DANMARKS NATIONALBANK

27 OCTOBER 2022 — NO. 12

Monetary and fiscal policy in Denmark

- The primary objective of monetary policy is to maintain low and stable inflation. In Denmark, the objective is achieved by pegging the Danish krone to the euro. This reflects the fixed exchange rate policy that has underpinned Danish monetary policy in the past four decades.
- The fixed exchange rate policy entails that Danish monetary policy tracks the monetary policy conducted by the European Central Bank. This will often contribute to reducing fluctuations in the Danish economy and in inflation. To the extent that developments in the Danish economy deviate from the euro area, domestic fiscal policy can be used as a stabilisation tool.
- In the current environment, Danish fiscal policy should be tighter than in the euro area. The reason for this is that capacity pressures in Denmark are higher, and that the combination of high inflation and a tight labour market creates the risk of a wage-price spiral.

This year, Denmark can look back on 40 years of a fixed exchange rate policy.[1] First by pegging to the German D-mark and since 1999 with the euro as the anchor currency. While the overall framework for Danish monetary policy has remained unchanged throughout this period, there have been major developments in monetary policy regimes in other countries. Since the early 1990s, a large number of countries have based their monetary policy on inflation targets. At the same time, 19 European countries have adopted the common European currency, the euro, where monetary policy is also based on an inflation target. While pursuing a monetary policy designed to maintain a fixed exchange rate against an anchor currency used to be quite widely used, the Danish monetary policy regime therefore today appears somewhat unique among the advanced economies.

Since the introduction of the fixed exchange rate policy, international research and practical experience across a number of countries have influenced what is expected to be achieved by monetary and fiscal policy. There is now a clear consensus that maintaining low and stable inflation, measured as the rate of increase in the general price level, is a core task for monetary policy.[2] At the same time, fiscal policy should contribute to macroeconomic stability and thus facilitate the tasks of monetary policy. This is especially important in situations in which inflation deviates from the desired level. Another task of fiscal policy is to ensure long-term sustainability of public finances.

1 See box 1 for an overview of key concepts.

2 See, for example, Jerome H. Powell, Monetary Policy and Price Stability, 2022, speech at Federal Reserve Bank of Kansas City, Jackson Hole Symposium, and Christine Lagarde, Monetary policy in the euro area, Karl Otto Pöhl Lecture, organised by Frankfurter Gesellschaft für Handel, Industrie und Wissenschaft, 2022.

Key concepts

Box 1

Macroeconomic policy
Macroeconomic policy includes measures that affect aggregate supply and demand conditions in the economy. Fiscal and monetary policy are part of macroeconomic policy.

Monetary policy
Monetary policy affects aggregate demand in the economy by influencing financial conditions of households and companies, not least the interest rates that they face. Monetary policy is conducted by central banks and its key objective is to ensure price stability.

Fixed exchange rate policy
Fixed exchange rate policy is a way of managing monetary policy. A central bank which pursues a fixed exchange rate policy aims to achieve price stability by maintaining a fixed exchange rate for its currency against another currency.

Fiscal policy
Fiscal policy covers measures that affect economic activity through central government revenues and expenditures. These may be measures related to taxes, transfers, public consumption and investments or public employment. Danish fiscal policy is decided by the Danish Government and Parliament, and the purpose is to ensure stable macroeconomic developments and sustainable public finances.

Structural policy
Structural policy encompasses a wide range of measures that affect the economic framework conditions. This could, for example, be the framework of the labour market or the business sector. Danish structural policy is determined by the Danish Government and Parliament, and the purpose is to create a framework for a robust economy.

Macroprudential policy
Macroprudential policy primarily concerns regulation of households' access to different loan types as well as requirements for the banks to be sufficiently resilient. The purpose is to reduce the build-up of risks that can threaten the stability of the financial system as well as to limit the damage when a crisis occurs.

Given the low prevalence of fixed exchange rate regimes, international monetary and fiscal policy discussions are most often based on an assumption of floating exchange rates. A notable exception is the euro area, in which the European Central Bank (ECB) pursues the common monetary policy, while the governments of the individual Member States are responsible for fiscal policy within a common European set of rules. The interaction between monetary and fiscal policy was one of many elements of the ECB's strategic review conducted in 2021.[3]

This analysis discusses how best to conduct macroeconomic policy in a fixed exchange rate regime.[4] The overarching objective of economic policy is to provide citizens with the best possible living conditions. This is done by ensuring a high level of prosperity, which is achieved through high employment and high productivity. Another important task for economic policy is to contribute to ensuring that fluctuations in the economy do not become unnecessarily large.[5]

Economic policy can thus address both the level of economic prosperity and how it fluctuates. Monetary and fiscal policy are cyclical tools aimed at stabilising the economy over the business cycle. In turn, the level of long-term prosperity depends on more structural factors such as productivity and the structure of the labour market. However, there is a link between fluctuations and levels. There are thus indications that high unemployment which is due to a period of weak demand may take hold as those unemployed gradually lose their qualifications. Against this background, a downturn that is initially temporary may lead to a persistent decline in prosperity.

3 See ECB, Monetary-fiscal policy interactions in the euro area, *Occasional Paper*, no. 273, 2021.

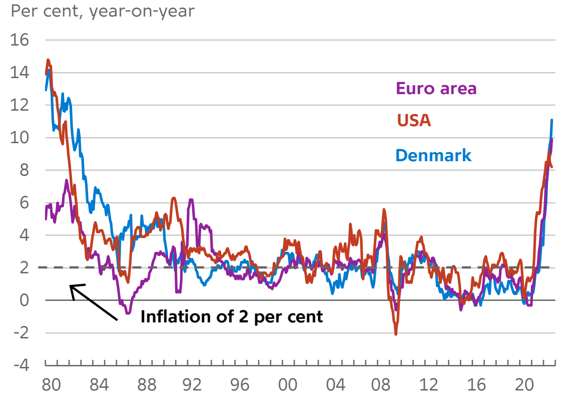
4 See also The Economic Council, Danish Economy, Spring, Chapter 2, 2007, for reflections on the design of economic policy in Denmark.

5 See The Economic Council, Danish Economy, Autumn, Chapter 4, 2019, for a discussion of the costs of fluctuations in the economy.

It is a basic condition for a country pursuing a fixed exchange rate policy that its monetary policy is determined by the central bank in the anchor currency area, in Denmark's case the ECB. This gives fiscal policy a special role. If the cyclical situation in Denmark deviates from that of the euro area, Danish monetary policy will typically not be optimal from a macroeconomic perspective. In such a situation, fiscal policy can contribute to ensuring a more favourable economic cycle, which will also support stable inflation. It is also important to ensure that fiscal policy does not in itself contribute to cyclical fluctuations in the Danish economy getting out of sync with the euro area.

