Analysis

Inflation differentials as rebalancing mechanism in the EMU: the case of the Netherlands

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August 2025

DeNederlandscheBank

EUROSYSTEEM

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Summary

The Netherlands (NL) has experienced higher inflation than the euro area (EA) as a whole. The inflation differential has widened significantly since 2020. This stems from a mix of structural, cyclical and one-off factors. Structural features, such as high trade openness and the high share of gas in the energy mix, make the Dutch economy exposed to global shocks and related price swings. Another structural factor behind the inflation differential is the relative high productivity growth in the Dutch tradable sector. Cyclical factors, such as strong domestic demand, a tight labour market and expansionary fiscal policy, have also contributed to upward wage and price pressures. Temporary factors, including tax changes and regulated rent increases, have further amplified inflation in NL.

Inflation differentials can, in principle, foster economic rebalancing within the Economic and Monetary Union (EMU). When a EMU-member country is asymmetrically hit by an external shock, imbalances on the external and domestic side of the economy may arise, like a trade surplus and labour market tightness. Relative price changes across countries can help restore equilibrium within the currency union, where national monetary policy is not available to address country-specific inflation dynamics. Our analysis, focussing on the case of NL, suggests that this rebalancing mechanism is not always sufficient or timely.

Using the EAGLE model, we find that inflation differentials do not lead to a complete correction of external and internal imbalances in NL. In particular, the Dutch trade surplus remains elevated and domestic consumption remains buoyant. A key mechanism in the model is the decline in the real interest rate in high-inflation countries. This leads to higher asset prices and increases consumer demand.

More flexible wages do not necessarily improve the adjustment process. In an alternative scenario with faster wage adjustment, inflation rises more quickly, but the trade surplus does not decline significantly. Instead, the economy experiences greater volatility in real interest rates and investment, with limited gains in external rebalancing.

These findings suggest that structural imbalances need to be addressed more directly. Relying on inflation differentials alone is not be sufficient to restore equilibrium. Instead, targeted policy measures are needed to reduce excess demand and strengthen the supply side of the economy. Fiscal policy and investment play a central role in this context. In the absence of national monetary policy, a less expansionary fiscal stance is the most direct way to reduce inflationary pressures.

Shifting public spending from consumption to investment will foster non-inflationary economic growth. Addressing bottlenecks in the labour and housing market, and in the countries' infrastructure can raise potential output growth and reduce inflationary pressures over time. Moreover, higher domestic investment can reduce the structural savings surplus and contribute to external rebalancing.

Reducing productivity gaps within the EA will also narrow inflation differentials. As the Dutch case illustrates, persistent differences in productivity growth give rise to inflation differentials across countries. EU-wide reforms to enhance competitiveness, as proposed in recent reports by Draghi and Letta, can support convergence in productivity growth and so strengthen the EMU.

This analysis is structured as follows. Section 1 provides the motivation for this study. In section 2 we describe the main drivers behind the inflation differential between NL and the EA average. We analyse the implications for the economy and financial stability in section 3. In section 4 we simulate the effects of inflation differentials between EMU countries by means of the EAGLE model, to understand the role of inflation differentials in the rebalancing process. In section 5 we draw some policy conclusions.

1. Motivation

Large and persistent inflation differentials between countries within a currency union are undesirable. This is consistent with the theory of Optimal Currency Areas (Hofmann and Remsperger, 2005), which suggests that such differentials can lead to economic and financial imbalances. These imbalances cannot be corrected through nominal exchange rate adjustments, as exchange rates are fixed within a currency union. Moreover, monetary policy has limited capacity to address inflation deviations in individual EMU member states, since the central bank targets inflation for the currency area as a whole.

However, inflation differentials can also serve as an adjustment mechanism. They may facilitate a return to equilibrium following a country-specific shock, or a common shock with asymmetric effects across member states. In the absence of policy interest rate changes or exchange rate flexibility, relative price changes are an important channel for adjusting economic imbalances. We explore, in the context of the EA, under which conditions the adjustment to equilibrium is smooth or disorderly. The latter may occur if high inflation in a EA country causes the real interest rate to decline, exacerbating excess demand and economic and financial imbalances.

NL is an interesting case to explore since inflation has been substantially higher than EA average inflation. Particularly since 2020, the inflation differential has been significantly higher than before the pandemic (Table 1). The inflation differential is not a recent phenomenon though. Since the introduction of the euro in 1999, the inflation difference between NL and the EA has been positive on average. The latest projections show that inflation in NL will remain higher than in the EA at least until 2027 (DNB, 2025).

Table 1. Average inflation difference between the Netherlands (NL) and the Euro Area (EA)
Percentage annual change, difference in percentage points

		Average	
		1999-2019	*2020-2025H1*
HICP	NL	1.9	4.5
	EA	1.7	3.7
	Difference	*0.2*	*0.7*
Energy	NL	4.1	10.5
	EA	3.5	7.6
	Difference	*0.6*	*2.8*
Food	NL	2.1	5.8
	EA	2.1	5.2
	Difference	*0.0*	*0.6*
Non Energy-intensive Industrial Goods (NEIG)	NL	0.5	2.8
	EA	0.6	2.3
	Difference	*-0.1*	*0.5*
Services	NL	2.4	4.0
	EA	1.9	3.0
	Difference	*0.5*	*1.0*

Sources: CBS and Eurostat. The EA number includes NL and encompasses changes in EA membership.

