal budget was lowered to 3%, which is the rule followed since 2013 (figure 19). Nevertheless the rule is still disassociated from the GDP or the mainland GDP, thus there is no limit for fiscal impulses that could avoid procyclicality. But linking the mainland GDP to the non-oil deficit would have its drawbacks: the forecast of the deficit is subjected to constant revisions along the fiscal year and the differences between forecasts made at the beginning of the year and at the end of the year can be equivalent to 1% or 2% of the mainland GDP.

Despite its flaws, the application of this bird-in-hand based fiscal rule generated remarkable government savings rates (figure 20). The government's savings rates increased since the beginning of the 90s and were equivalent to 10-25% of the mainland GDP between 2000 and 2015, with 16.3% average, while private savings rates also showed an upward trend but with a much lower average (10.4%). As both sector's savings rates display an upward trend, it can be concluded that government savings through the GPFG did not discourage private savings, that is to say, there was no Ricardian equivalence[18].

[18] The ricardian equivalence is a theory suggesting that a fiscal surplus or deficit has no effect on aggregate demand. It supposes that economic agents are foresighted and expect that if there are current fiscal deficits the government would have to pay off its debt by increasing taxes in the future. Therefore, households and enterprises would save more money in order to be able to pay higher taxes in the future. On the contrary, if the government decides to accumulate savings, economic agents would expect future tax cuts and would lift their present consumption and investment to the detriment of savings, but in Norway this did not happen.

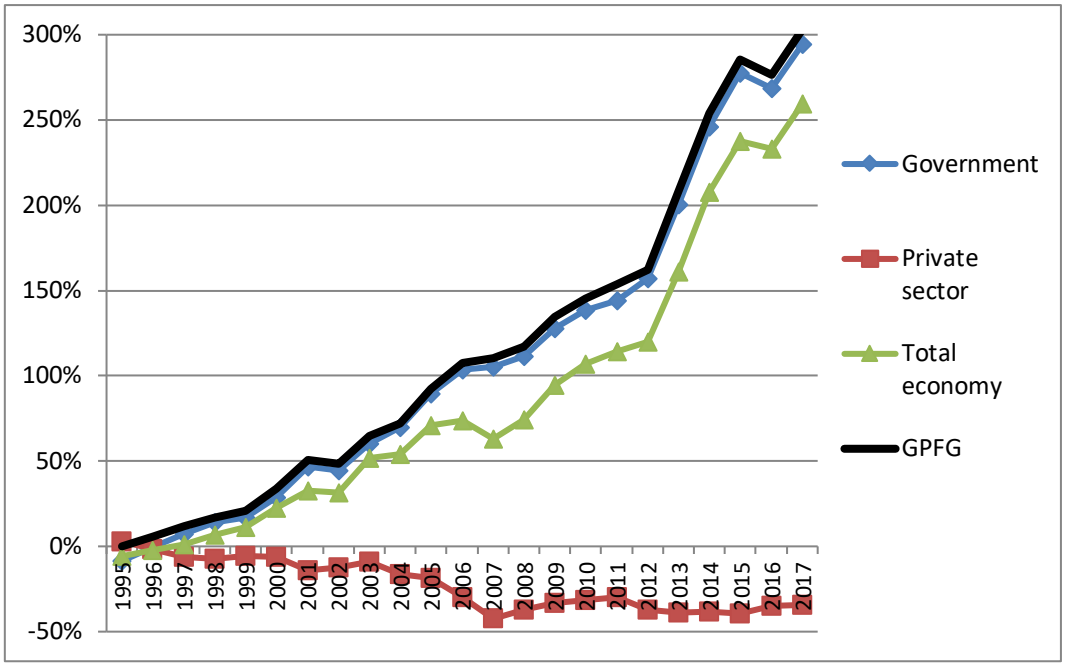
Furthermore, government savings were directly correlated with the current account surpluses, that is, with oil exports. Figure 21 illustrates the dynamics of the Norway's net foreign assets in terms of mainland GDP, both by the government and the private sector, and the evolution of the GPFG's market value. It is obvious that practically all the accumulation of net foreign assets made by the government is explained by the GPFG's growth, as the Fund carries out all of its investments abroad and the accumulation intensified the most between 2012 and 2015. On the other hand, the private sector got indebted regarding the rest of the world. The debt's value increased especially between 2004 and 2007 and then stabilized around 35% of the mainland GDP.