Currently, inflation across the advanced economies has risen to levels not seen in four decades, see chart 1. This has led to renewed focus on the role of monetary policy and its interaction with fiscal policy. Central banks have the task of maintaining low and stable inflation. However, other economic policies, including fiscal policy, are central in ensuring that the process towards lower inflation is as benign as possible. This can primarily be done by contributing to a dampening of demand in the economy in the short term in order to achieve a better balance between supply and demand.

Inflation in USA, euro area and Denmark since 1980 Chart 1



Note: The consumer price index is used for the United States for the whole time period. Euro area inflation is represented by Germany's consumer price index up to 1997 and subsequently by the EU Harmonised Index of Consumer Prices (HICP) for the euro area. For Denmark, inflation is represented by the consumer price index up to 1997 and then by HICP.
Source: Macrobond.

Price stability, economic policy and the role of central banks

The primary objective of monetary policy is to maintain low and stable inflation. Inflation is determined by the interaction between supply and demand. If demand for goods and services is high relative to potential output of the economy, the growth rates of prices and wages will tend to increase. In part, this reflects that high demand induces producers to increase their mark-ups, that is the difference between prices and costs. But high demand also puts more pressure on the capital stock, which may result in increased production costs. And an increase in output will lead to greater demand for labour, which may trigger higher wages and salaries, and thus higher production costs.

Experience shows that demand in the economy fluctuates over time, and rising inflation is therefore often the result of an increase in demand.[6] Fluctuations in demand may, for example, reflect that households continuously adjust their consumption based on their financial situation or prospects, just as corporate investments largely reflect companies' changing expectations for the future. At the same time, the public sector constitutes a significant part of the economy, and fluctuations in public consumption and investments are also an important driver of fluctuations in aggregate demand and thus in inflation.

6 See Jesper Pedersen and Søren Hove Ravn, What drives the Business Cycle in a Small Open Economy? Evidence from an Estimated DSGE Model of the Danish Economy, *Danmarks Nationalbank Working Paper*, no. 88, December 2013, for an analysis of the shocks that have driven the fluctuations in the Danish economy.

Inflation may also fluctuate as a result of shocks to the supply side of the economy. An unexpected technological improvement that boosts corporate productivity is an example of a positive supply shock. Such a shock will result in higher economic activity just as a positive shock to demand. But, unlike a demand shock, the supply shock also increases potential output of the economy. Therefore, a positive supply shock will initially tend to reduce capacity pressures, as potential output increases by more than output. A positive supply shock would therefore reduce inflation and vice versa for a negative supply shock.

Rising inflation may thus be the result of a positive shock to demand, a negative shock to supply, or a combination of the two. In addition, external factors such as global supply and demand, play a significant role.[7] This is not least the case in a small open economy like Denmark. The crux of the matter is that, after a period in which demand has exceeded supply, thereby resulting in an increase in inflation, it may be necessary with a period of lower capacity utilisation and higher unemployment to bring inflation back down.

The role of commodity prices

Prices of many commodities are determined in global markets. Rising commodity prices due to global shortages may therefore be regarded as an external shock from the perspective of a single country. If the prices of commodities rise, this will, in the short term, lead to higher prices of the goods that consumers buy in the stores. This reflects that commodities constitute an important input into production, and higher prices of raw materials therefore increase production costs.

Companies can initially choose to partly or fully absorb the higher production costs through lower mark-ups. This may especially be the case in a recession where demand is weak. If, in turn, demand is strong, companies may be more inclined to raise prices. In the long term, an increase in production costs will tend to be reflected in consumer prices. A shock to inflation which reflects shortages of commodities will generally mean that consumer prices stabilise at the new higher level once the extraordinary increases in commodity prices cease. Inflation thus decreases again in such a situation without a need for a period of low capacity utilisation.

However, if higher prices that reflect an increase in commodity prices translate into higher wages and salaries, this could develop into a wage-price spiral. A wage-price spiral describes a situation where higher costs and thus higher consumer prices are reflected in higher wage growth, which, in turn, result in higher costs and prices. This will then lead to higher increases in wages, resulting in a spiral-like situation in which prices and wages mutually feed each other. Rising commodity prices, which generally only have a transient effect on inflation, may thus cause inflation to take hold via wage formation. If this is the case, a period of lower capacity utilisation may also be necessary to bring down inflation.

Monetary policy, economic activity and inflation

Monetary policy plays a crucial role in ensuring low and stable inflation. The interaction between inflation and capacity pressures in the economy means that in the long run a central bank can always bring down inflation. It can do so by setting monetary policy interest rates above the level compatible with stable wage and price growth when the economy is at its potential – the so-called natural real interest rate, r*.[8] When the monetary policy rate is higher than r*, it will encourage households and companies to reduce their consumption and investments in capital and buildings. In this way, capacity pressures diminish and thus also the pressure on prices and wages.

Conversely, if there is a need for inflation to rise, the central bank can stimulate demand by lowering interest rates below r*. There are indications that r* has been very low across the advanced economies in recent years, see chart 2. At the same time, the possibility of holding cash means that there is a limit to how low the actual interest rates can be. As a result of the unusually low r*, the spread between r* and

7 See, for example, Martina Jasova, Richhild Moessner and Elod Takats, Domestic and global output gaps as inflation drivers: what does the Phillips curve tell?, *Bank for International Settlements Working Paper*, no. 748, 2018.

8 See, for example, Michael Woodford, Interest and Prices, Princeton University Press, 2003.

the lower bound on interest rates has been smaller for a number of years compared to the past. This has weakened central banks' potential for stimulating the economy by lowering monetary policy rates.

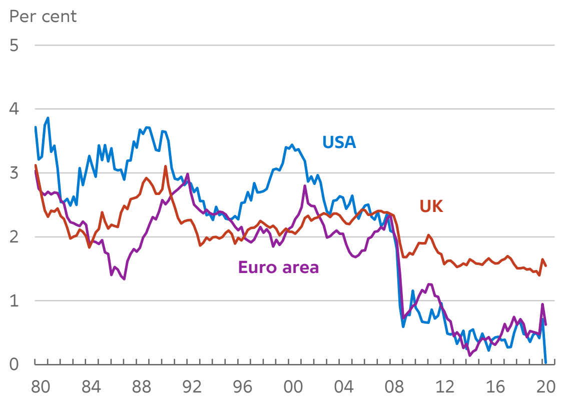
To ensure accommodative financial conditions and thus to support inflation, a number of central banks have therefore resorted to so-called forward guidance and quantitative easing in recent years. For example, this applies to both the ECB and the US central bank, the Federal Reserve. Through forward guidance, central banks have indicated their intentions to keep monetary policy rates low for a certain period. Quantitative easing entails that central banks have bought securities, including, not least government bonds. Both forward guidance and quantitative easing have contributed to reducing interest rates in financial markets.