2. Drivers behind inflation differentials

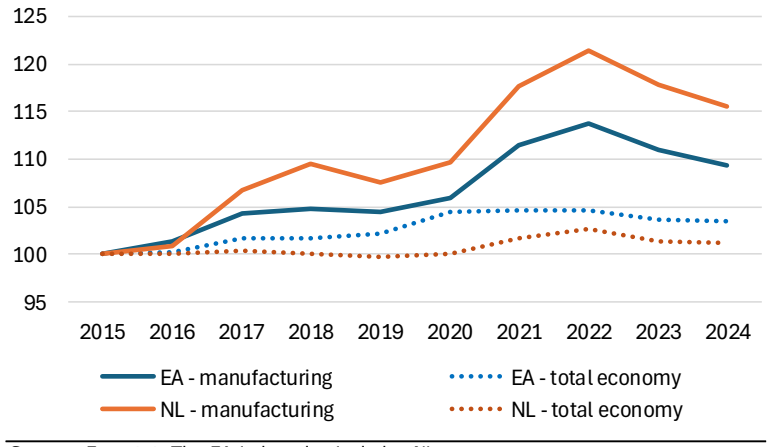
There are structural, cyclical and one-off drivers behind the relative high inflation in NL. Structural drivers are differences in productivity growth and labour markets between NL the rest of the EA (REA). Cyclical drivers stem from supply and demand shocks that have impacted NL differently than the REA. The shocks have caused imbalances on the external and domestic side of the Dutch economy, showing up in a persistent trade surplus, excess demand in the goods and labour markets and housing market imbalances. While the imbalances in the real economy are associated with upward price pressures in NL, the relative price changes viz-a-viz the REA can also contribute to the rebalancing of the Dutch economy back to equilibrium. Before we analyse the implications of the inflation differential for the Dutch economy and the rebalancing process, we first expand on the drivers behind the inflation differential in this section.

2.1 Structural drivers

Differences in productivity can help explain why inflation rates vary between countries. This concept is known as the Balassa-Samuelson effect (Stylianou, 2023). It postulates that higher productivity and wage increases in a country's tradable sector translate into wage increases also in the non-tradable sector. Due to labour mobility between sectors, wages also increase in the non-tradable sector, even though productivity growth there is lower. Since non-tradables, such as locally provided services, are not exposed to international competition, the rising labour costs are not offset by productivity gains. As a result, prices in the non-tradable sector rise, contributing to higher overall inflation in the country. This leads to a relative price increase compared to countries with lower productivity growth in their tradable sectors.

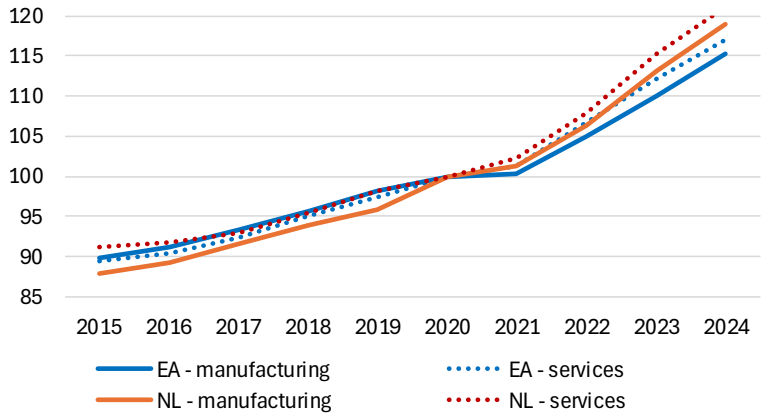
Productivity in the Dutch manufacturing industry has risen more than the EA average in the last decade (Figure 1). This went in tandem with relative high inflation in the less productive Dutch services sector (Table 1). The inflation differential has been driven by an increase of wage costs, which outpaced wage growth in the EA service sector (Figure 2). Since the manufacturing sector is relatively export-oriented, this could point to the Balassa-Samuelson effect, assuming that the price and wage increases in the non-tradable services sector have been driven by higher productivity growth in the manufacturing (tradable) sector.

Figure 1. Real labour productivity per hour: total and manufacturing
Index 2015 = 100



Source: Eurostat. The EA index also includes NL.

Figure 2. Labour cost manufacturing and service sector
Index 2020 = 100. Compensation of employees.



Source: Eurostat. The EA index also includes NL.

Other structural explanations for the relatively high inflation in NL are differences in market structures, in price and wage flexibility and policy measures. These factors can cause common external shocks to have a different (asymmetrical) effect on inflation across EA member states (Allayioti and Beschin, 2024; Coutinho and Licchetta, 2023). Two features of the Dutch economy that make inflation particularly sensitive to external shocks are its openness to world trade and its energy mix.