Figure 20: Government and private saving, and the current account balance, in % of mainland GDP and trend, 1990-2017



Source: author's own calculations based on SSB

Figure 21: Accumulation of net foreign assets by the government, the private sector and the economy as a whole, and the GPFG's market value, in % of mainland GDP, 1995-2017



Source: author's own calculations based on SSB

9. Conclusions

This article summarized the principal economic events in Norway since the 90s and the macroeconomic policies applied to stabilize business cycles, maintain low unemployment and inflation rates in a context of higher economic openness and the subsequent terms of trade shocks experienced by this oil exporter. Indeed, since 2000 Norwegian terms of trade became more volatile and showed an upward trend until 2014 when compared to the rest of developed countries, which is explained by high and unstable oil prices and high petroleum outputs. Subsequently, the Norwegian economy was prone to suffering from high economic instability since the end of the 90s. However, it did not happen, economic growth was positive and sustained by the mainland activities, unemployment rates were very low, inflation was under control, government accounts were healthy and showed high savings rates.

This enviable macroeconomic framework can be partly explained by favorable exogenous factors, such as the influx of cheaper labor from Eastern Europe and increasing imports from Southeast Asia - which kept inflation down- and without a doubt to unexpectedly high oil prices. The rest can be explained by the coordination of economic policies laid down in 2001 and the GPFG's successful financial management carried out by NBIM. Monetary and fiscal policies did not come into conflict and Norges Bank did not exercise its role watchman through interest rate hikes that would have punished consumption, investment and employment, as it was feared in the beginning of the inflation targeting monetary policy.

First of all, monetary policy stopped acting procyclically and adopted a flexible inflation targeting regime with floating exchange rates. Since 2000, excluding year 2002, Norges Bank operated acyclically and countercyclically by lowering key policy rates during economic difficulties –in conjunction with liquidity stimuli- and increasing them during upturns. Nevertheless, chances are that policy rate hikes were too moderate due to the lack of inflationary pressures and Norges Bank's desire to avoid an excessive currency appreciation. Therefore, conditions were undoubtedly encouraging for private indebtedness and investments in the real estate market characterized by soaring prices. This fact shows that the Norwegian monetary policy did not possess total autonomy since 2001 as the authorities pretended, but kept depending on the actions of the main trading partners' central banks, particularly those of the Eurozone.

Second, the persistence of low interest rate differentials prevented the NOK's brusque appreciation in foreign exchange markets, which relieved non-oil export sectors' loss of competitiveness in the midst of constant unit labor cost increases. Moreover, during oil price slumps the NOK's depreciation is warmly welcome as it restores the tradable sector's competitiveness and helps to reallocate productive resources that are expelled from the oil industry towards the non-oil sectors.

In third place, after five years of permanent accumulation of state oil rents in the GPFG, in 2001 authorities finally established a rule that allowed to separate state oil rents from budgetary expenses, something that had not been achieved by just limiting oil companies' rate of hydrocarbon extraction or their investments in the Norwegian Continental Shelf. Apart from saving for a future characterized by the exhaustion of oil and gas reserves, the

rule allowed for the channeling of a minimal part of the state oil rents into the economy, equivalent to the GPFG's long term rate of return in order to benefit current generations. Governments did comply with the fiscal rule during most of the years: the non-oil fiscal deficit only exceeded the 4% of the GPFG's value between 2002 and 2005. But since 2006 the non-oil deficit's value was below the 4% or even 3% of the GPFG, especially during oil price booms, as in the periods 2006-2008 and 2010-2014.

Fourth, as the GPFG invests all of its money in assets located abroad, a sterilization effect is created in order to avoid the NOK's excessive appreciation and mainland economic overheating.

Fifth, the fiscal rule is not exempt from criticism, mainly for its great sensitiveness to the GPFG's rocketing value explained by high oil prices and return on its investments. Thus, despite meeting the fiscal rule, the non-oil deficit in terms of mainland GDP did not only increase during times of economic weakness as a result of a countercyclical fiscal policy, but also throughout the 2012-2014 expansion, which implies that there was fiscal procyclicality between these years.

Sixth, there is no doubt about the government's savings capacity via the GPFG, which represents a fiscal cushion equivalent to 280% of the mainland GDP, destined to face adverse macroeconomic contexts and the increase concerning retirement pension expenses in the future, when hydrocarbon resources start to get depleted.

Finally, we can conclude that, as a whole, monetary and fiscal policies were strongly countercyclical during times of economic weakness, as in 2002-2003, 2008-2009 and 2015-2016. On the other hand, during the 2004-2007 expansion both policies acted in a countercyclical way, although Norges Bank delayed interest rate hikes. During the 2010-2014 expansion we find countercyclical policy combination between 2010 and 2011 because fiscal impulse was negative and Norges Bank slightly increased the key policy rate; and a procyclical combination as fiscal impulse was positive just when the GPFG experienced its major value gains and the central bank softly cut the policy rate.

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