Inflation is driven by the interaction between supply and demand in the economy, and central banks can never stabilise it completely. This reflects a number of factors, including that the economy is always hit by unforeseen events and that monetary policy works with a lag. The reason for the lag is that it takes time from when the central banks change interest rates and until it affects household and corporate consumption and investments and thus demand in the economy. Next, it also takes time until the change in demand affects companies' price setting and thus inflation.

It is therefore not possible to take precise account of the fluctuations in demand that will always occur in a market economy. Likewise, central banks cannot prevent, for example, shocks to commodity prices from affecting inflation in the short term. Finally, it is not possible to determine precisely to what extent, for example, an increase in economic activity reflects supply and demand conditions, respectively. Nor it is therefore clear how a change in economic activity affects inflation, cf. the discussion of the effects of the two types of shocks. As a supply shock affects potential output, it would also not be optimal to iron out all fluctuations in economic activity. Instead, focus should be on stabilising the economy *around* its potential.

If there is confidence that central banks will keep inflation under control in the long term, this will in itself reduce the likelihood that price and wage growth diverge from the desired level. This applies to shocks to both the demand side and the supply side of the economy. It is essential in this respect that central banks have clearly defined objectives. Targets for monetary policy indicate the level around which central banks ensure that inflation fluctuates in the long term.

R* estimates for USA, euro area and UK since 1980 Chart 2



Source: Federal Reserve Bank of New York based on Holston, Laubach, and Williams, Measuring the Natural Rate of Interest: International trends and Determinants, *Journal of International Economics*, 108, supplement 1, May, pp. 39-75, 2017.

The link between monetary policy and economic activity also means that central banks can stimulate demand in the short term, thereby temporarily increasing output and employment by pursuing an accommodative monetary policy. But, in the longer term, this will lead to higher wage and price growth, while activity will drop back to its long-run level, which is determined by structural factors. In the long run, there is consequently no trade-off between inflation and economic activity.

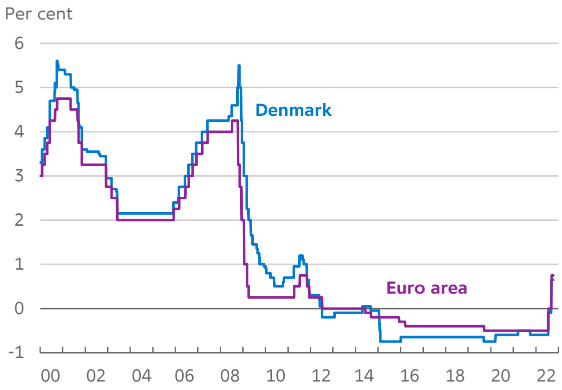
The objectives of central banks

The vast majority of central banks have an objective of maintaining stable prices. This reflects precisely that central banks can control inflation in the long term and that it is not possible to achieve sustained higher economic activity at the expense of higher inflation. As inflation depends on economic activity relative to its potential, a focus on stabilising inflation will also contribute to stabilising capacity utilisation. When setting monetary policy rates, a central bank with an inflation target will therefore need to distinguish between whether fluctuations in the economy are driven by shocks to supply or demand, as this is essential to the effect on inflation. Typically, central banks target a rate of inflation of two per cent per year. This applies both to leading central banks such as the ECB, the Federal Reserve and Bank of England (the central bank of the United Kingdom), but also to, for example, Norges Bank and Sveriges Riksbank – the central banks of Norway and Sweden, respectively.

In addition to price stability considerations, central banks' mandates for monetary policy may also include broader economic considerations. The Federal Reserve has what is often referred to as a dual mandate, in which importance is attached to both low inflation and high employment.[9] In practice, however, the Federal Reserve has ensured inflation that fluctuates around 2 per cent for a large number of years, see chart 1. This reflects precisely the fact that it is not possible via monetary policy to achieve a sustained long-term boost to activity and employment in exchange for accepting higher inflation. Conversely, low and stable inflation creates the best environment for high employment. At the ECB, price stability is unambiguously the first priority. In addition, without prejudice to the objective of price stability, the ECB shall support the general economic policies in the Union.[10]

In accordance with the National Bank of Denmark Act (*Nationalbankloven*) from 1936, Danmarks Nationalbank's task is to maintain a safe and secure monetary system.[11] In more contemporary parlance, this means that Danmarks Nationalbank is responsible for ensuring price stability in Denmark – i.e. that inflation is low. However, the objective has not been translated into an explicit target for the level of inflation. Instead, the fixed exchange rate policy, which has been decided by the Danish Government in consultation with Danmarks Nationalbank, entails that Danmarks Nationalbank has the task of maintaining a fixed exchange rate of the Danish krone against the euro.[12]

Monetary policy interest rates since 2000 Chart 3



Note: Until 14 October 2008, the ECB's interest rate for the weekly open market operations is shown, while the ECB's deposit rate is shown for the subsequent period. For Danmarks Nationalbank, the interest rate for certificates of deposit is shown.
Source: Macrobond and Danmarks Nationalbank.

As a consequence of the ECB's focus on price stability in the euro area, the fixed exchange rate policy means that prices in Denmark also remain stable. Chart 3 shows that there has been a close correlation between price developments in Denmark and the euro area for several decades. However, although in the long run prices in Denmark follow prices in the euro area, there is no one-to-one correlation in the short run. This reflects a number of factors, including that developments in prices in the short and medium term depend on supply and demand conditions in the individual countries, and

9 See Board of Governors of the Federal Reserve System, Monetary Policy Principles and Practice (*link*).

10 See Treaty on the Functioning of the European Union, Article 127 (1) (*link*).

11 See National Bank of Denmark Act, 1936 (*link*).

12 See Morten Spange and Martin Wagner Toftdahl, Fixed exchange rate policy in Denmark, *Danmarks Nationalbank Quarterly review*, 1st quarter, March 2014, for details on the implementation of the fixed exchange rate policy.

that the Danish economy is not always synchronised with the euro area.

Danmarks Nationalbank's recommendations for economic policy

The fixed exchange rate policy means that monetary policy rates are reserved for maintaining a stable krone exchange rate. This implies that Danmarks Nationalbank does not conduct monetary policy on the basis of economic developments, and Danmarks Nationalbank's recommendations for macroeconomic policy therefore primarily concern fiscal policy. Just like monetary policy, fiscal policy affects aggregate demand in the economy. It is therefore important that fiscal policy is conducted in a way that contributes to a stable economic cycle and thus also support stable inflation. The recommendations form part of Danmarks Nationalbank's biannual publication Outlook for the Danish Economy. In addition, Danmarks Nationalbank's Board of Governors communicates its fiscal policy recommendations on an ongoing basis in speeches and interviews, etc. as well as in meetings with decision-makers.