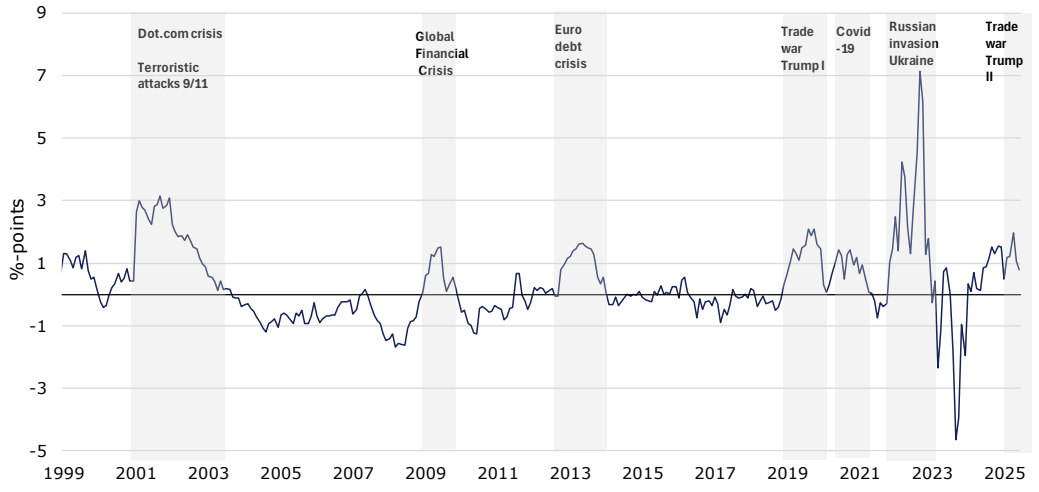
The Dutch economy is highly dependent on world trade. With a trade to GDP ratio of 156% (export and import of goods and services over GDP) the openness of the NL economy is high compared to the EA average, for which the openness ratio is 89% (2024 data, source Worldbank). Moreover, the extra-EA trade of goods of NL is large compared to other EA countries (Eurostat, 2025).

The openness implies that shocks in world trade have a relative strong impact on the Dutch economy. For instance, on the back of the rebounding of world trade growth after the pandemic the economic recovery in NL was stronger than in the EA. Thereby the global demand shock, amongst other factors like fiscal support during the pandemic, contributed to the overheating of the Dutch economy and upward inflationary pressures. A regression analysis confirms that positive global trade shocks are associated with a positive inflation differential in NL viz-a-viz the EA (see Annex 1), while controlling for the impact of tax and subsidies on inflation, which also changed markedly in periods of large shocks.

NL is also sensitive to energy shocks, especially to swings in gas prices. Gas has a substantial share in the Dutch energy mix and the weight of gas in energy inflation is relatively high (34% on average between 2020-2024, compared to 19% in the EA). The high share of gas contributes to larger inflation volatility in NL, given the inherent volatility of gas prices on international markets. This effect is amplified by NL's strong reliance on gas imports, following the halt of domestic gas production in Groningen. For instance, the extremely high gas prices in 2022 - 2023 caused a sharp increase in Dutch inflation, to which the relatively high share of variable energy contracts of households also contributed.

The inflation differential between NL and the EA often peaked after economic shocks. Particularly after shocks that hit the EA as a whole (Figure 3). It illustrates that such common shocks had an asymmetrical effect on NL, resulting in relatively high inflation in NL. Part of this asymmetric effect relates to the structure of the NL economy, particularly its openness and energy mix.

Figure 3. Inflation differential NL - EA since the implementation of the euro



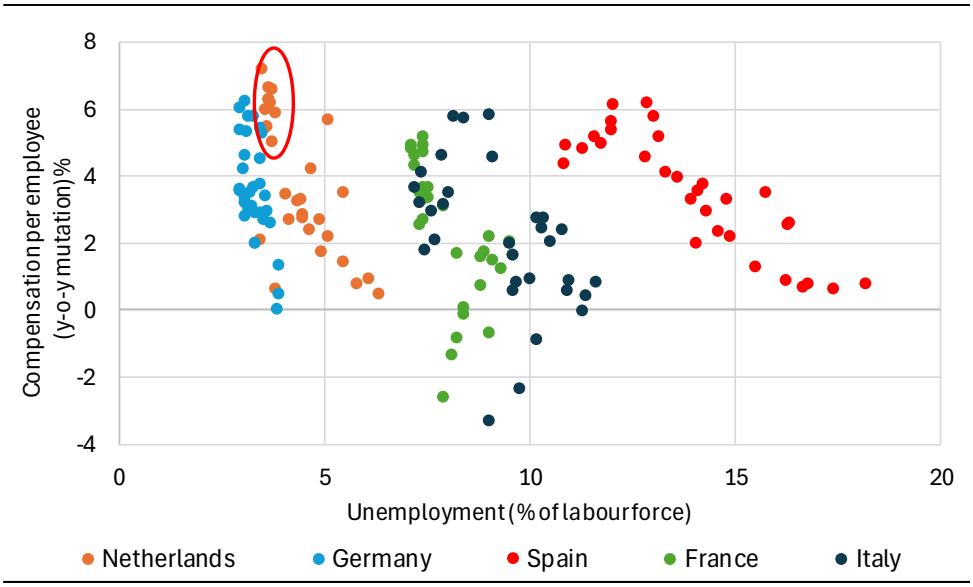
Sources: CBS and Eurostat. The EA inflation rate also includes NL.

2.2 Cyclical drivers

Inflation deviations between countries can also be explained by diverging output gaps. Research shows that differences in spending relative to the production capacity (i.e. the output gap) are correlated with inflation deviations between countries (Stylianou, 2023). Since 2019, the Dutch output gap has been significantly higher on average than that of the EA, suggesting that it contributes to explain the relative high inflation in NL. Since the output gap is a hard to measure variable, we use the unemployment rate as an alternative measure for economic slack. Using this as an explanator for inflation is consistent with the unemployment-based Phillips curve.

Excess aggregate demand is reflected in a tight labour market. Figure 4 shows the relationship between nominal wage growth and the unemployment rate in the five largest EA countries. In all these countries, the points in the Figure have shifted to the upper left in recent years, as a reflection of a tighter labour market and higher wage growth. The Dutch points in the red circle represent the last eight quarters and are in the upper left corner: it underlines that NL in particular had a tight labour market with high wage growth, compared to other EA countries. This partly explains the relative high service inflation in NL (Table 1), since wages are an important determinant of service inflation.