Danmarks Nationalbank also provides macroprudential policy recommendations. Macroprudential policy primarily concerns regulation of households' access to different types of loans as well as requirements for banks to be sufficiently resilient. The primary objective of macroprudential policy is to reduce the build-up of risks that can threaten the stability of the financial system as well as to limit the damaging effects when a crisis occurs.[13] Macroprudential policy thus often contributes to making macroeconomic developments more stable.

Macroprudential measures often have a structural aim and therefore need to be assessed based on their contribution to long-term financial and macroeconomic stability. However, it may be beneficial to consider their timing so that they also contribute to stabilising the economy in the short term. For example, tightening of regulation will often have a dampening effect on the build-up of risks and can therefore have a particularly beneficial effect if introduced during a boom, where the risk of financial imbalances building up is larger.

Finally, appropriately designed structural policies may contribute to ensuring a robust economy. In this regard, Danmarks Nationalbank has issued recommendations for housing taxation aimed at making the housing market, and thus the economy, more stable. In the labour market, structural reforms have contributed to the ability of companies to adjust employment to the prevailing situation on an ongoing basis. This contributes to high levels of employment in the long term. Correspondingly, structural measures may be aimed at ensuring well-functioning markets for goods and services. While monetary and fiscal policies primarily affect the development of the economy over the business cycle, structural policy measures can affect the long-term levels of employment and production around which the economy fluctuates.

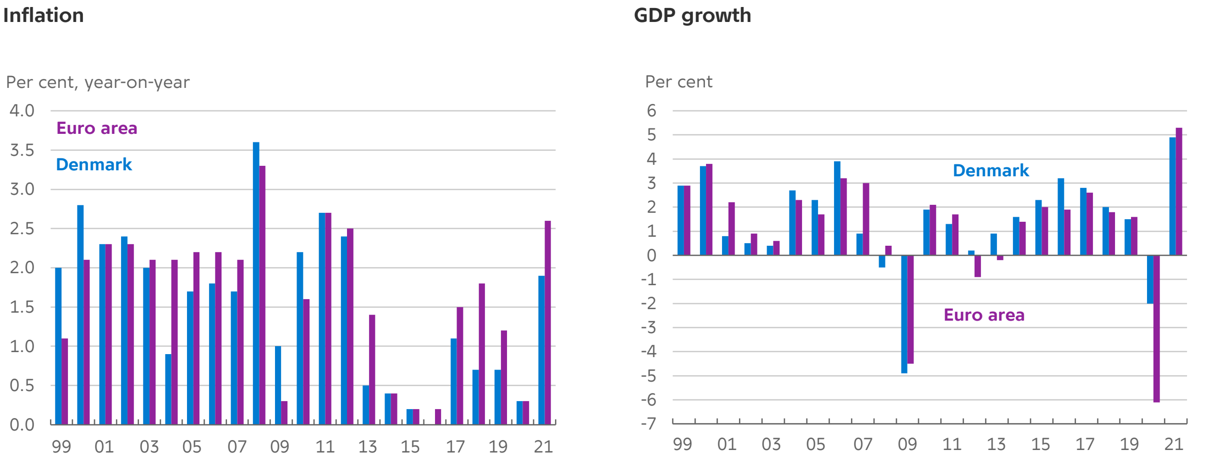
Macroeconomic stabilisation in a fixed exchange rate regime

Three mechanisms contribute to stabilising activity in the Danish economy around its long-term level and to keeping inflation under control. Together, they are the foundation for the Danish economy having developed steadily in the four decades since the introduction of the fixed exchange rate policy relative to the vast majority of the advanced economies. It is essential that there is full credibility regarding the overall economic policy framework. This applies both to Danmarks Nationalbank's ability and willingness to maintain the fixed exchange rate and to successive governments' focus on ensuring a sustainable fiscal policy. The three stabilisation mechanisms are:

1. Stabilisation through the ECB's monetary policy
2. Self-stabilisation through competitiveness
3. Stabilisation through fiscal policy.

13 See Danmarks Nationalbank, Rising interest rates and prices can challenge banks' customers, *Danmarks Nationalbank Analysis (Financial Stability)*, June 2022, for Danmarks Nationalbank's latest analysis of financial stability with accompanying macroprudential policy recommendations.

Inflation and GDP growth in euro area and Denmark Chart 4



Source: Macrobond.

Stabilisation through the ECB's monetary policy
The fixed exchange rate policy means that interest rates in Denmark largely follow interest rates in the euro area, see chart 3. When the ECB changes its monetary policy rates, Danmarks Nationalbank will often change Danish monetary policy rates within the same day. This ensures that the exchange rate of the Danish krone against the euro is kept stable.

However, during periods of pressure on the Danish krone, it may be necessary to widen the spread between the monetary policy rates in Denmark and the euro area. If the pressure is towards a weakening of the krone, Danmarks Nationalbank will raise interest rates and thus create a positive spread to the ECB, as happened during the financial crisis in 2008. During the 'reverse' krone crisis in 2015, there was conversely pressure towards a strengthening of the Danish krone, and Danmarks Nationalbank therefore widened the interest spread in a negative direction.

Conversely, Danmarks Nationalbank will not raise interest rates in response to increasing capacity pressures and prospects of higher inflation in Denmark. Interest rates will only be raised if the increasing capacity pressures also exists in the euro area, and this causes the ECB to raise interest rates. There is considerable co-movement between the economies of Denmark and the euro area. This applies to both growth and inflation, and this has not least been the case since the global financial crisis, see chart 4. A boom in Denmark with high capacity pressures and prospects of rising prices will therefore also often coincide with a boom in the euro area.

From a macroeconomic perspective, two economies that develop relatively similarly will often benefit from an approximately coincident monetary policy. In fact, a study from 2012 finds that, in the years 1994-2009, there was a relatively close co-movement between the actual monetary policy interest rate in Denmark, which largely follows from the ECB's monetary policy, and the interest rate that follows from a so-called Taylor rule based on developments in the Danish economy. This applies particularly in the latter part of the period.[14] A Taylor rule provides a reference point for the monetary policy rate based on a given combination of inflation and capacity pressures.

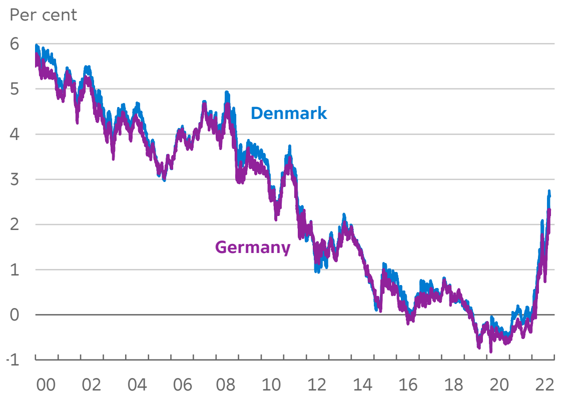
The co-movement between the actual interest rate and the interest rate resulting from the Taylor rule

14 See Søren Hove Ravn, Rules versus Dictation: A Taylor Rule for Denmark, *Nationaløkonomisk Tidsskrift*, 150, 1, 2012.

reflects a relatively close co-movement in economic development in Denmark and the euro area. This indicates that monetary policy – even though it is not based on Danish conditions – has typically contributed to macroeconomic stabilisation.

Chart 4 indicates that the relatively close co-movement between the Danish and European economies has continued in the period after 2009 in which the Danish and European economies have to a certain extent been affected by the same shocks.[15] This applies not least to the global financial crisis, during which all advanced economies were hit by a sharp downturn. The covid-19 pandemic and Russia's invasion of Ukraine are other examples of how the Danish economy is often driven by the same factors as the euro area.

10-year government bond yields Chart 5



Source: Macrobond.

There is also a close correlation between long-term interest rates in Denmark and the euro area, see chart 5. The reason for this is that long-term interest rates largely reflect market participants' expectations of future monetary policy rates. In addition, the Danish economy is also experiencing approximately the same stimulating effect of the ECB's quantitative easing as the euro area countries.[16] Recently, market rates in Denmark have risen across maturities as a consequence of rising inflation and the ECB's tightening of monetary policy. This contributes to dampening demand and thus inflation, which has risen over the past year in line with inflation in the euro area.

Monetary policy may not always be optimal from a cyclical perspective.[17] For example, during the first 10-15 years of the fixed exchange rate policy, the Danish economy was often out of sync with the euro area. There are also a number of examples of Danmarks Nationalbank significantly raising or cutting interest rates during periods of pressure on the Danish krone, even though this has not immediately contributed to stabilising the cyclical trends.

However, the cost of periodically having to defend the fixed exchange rate by way of interest rate changes is perceived to be more than offset by the benefits to which the policy has given rise over a large number of years. First of all, the fixed exchange rate policy has supported a long period of low inflation and – relative to other comparable countries – stable developments in output and employment.[18] In addition, there are indications that, because of the fixed exchange rate policy, Denmark has enjoyed the same trade benefits of the euro as the euro area countries.[19]

15 Currently, however, interest rates in both Denmark and the euro area are significantly below the level that follows from a Taylor rule. This reflects, among other factors, that inflation is currently affected by a significant supply shock in the form of higher commodity prices. Taylor rules are not well suited for describing the monetary policy response to a supply shock.

16 See Jakob Roager Jensen, Jakob Guldbæk Mikkelsen and Morten Spange, The ECB's unconventional monetary policy and the role of exchange rate regimes in cross-country spillovers, *Danmarks Nationalbank Working Paper*, no. 119, October 2017.

17 In practice, however, it is not clear whether small countries with a floating exchange rate actually have a major influence on their domestic financial conditions, see Helene Rey, Dilemma not trilemma: The global financial cycle and monetary policy independence, *NBER Working Papers*, no. 21162, 2015.

18 See, for example, Anders Møller Christensen and Niels Lynggård Hansen, The monetary policy regime and the development in central macroeconomic variables in the OECD countries 1970-2005, *Nationaløkonomisk Tidsskrift*, volume 147, 2009.

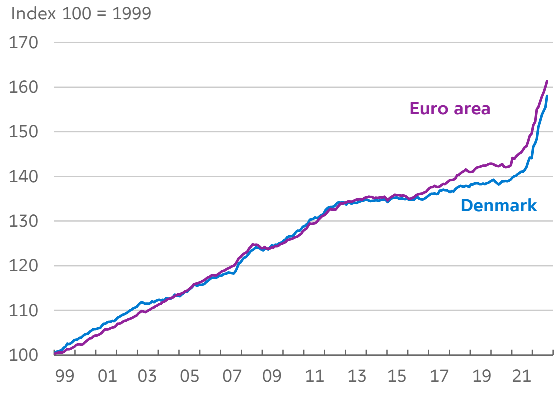
19 See The Economic Councils, Denmark and the Euro, Chapter II in Danish Economy, Spring, 2009.

Self-stabilisation through competitiveness

As previously described, a period with high capacity pressures will lead to higher price and wage growth. In such a situation, central banks with an explicit inflation target will typically raise interest rates to dampen demand. This is not possible in Denmark, as Danish monetary policy is aimed at maintaining a stable krone exchange rate. This means that interest rates will only be increased if there are prospects of higher inflation in the euro area.

However, the fixed exchange rate policy has a built-in stabilisation mechanism in the form of wage competitiveness. Wage competitiveness is an expression of the cost of producing a product or service in Denmark relative to abroad. If it is relatively expensive to produce goods or services in Denmark, this is equivalent to poor wage competitiveness.

Price growth since 1999 Chart 6



Note: HICP.
Source: Macrobond.

If Danish prices and wages rise faster than in the euro area as a result of high capacity pressures for a period of time, Danish companies will find it more difficult to sell their goods and services. This applies to export markets, where Danish goods are in competition with goods produced in other countries. But it will also be the case on the domestic market, where Danish-produced goods can be replaced by imports. This means that a period with rising prices due to high capacity pressures will typically make itself felt in a weakening of wage competitiveness and a reduction in net exports. This will in itself contribute to reducing capacity pressures.

A period with high capacity pressures due to a high level of consumption and investment and thus weak net exports will also be reflected in lower savings among Danish households and companies. This will result in lower accumulation of wealth and thus in weaker consumption and investment in the longer term. Via the effect on wealth, the reduction in net exports also contributes to dampening domestic capacity pressures in the longer term. The weaker capacity pressures result in wage and price growth again being brought back into line with the euro area. Developments since 1999 illustrates that it is not possible to have a development in prices in Denmark that persistently differs from that of the euro area, see chart 6.

Wage growth and thus production costs do not react immediately to fluctuations in capacity pressures. Economic stabilisation through competitiveness therefore has a very gradual effect, and activity in the Danish economy may deviate significantly from the structural level before the adjustment through competitiveness takes effect. To counteract large and lengthy fluctuations in the economy, further stabilisation will therefore often be appropriate. Domestic fiscal policy can contribute in this situation.

Stabilisation through fiscal policy

Stabilisation through competitiveness and through spillover effects from the ECB's monetary policy takes place without active decision-making from the Danish authorities. The contribution of fiscal policy to the stabilisation of cyclical trends can be divided into two elements. One contribution comes from the so-called automatic stabilisers, while the other contribution comes from active fiscal policy decisions, also often referred to as discretionary fiscal policy measures.