Figure 4. Relation between wage growth and unemployment
Quarterly data between 2017Q1-2025Q1 from five largest EA countries, corrected for covid-outliers.



Source: Eurostat.

Divergent fiscal policies in EA countries can also contribute to inflation differentials. Through increasing aggregate demand, expansionary fiscal policy can contribute to overheating of the economy. This is particularly so if an economy already has a positive output gap (Checherita-Westphal et al. 2025).

Moreover, additional labour demand from the government will put more upward wage pressure in an already tight labour market.

The NL economy has been running above capacity in recent years. In 2024 and 2025 the fiscal stance has been more expansionary than the EA fiscal stance (European Fiscal Board, 2024, 2025). The impulse that the Dutch government budget has provided to the economy (the fiscal stance) has been stimulating for GDP growth (DNB, 2025). Thereby public expenditures contributed more to domestic demand and thereby to inflation in NL than in the REA in those years. Public investment instead of consumption could reduce inflationary pressures over time, by strengthening the supply capacity of the economy. However, government investment as a share of total public expenditures has been lower in NL than in other advanced economies in recent years (OECD, 2025).

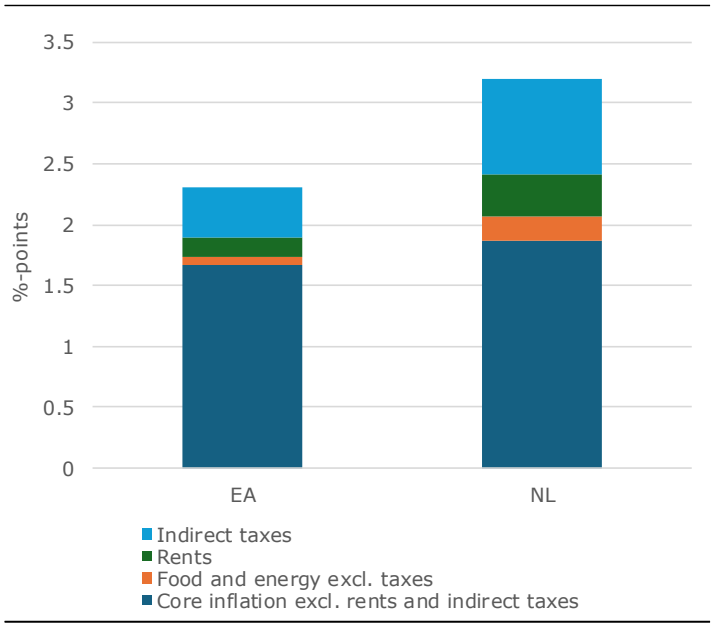
2.3 One-off factors

Recently the contribution of housing rents and fiscal measures to inflation has been almost twice as high in NL compared to the EA. In 2024 and 2025 food inflation in NL was to a large extent driven by the excise duty increases on tobacco and alcohol. Increases in indirect taxes raise the price level once, and drop out from the inflation figures a year later. In addition, the strong increase in Dutch housing rents in July 2024, which are mostly administrated and typically rise in line with the average contract wage increase, also contributed substantially to inflation between 2024-2025H1. Excluding these fiscal and administrative price increases, Dutch inflation would be closer to the EA average. All such measures together contributed 1.1 percentage points to Dutch inflation in 2024 – 2025H1, while they only contributed 0.6 percentage points in the EA (Figure 5). In both NL and the EA, the average contribution of indirect taxes and rent increases together was lower in the period before 2024.[1]

Different responses of governments to the energy price shock in 2022 also contributed to the inflation differential. Some countries took compensating measures, targeting retail energy prices by capping energy prices. Other governments took measures that broadly benefited all households or firms. The latter was the main policy in NL, as the government offered energy compensation to households. These different approaches across countries partly explains why Dutch energy inflation was higher in that period than energy inflation in countries with a price cap.

[1] The average contribution of indirect taxes to HICP before 2024 in NL was 0.2 percentage points and 0.1 in the EA (based on data between 2002-2023). For rents, the average contribution was also 0.2 percentage points in NL and 0.1 in the EA (based on data between 2004-2023).

Figure 5. Contributions to HICP-inflation in 2024-2025H1

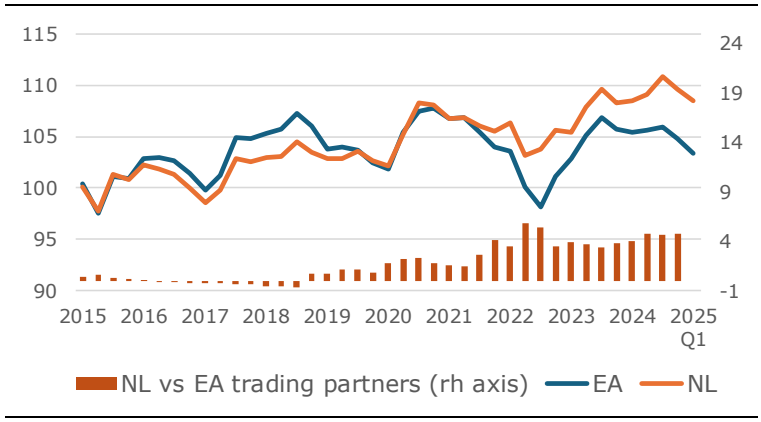


Sources: Eurostat, CBS, DNB. The EA also includes NL.