The automatic stabilisers entail that a number of central government revenues fluctuate automatically in line with the economic development. For example, in a recession, expenditure on income transfers to the unemployed will typically increase. At the same time, tax revenues will decline as a result of a reduction in employment and economic activity. This means that there will be a debt-financed transfer of funds from the public sector to the private sector, which contributes to supporting consumption and thus mitigating the depth of a downturn. During a boom, the opposite will apply.

As the name suggests, the automatic stabilisers therefore function without discretionary fiscal policy decisions being made. In Denmark, the automatic stabilisers are large relative to most countries. This reflects the relatively high level of Danish income transfers and taxes and the progressive structure of the tax system, which means that a significant part of the income increases will be taxed at a high rate during a boom.

In addition to the automatic stabilisers, the Danish Parliament can respond to cyclical development through active fiscal policy decisions. These may be changes in public consumption and investments, changes in taxes and duties or changes in income transfers. Measures that reduce the government budget balance will often contribute to increasing economic activity and can thus supplement the effects of the automatic stabilisers during a recession. During a boom, it may instead be relevant to use measures aimed at improving the government budget balance.

Like monetary policy, fiscal policy works with a delay. This partly reflects that it takes time to make political decisions. Furthermore, there will be a delay from when the decision is made and until a given action is implemented. For example, it will typically take some time from the adoption of a public investment and until the work is at its highest. Conversely, changes in taxes and duties can, for example, be implemented more quickly. Finally, there may be a delay between the implementation of the measure and until it has an effect on household and corporate behaviour and thus on economic activity.

Fiscal multipliers

The effect of a fiscal policy measure on economic activity can be calculated on the basis of the fiscal multipliers. The fiscal multipliers include the direct effect that, for example, an increase in public employment will have on public production. On top of this are a number of additional effects on activity. This may, for example, be through increased private consumption as a result of increased public employment, which will support activity in the private sector. In the event of a tax reduction, there will typically be no direct effect on public activity, whereas there will be an effect on economic activity if households adjust consumption and employment.

A joint characteristic of the possible measures is that while the direction of their impact is often clear, there is considerable uncertainty about the magnitude. However, there are indications that the multipliers are higher for public spending than for taxes.[20]

Fiscal policy multipliers and fixed exchange rate policy

In a fixed exchange rate regime, the multipliers are potentially greater than with a floating exchange rate. This reflects that fiscal policy easing in an economy with a floating exchange rate may result in rising interest rates, as the increase in economic activity may lead to higher inflation and thus create a need for tightening of monetary policy. Rising interest rates potentially counteract part of the effect of fiscal policy easing. This so-called crowding-out effect via expectations of tighter monetary policy does not exist in a fixed exchange rate regime in which interest rates are set solely on the basis of the exchange rate.

However, very extensive fiscal easing measures that are not aligned with the cyclical position of the economy may potentially create uncertainty among market participants about the political support for the fixed exchange rate policy. This is the case if fiscal easing leads to large public budget deficits and strong price and wage growth, resulting in a sharp deterioration in competitiveness. If an irresponsible fiscal policy leads to uncertainty among market participants as to whether the government will give up the fixed exchange rate policy, this may necessitate sharp interest rate increases to counteract a weakening of the Danish krone. The increases in interest rates will compensate investors for the risk of a depreciation of the Danish krone against the euro.

While the fixed exchange rate policy supports the fiscal multipliers, the Danish economy's substantial openness to international trade may cause a significant 'leakage effect'. The leakage effect reflects

20 See Søren Hove Ravn and Morten Spange, The Effects of Fiscal Policy in a Small Open Economy with a Fixed Exchange Rate, *Open Economies Review*, 25:451-476, 2014, and Jacob Røpke, Grane Høegh and Anders Kronborg, Finanspolitiske multiplikatorer i MAKRO (Financial policy multipliers in MAKRO), the DREAM group, 2021 (in Danish only).

that a significant share of the increase in demand resulting from fiscal policy easing will be covered by imports. Higher imports reduce the effect of fiscal policy easing on domestic production and employment.

Fiscal policy in Denmark and the euro area

As a result of the fixed exchange rate policy, the fiscal policy framework is very similar to the situation in the individual euro area countries. In the euro area, monetary policy will also not always be optimally aligned with the conditions in the individual country. This reflects that business cycles across the euro area are not fully synchronised, whereas the ECB's monetary policy rates apply to all euro area countries. At the same time, as in Denmark, fiscal easing in one of the small or medium-sized euro area countries will not affect expectations for the ECB's monetary policy, as the effect on overall euro area inflation will be minimal.

However, the framework conditions for fiscal policy in Denmark differ from those of the euro area in one respect. Regardless of the monetary policy regime, large government deficits may result in investors demanding higher government bond yields to compensate for the risk of the government failing to meet its obligations. However, as described above, an irresponsible fiscal policy pursued over an extended period of time may lead to uncertainty among investors about the government's continued support for the fixed exchange rate policy and thus necessitate interest rate increases. In a fixed exchange rate regime, an irresponsible fiscal policy may therefore result in a further increase in government bond yields relative to countries with a floating exchange rate.

However, for some euro area countries, there have, conversely, been examples of market participants' lack of confidence in the sustainability of the economic policy having resulted in a concern that the government debt will be redenominated to a (reintroduced) national currency.[21] This has resulted in higher interest rates for these countries' government debt. On this basis, the ECB announced the so-called programme for Outright Monetary Transactions (OMT) in 2012. However, the programme has never been activated.[22]

Principles for an appropriate fiscal policy

In the following, a review is provided of the principles for an appropriate fiscal policy which form the basis of Danmarks Nationalbank's recommendations. It is taken for granted in the recommendations that fiscal policy is ultimately sustainable in the sense that public finances are balanced in the long term. This is an important element in the medium-term and long-term projections that Danish governments have a tradition for preparing.[23] Long-term sustainability creates room for using fiscal policy as a cyclical policy instrument – including for making decisions that weaken the general government budget balance for a period of time during a recession.

Based on the assumption that fiscal policy is sustainable in the long term, Danmarks Nationalbank's recommendations can aim to contribute to a stable economic cycle with moderate fluctuations in activity and employment. This will also contribute to preventing unnecessarily large fluctuations in inflation and thus contribute to ensuring that Denmark has a robust economy. However, fiscal policy cannot even out all fluctuations in the economy. This reflects that there is great uncertainty about the current state of the economy and the impact of a given fiscal policy measure, and that there is a delay from when a fiscal policy measure is adopted and until it has an effect on the economy. But, overall, the direction of the fiscal policy should reflect the current cyclical position.