3. Implications for the economy

The inflation differential between NL and EA reflects relative price changes that foster the rebalancing process. For instance, the relative strong increase of nominal wages in NL is part of the rebalancing of the tight labour market. Relative price changes also contribute to adjustments at the external side of the economy. The inflation difference between NL and the EA has led to an appreciation of the real effective exchange rate (Reer), which has exceeded that of the EA since 2021 (Figure 6).[2] This has made Dutch export products less competitive. The Reer appreciation thus contributes to a rebalancing of the trade surplus (the bars in the Figure show that the Reer of NL has appreciated almost 5% against EA trading partners since 2015).

Figure 6. Real effective exchange rate (Reer), CPI-based
Index 2015=100 (lh axis), cumulative percentage (rh axis)



Source: OECD.

While inflation differences can support economic rebalancing, persistent and large deviations within a monetary union may become destabilising. In the case of NL, the high inflation rate - combined with a policy rate set by the ECB based on average EA inflation - implies a relatively low real interest rate.[3] This can exacerbate macroeconomic and financial imbalances (Gern et al., 2022). For example, the positive output gap in NL indicates excess aggregate demand. Excess demand may be further stimulated by a low real interest rate and so exacerbate the overheating of the economy.

Persistently low real interest rates also tend to push up asset prices. By increasing the present value of future income streams, low real interest rates raise asset prices across markets and encourage

[2] For the real effective exchange rate based on labour costs per person employed, this has been the case since 2023.
[3] Here the real interest rate is defined as the risk-free short-term ex-ante real rate, i.e. the policy interest rate minus realised inflation.

a shift toward riskier investments. Demand for assets that offer protection against inflation, such as real estate, may also increase (Jordà et al., 2019). This mechanism, amongst other factors, may for instance explain why house prices in NL have risen faster than in the EA as a whole.

Moreover, prolonged high inflation could raise inflation expectations of households and firms. Inflation expectations in EA countries are quite dispersed, with inflation expectations of NL households being on the high side.[4] That would make the ECB's monetary policy less appropriate for NL. It can reinforce the perception of a low real interest rate and so further stimulate spending. This will increase the economic overheating, for example in the labour market, and with it the upward pressure on wages. In such a scenario, the inflation differential between NL and the rest of the EA could widen further.

Such imbalances will eventually be corrected by market forces (Hofmann and Remsperger, 2005). This can happen gradually, as rising prices erode purchasing power and higher wages and stagnating exports reduce corporate profits. This puts a brake on spending and investment, reducing inflationary pressures. However, if inflation expectations become entrenched, market forces alone may not suffice. In that case, an adjustment of the imbalances may require a slowdown in economic growth or even a recession, possibly triggered by tightening financial conditions. Such tightening can result from rising bankruptcies, positively linked to inflation (Erken et al., 2024), which may prompt financiers to restrict credit supply. Ultimately, restoring price stability may require policy interventions, either through monetary contraction (which is constrained in the EA due to the ECB's focus on EMU average inflation) or through national fiscal tightening.

[4] Sources for inflation expectations are the European Commission Business and consumer survey database (main indicators) and the ECB Consumer Expectations Survey (CES).

4. Model simulations

We model the rebalancing process in NL as a case of an EMU country experiencing a positive inflation differential. For this we use EAGLE, which is a multi-region general equilibrium model for the global economy (see the technical details of EAGLE in Annex 2 and in Gomes et al., 2012). The model distinguishes NL (home country) from the rest of the EA (REA), the US and rest of the world (RoW). The EA is formalized as a monetary union.[5] Thereby EAGLE is a useful tool to analyse the impact of relative price changes in a currency union. The model framework allows to analyse the transmission of region-specific or common shocks across EA countries and the related role of country-specific structural economic features, including the appropriate stabilization policy responses.[6]

4.1 Shock impact

We assume that the high inflation in NL is caused by a global demand shock. The shock is calibrated as a one standard deviation positive preference shock, which leads to higher demand from outside the EA for Dutch tradable goods and services. The shock is assumed to be rather persistent.

The shock has more impact on NL than on the REA. The openness of the Dutch economy makes it more sensitive to trade shocks. Moreover, we assume that wages are stickier in NL than in the REA, reflecting wage moderation in NL in the years before the shock. Dutch firms producing internationally traded goods and domestically consumed services therefore have lower marginal costs, because real wages are relatively lower than REA wages (Figure 7, upper right panel). As a result, NL exports increase stronger than REA exports (middle row, third panel).

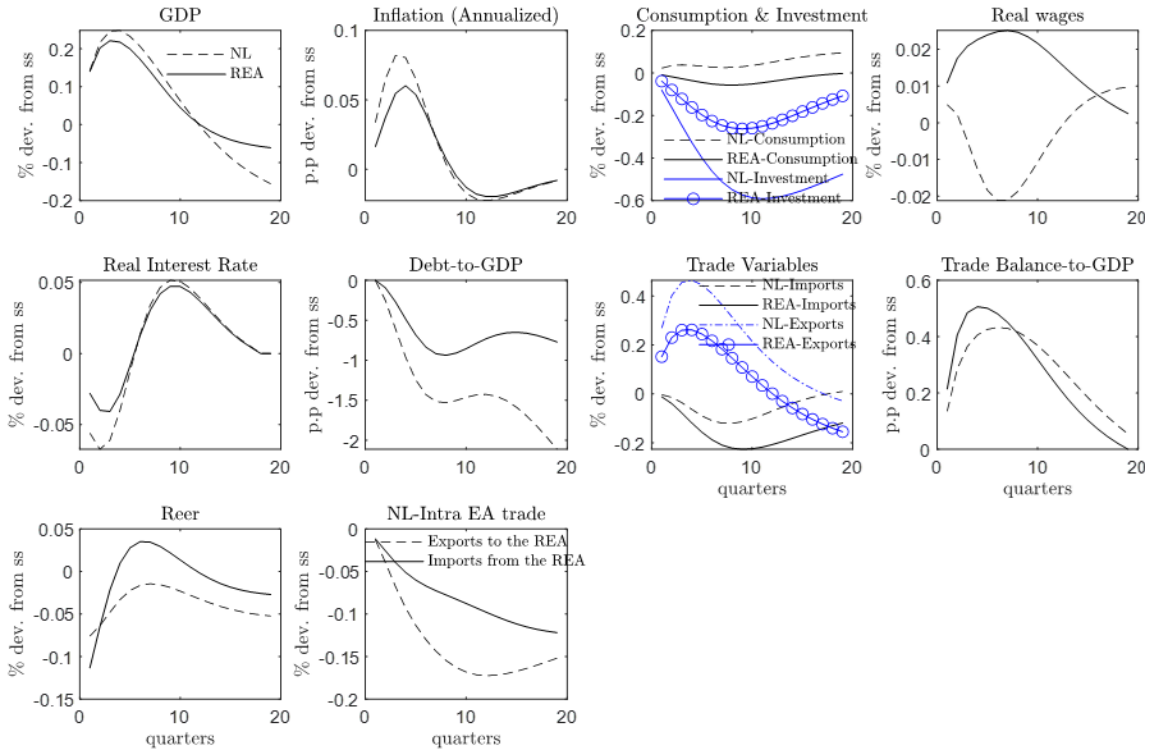
The shock creates imbalances in the Dutch economy. Driven by increasing exports, GDP in NL increases more than in the REA (upper left panel). This asymmetric positive demand effect in NL leads to an increase of inflation in NL that is larger than in the REA (upper row, second panel). The inflation differential goes together with an appreciation of the NL Reer (of which a decline in the lower left panel corresponds to an appreciation). As a result, the benefits of higher global demand are partly offset by a loss in competitiveness for NL in the course of time.[7]

[5] A monetary union is modelled by assuming a fixed exchange rate between NL and REA as well as common monetary policy.

[6] We analyse the effects of the shocks in terms of deviations from steady state, abstracting from economic imbalances that may be present (in the real world).

[7] The Reer appreciation after the shock can help to redress an undervaluation of the Reer at t=0. The IMF (2025) estimates that the Reer in NL is undervalued by 6.2%. In the model simulations we do not take into account such initial conditions.

Figure 7. Model outcomes of the baseline simulation
Deviations from baseline following 1 stdev shock to global demand



4.2 Relative price changes

The increased inflation in NL reduces real wages in the short-run (Figure 7, upper right panel). In the model, wages are indexed to inflation, though not fully. It implies that past inflationary pressures are not fully incorporated into newly set wages. At the same time, agents are forward looking with rational expectations. This implies that inflation expectations remain anchored, since agents know that inflation will fall back to the central bank target even though it is higher today. Therefore, when they reset their wages, workers will not set a wage that is too high compared to inflation expected over the period during which they cannot reset their wages. Both features add to the decline in real wages.

The low real wages in NL explain the relatively strong decline of investment. Relative low cost of labour induce firms to switch to hiring more labour instead of capital (labour is demand determined in the model). This explains that firms' investment in NL declines stronger than in the REA (upper row, third panel).

The ECB does not react to the relative high inflation in NL. Monetary policy is tightened in response to the increase of inflation in the EA as a whole, according to the Taylor rule. NL has a relatively low weight in the ECB reaction function, by which the policy interest rate is lower than required to tame

inflation in NL. Given that inflation in NL is relatively higher, the real interest rate in NL is lower than in REA in the first year following the shock to global demand (middle left panel).[8]

In the model, the lower real interest rate in NL increases domestic asset values. While financial markets are largely integrated and interest rates are determined at the EA level, the model captures how a country-specific inflation differential - through its effect on the real interest rate - can raise the net present value of assets such as government bonds. Households hold government bonds and so they benefit from the higher asset value.[9] This shows that relatively high inflation, through a lower real interest rate, is associated with rising asset prices. Although house prices are not included in the model, the effect of the real interest rate on bond prices mimics the real-world impact of lower real interest rates on housing markets.

The increase of asset values has a wealth effect on consumption. This wealth effect is anticipated by NL consumers, who therefore increase their spending more than REA consumers. The wealth effect more than offsets the downward effect of lower real wages on consumption in NL. In this environment, inflation expectations in NL can increase, because rational agents do not expect the ECB to react to inflation in NL in particular.

The positive demand boom creates more fiscal space for the government. This follows from the decline of the real interest rate (r), in combination with higher GDP growth (g) and the induced expansion of the tax base. Given $r < g$, the public debt ratio declines (middle row, second panel). This model outcome is in line with the decline of the EMU debt-to-GDP ratio of NL since 2020, which in addition to improvements in the budget balance, has been driven by an increase of inflation and by nominal GDP growth. In the model the improvement of the debt ratio leads to lower taxes. This stimulates domestic consumption further.