21 See Roberto A. De Santis, A measure of redenomination risk, *ECB Working Paper*, no. 1785, 2015.

22 See Benoit Cæure, Outright Monetary Transactions, one year on, 2013, speech at the conference "The ECB and its OMT programme", organised by Centre for Economic Policy Research, German Institute for Economic Research and KfW Bankengruppe.

23 See the Danish Ministry of Finance, 2030-planforløb: *Grundlag for udgiftslofter 2026* (2030 development: Basis for expenditure ceilings, 2026 (in Danish only)) for the latest medium-term projection, 2022.

Fiscal policy and capacity pressures
Fiscal policy recommendations should be based on an assessment of capacity pressures that can be summarised in the output gap. The output gap is a measure of current activity in the economy relative to its potential, also referred to as the structural level. The structural level is characterised by the pressure on the labour market and capacity utilisation within firms being compatible with a stable prices and wages growth. If the activity is higher than the structural level, the rate of increase in prices and in wages and salaries will instead tend to pick up.

The role of fiscal policy as a cyclical instrument is to stabilise the economy so that fluctuations around the structural level become as small as possible. However, the structural level cannot be calculated with precision. As previously discussed, an increase in economic activity may reflect a positive supply shock, where, for example, new technologies make it possible to produce more using the resources available. It will lead to a higher structural level of output. An increase in activity is therefore not necessarily an indication of an increase in capacity pressures, but may instead reflect a higher structural level. Periods with high growth will, however, often reflect that the economy is growing faster than the structural level as a result of strong demand and that capacity pressures are therefore increasing.

The delay in the impact of a fiscal policy measure from decision to it having an effect on the economy means that a snapshot of the current output gap is not sufficient. Even if, for example, the output gap is negative at the time at which a fiscal measure is decided, it may have become positive before the fiscal measure has its maximum effect on economic activity. Against this background, it is essential that fiscal policy decisions are taken on the basis of a projection of the economy over the coming years. Otherwise, there is a risk that fiscal policy will act pro-cyclically and thus intensify fluctuations in the economy. This is one of the reasons why Danmarks Nationalbank regularly prepares and publishes projections for the Danish economy.

Fiscal policy measures often have a direct impact on the daily lives of large groups of households. For example, a change in taxes or transfers will directly affect the disposable income of households. A change in government expenditure could affect the level of public services, for example in the form of childcare and health services, just as it could affect the job situation of public sector employees. There are consequently some adjustment costs associated with adjustments to fiscal policy.

Fiscal policy consists of a large number of decisions that concern selected parts of the central government budget. There will thus always be a number of measures with budgetary and aggregate demand implications that are being considered implemented for political reasons unrelated to the cyclical situation. The adjustment costs mean that the structuring of a fiscal policy with the desired fiscal effect can preferably be based on the proposals that are already being considered implemented for other reasons. However, if the cyclical situation indicates that major interventions are needed, it may be necessary to implement measures that would otherwise not have been considered.

Fiscal policy is particularly important in situations in which there is a risk of very unfavourable economic developments. In a situation with a tight labour market and high inflation, there is, for example, an increased risk that a wage-price spiral will develop, implying that inflation becomes entrenched. Once a wage-price spiral is allowed to develop, a prolonged economic slowdown with relatively high unemployment may be necessary to bring inflation back down. Although it is not the most likely scenario, it would potentially be so damaging that particular importance should be attached to this risk when forming the recommendations for fiscal policy.

Link between Danish fiscal policy and developments in the euro area
As previously described, the ECB's monetary policy will contribute to stabilising the Danish economy and inflation to the extent that the Danish economy fluctuates in line with the euro area. Discretionary fiscal policy measures are therefore particularly relevant if developments in the Danish economy are out of sync with the euro area. This may, for example, be the case if capacity pressures in Denmark are noticeably higher than in the euro area. In such a situation, the ECB's monetary policy will typically be more accommodative than what is optimal for the Danish economy from a macroeconomic perspective. Here, fiscal policy can be used to further dampen the economy.

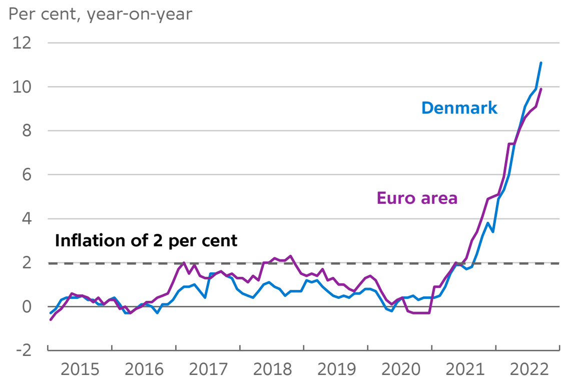
Conversely, fiscal policy cannot be used to achieve a development in prices that persistently deviates from that of the euro area. In a situation with, for example, high capacity pressures and high inflation in both Denmark and the euro area, a tight Danish fiscal policy can contribute to dampening capacity pressures and inflation in Denmark. In the absence of a corresponding tightening in the euro area, this will mean that the Danish economy will gradually become more competitive. As described in the section on self-stabilisation through competitiveness, this will increase capacity pressures and thus ultimately inflation until prices have 'caught up' with the euro area. This underlines that fiscal policy measures are particularly suitable as a stabilisation instrument in situations in which capacity pressures in the Danish economy deviate from the euro area.

The profile for fiscal policy in the euro area is also relevant. If fiscal policy for the euro area as a whole is accommodative, it will support activity and inflation. A more accommodative fiscal policy in the euro area will therefore all else equal encourage the ECB to pursue a tighter monetary policy, which, through the fixed exchange rate policy, will also lead to higher interest rates in Denmark. Other things being equal, this means that fiscal policy in Denmark must be more accommodative than would otherwise be the case. When conducting domestic fiscal policy, it is thus relevant to take fiscal policy in the euro area into account. *Differences* in the cyclical situation between Denmark and the euro area should be reflected in *differences* in the degree of fiscal tightness.

Fiscal policy and structural position of the economy
Finally, it is important that fiscal policy measures are assessed on the basis of the structural position of the Danish economy. In recent years, the Danish economy has been characterised by large current account surpluses, reflecting both large public and private savings. Concurrently, public finances are sound, and there is substantial credibility regarding the fixed exchange rate policy. Against this background, there is leeway for capacity pressures that periodically give rise to slightly higher wage and price increases than in the euro area.

Inflation in Denmark and euro area since 2015

Chart 7



Note: Inflation has been calculated using HICP.
Source: Macrobond.