The Dutch Reer remains deviating from equilibrium in the medium term (shown by the Reer of NL remaining below equilibrium - lower left panel). This is driven, first, by the higher inflation in NL relative to REA. Second, the relatively strong demand for goods produced in NL goes together with an improvement of the Dutch terms of trade, as Dutch export prices increase more than import prices. This is reflected in a stronger real effective appreciation in NL.

4.3 Adjustment process

The economy slowly cools off. GDP in NL declines over time (Figure 7, upper left panel), due to the increasing real interest rate (following from the monetary policy tightening and decelerating inflation) and the slowdown of export growth. As a result, the positive output gap declines and inflation falls (upper row, second panel). In the medium term, GDP in NL drops more than in the EA, because the

[8] The real interest rate depends only on the ECB policy rate and domestic (NL or REA) inflation, since asset markets are incomplete only internationally, not domestically.

[9] The net present value of wealth goes up which boosts optimal consumption of Ricardian households. There is a positive wealth effect since debt does not cancel out in the optimal consumption decision of the Ricardian household. This is because initial debt holdings matter, with debt holdings being carried over from the previous period.

persistent Reer appreciation in NL weighs on exports and output. This reduces inflationary pressures further. Notably, the persistent rise in domestic demand (i.e. private consumption), is not enough to offset the downward GDP effect stemming from the deterioration of the trade balance.

The relative change of wages facilitates an adjustment of the labour market. Increasing labour demand and the tightening of the labour market create upward wage pressures. Real wages in NL increase more (from a lower level) than in REA and remain above equilibrium in the medium term (Figure 7, upper right panel). This is a delayed catching up effect of the real wage loss caused by the high inflation of previous years.

Inflation in NL returns back to target eventually. The return of inflation to target results from the rebalancing on the real side, in tandem with the unwinding of the domestic and external demand boom. The monetary tightening – in response to the increase of inflation in the EA - also contributes to the cooling down of the Dutch economy.

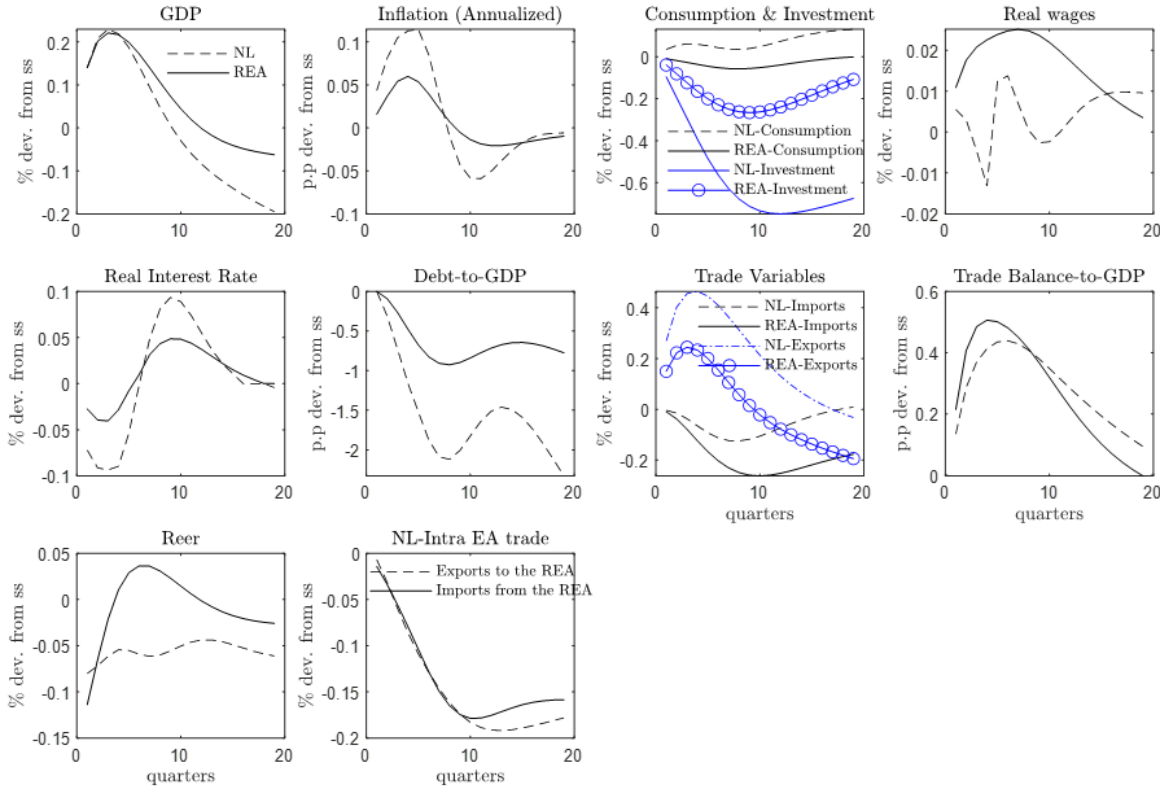
The adjustment of the trade balance is a slow process. The relatively high wage growth makes Dutch exports less competitive (reflected in an increasing NL export price). This reduces export growth, while imports pick up from quarter 8 onwards (Figure 7 middle row, third panel) - driven mainly by the persistent rise in domestic consumption and the Reer appreciation. As a result, the trade surplus converges back to equilibrium. However, the NL trade surplus in terms of GDP remains higher than the REA surplus in the medium term (middle right panel), mainly due to a denominator effect (GDP in NL declines more than GDP in REA).