Economic policy in the current situation with capacity pressures and high inflation

Inflation is currently high across the advanced economies. This also applies in Denmark and the euro area, see chart 7.[24] As a consequence of high inflation, market rates have risen. This increase is supported by the ECB having been tightening monetary policy in the euro area since the beginning of the year. This was initially done through tapering of the asset purchase programmes and through signals of future increases in monetary policy interest rates. At the ECB's interest rate meetings on 21 July and 8 September, the ECB also raised its monetary policy interest rates by a total of 1.25 percentage points, which, as a consequence of the fixed exchange rate policy, has been reflected in a corresponding increase in interest rates by Danmarks Nationalbank.

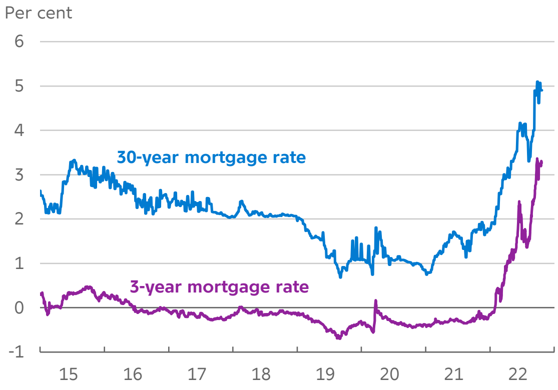
24 See Danmarks Nationalbank, The pressure on the economy should be eased, *Danmarks Nationalbank Analysis (Outlook for the Danish economy)*, September 2022, for analyses of the development in inflation in Denmark.

Overall, the ECB's communication and other monetary policy measures since the turn of the year have resulted in a significant increase in interest rates in Denmark, see chart 8. Danmarks Nationalbank's analyses indicate that the tighter financial conditions will have a dampening effect on demand in the Danish economy over the coming years.[25] The ECB's monetary policy is consequently contributing to dampening activity and thus reducing inflation over the coming years. However, capacity pressures are currently greater in Denmark than in the euro area. While Danmarks Nationalbank finds that the output gap in Denmark is positive, most estimates indicate that it is negative in the euro area. The ECB's monetary policy is thus aligned to a cyclical position that differs from the position in Denmark.

Overall, the output gap in the Danish economy is expected to narrow and be closed towards 2024, and inflation is expected to fall to 1.7 per cent in 2024 for the year as a whole.[26] However, core inflation in Denmark, which excludes the most volatile components such as energy and food, is expected to be 3.2 per cent in 2024, and thus to be above the ECB's inflation target. This reflects an expectation of rising wage growth and increases in other costs of production, which are expected to be reflected in consumer prices. In the current situation, in which the economy has been subjected to very large and unknown shocks, and where inflation is at a level not seen for several decades, the projection is subject to considerable uncertainty.

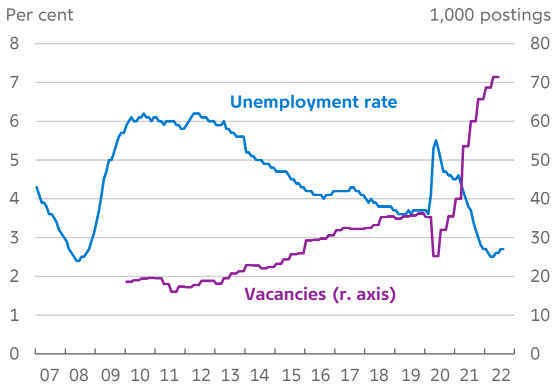
The sharp global increase in demand after the end of the lockdowns has meant that there is great demand for labour in many countries, with resulting low unemployment. This applies, not least, to Denmark, see chart 9, and this is expected to translate into higher wage growth over the coming years. However, Danmarks Nationalbank's projection is based on the assumption that inflation expectations of households and companies remain stable and that there are therefore no tendencies towards an actual

Increase in interest rates in Denmark Chart 8



Note: 30-year rates are average effective rates for new issuance. 3-year rates are estimated rates.
Source: Refinitiv Eikon and Nordea Analytics.

Unemployment rate and number of job postings in Denmark Chart 9



Source: Macrobond.

25 See Danmarks Nationalbank, Tighter monetary policy has made financing more expensive, *Danmarks Nationalbank Analysis (Monetary and financial trends)*, September 2022.

26 See Danmarks Nationalbank, The pressure on the economy should be eased, *Danmarks Nationalbank Analysis (Outlook for the Danish economy)*, September 2022.

wage-price spiral. However, there is an increased risk that this may occur.

Current fiscal policy recommendation

In view of the current situation with high inflation and a tight labour market, Danmarks Nationalbank recommends that fiscal policy be tightened to dampen demand in the Danish economy. This reduces the risk of a wage-price spiral with persistent high inflation, which will be highly damaging to the Danish economy. The current fiscal policy recommendation thus to a large extent reflects a wish to avoid a highly undesirable outcome – even if this outcome is not the most likely one.

A tighter fiscal policy in Denmark relative to the euro area is also in line with capacity pressures being higher in Denmark. One of the principles of a well designed fiscal policy is precisely that fiscal policy should especially be used in situations in which there are deviations in capacity pressures between Denmark and the euro area. In the current situation, it is thus expedient for fiscal policy to support the dampening of demand resulting from the tightening of monetary policy. This provides the best conditions for stable macroeconomic developments over the coming years.

PUBLICATIONS

NEWS

News offers quick and accessible insight into an Analysis, an Economic Memo, a Working Paper or a Report from Danmarks Nationalbank. News is published continuously.

ANALYSIS

Analyses from Danmarks Nationalbank focus on economic and financial matters. Some Analyses are published at regular intervals, e.g. *Outlook for the Danish economy* and *Financial stability*. Other Analyses are published continuously.

REPORT

Reports comprise recurring reports and reviews of the functioning of Danmarks Nationalbank and include, for instance, the *Annual report* and the annual publication *Danish government borrowing and debt*.

ECONOMIC MEMO

An Economic Memo is a cross between an Analysis and a Working Paper and often shows the ongoing study of the authors. The publication series is primarily aimed at professionals. Economic Memos are published continuously.

WORKING PAPER

Working Papers present research projects by economists in Danmarks Nationalbank and their associates. The series is primarily targeted at professionals and people with an interest in academia. Working Papers are published continuously.

DANMARKS NATIONALBANK
LANGELINIE ALLÉ 47
DK-2100 COPENHAGEN Ø
WWW.NATIONALBANKEN.DK

This edition closed for contributions on 24 October 2022

Morten Spange
Chief Monetary Policy Advisor
msp@nationalbanken.dk

ECONOMICS AND MONETARY POLICY

DANMARKS NATIONALBANK

CONTACT

Ole Mikkelsen
Communications and Press Officer

omi@nationalbanken.dk
+45 3363 6027

SECRETARIAT AND COMMUNICATIONS