The trade surplus of NL with other EA countries declines. Dutch exports to the REA decline more than imports from the REA (lower right panel). This indicates that the inflation differential and the associated Reer appreciation viz-a-viz the REA contributes to redressing intra-EA trade imbalances.

4.4 More flexible wages

In an alternative scenario we assume that wages in NL become more flexible. In particular, we assume that wages are sticky in the first year and become significantly more flexible from quarter 5 onwards. This refers to periods of very high inflation in which workers become more attentive to inflation. Moreover, it is likely that wage adjustment becomes more frequent in a tight labour market. Forward-looking agents anticipate a change in wage stickiness. The lower stickiness is shown in Figure 8 (upper right panel), with real wages turning back to equilibrium much quicker than in the baseline simulation shown in Figure 7. In the flexible wage variant, inflation in NL rises more than in the baseline scenario in the first year, and nominal wages catch up quicker with inflation.

Figure 8. Model outcomes of the flexible wage scenario
Deviations from baseline following 1 stdev shock to global demand



More flexible wages affect the domestic economy. Under more flexible wages, NL benefits less from the global trade boom than in the baseline simulation. GDP increases less in the first year and the positive demand effect fades away quicker. At the end of the horizon, GDP has fallen a bit further below equilibrium than in the benchmark simulation (Figure 8, upper left panel). The economic slowdown also drives down inflation from the second years onward, more than in the baseline simulation.

The less favourable impact on the Dutch economy is due to the stronger increase of the real interest rate. After declining more than the real rate in REA in the first year, the Dutch real interest rate increases relatively more in the second year, following the decline of inflation. This weighs on domestic investment, which declines much more strongly in NL than in REA, and so contributes to a negative output gap at the end of the horizon. The relatively higher increase in wages also affects the economy by reducing the labour demand. This lowers employment and thereby household income.

The stronger initial increase in inflation and wage catching up does not lead to a faster rebalancing of the trade surplus. Due to the relatively high inflation in NL in the first two years of the scenario, the Reer of NL remains higher – i.e. it has appreciated more than in the baseline simulation (Figure 8, lower left panel). This implies that more flexible wages lead to a larger loss of competitiveness

of NL. However, this does not have much impact on the Dutch trade balance. Exports and imports behave similar as in the baseline simulation (Figure 8, middle row, third panel). Moreover, the intra-EA trade imbalance of NL narrows less in the baseline simulation, as Dutch exports to the REA lag behind imports only slightly from year three onward (lower right panel).

Hence, the rebalancing of the trade surplus is not faster if wages become more flexible and is even slower in case of the intra-EA imbalance. This can also be explained by the savings surplus in NL, of which the trade balance is the mirror image. Domestic savings in NL increase even more in the alternative scenario, due to the relatively stronger increase of the real interest rate after the first year. Besides, the sensitivity of exports and imports to the Reer is low, also because of the global nature of the demand shock.

The larger swings of the real interest rate may create financial instability. The lower real interest rate in the first year boosts the net present value of bonds (wealth) more than in the baseline simulation. As a mirror image of this, the lower real rate also stirs debt levels and raises asset prices (like house prices). In the second year, the relatively strong increase in the real interest rate reduces the net present value of assets. For bond holders - and also house owners – it means that their asset value drops, which may create financial instability. Even more so because the negative real interest rate in the first year had stimulated leverage in the Dutch economy. This can affect the economy through the financial accelerator effect, as (interest rate) shocks to asset values can be amplified through the interaction between borrowers' balance sheets and credit conditions.

5. Conclusions

In theory, inflation differences between countries in a currency union can support the rebalancing of economies that are asymmetrically hit by external shocks. However, our model outcomes indicate that relative price changes alone are insufficient to correct the imbalances on both the domestic and external side of the economy completely. Moreover, the decline of the real interest rate in the country with relatively high inflation can raise asset prices and encourage a shift toward riskier investments. In our model simulations, more flexible wages do not help to rebalance the external side and may even worsen domestic imbalances. They also lead to larger real interest rate fluctuations, which may undermine financial stability. These model results imply that structural causes of the economic imbalances must be addressed to sustainably reduce the inflation differential between NL and the rest of the EA.

First, fiscal policy should play a more prominent role in the adjustment process. In the absence of country-specific monetary policy, a less expansionary fiscal stance is the most direct way to reduce excess demand and inflation differentials. In an economy with a positive output gap, shifting the composition of fiscal policy away from consumption and toward investment and supply-enhancing measures would ease inflationary pressures and support the long-term growth potential.

Second, strengthening the supply side of the Dutch economy is essential. High inflation and low real wages may discourage capital investment by inducing a shift toward labour-intensive production. Yet investment is needed to address structural bottlenecks in the labour market, housing market, and public infrastructure. While investment may raise demand in the short term, its medium-term effect is to expand the productive capacity and reduce inflationary pressures. Moreover, increasing domestic investment helps reduce the structural savings surplus, thereby contributing to the rebalancing of the persistent trade surplus.

Third, reducing productivity gaps within the EA can help narrow inflation differentials. The reports by Draghi (2024) and Letta (2024) provide concrete recommendations to enhance EU-wide competitiveness. Implementing these recommendations can contribute to reduce the differences in productivity between EA countries. This is important, as the Dutch case illustrates that persistent productivity differences can give rise to inflation differences across countries, consistent with the Balassa-Samuelson effect.

Annex 1. The impact of world trade volatility

To estimate the impact of economic openness on the inflation differential between NL and the EA average we estimate a naive AR(1) model extended with a variable for world trade volatility and a variable for world trade growth (model 1). The volatility variable is constructed as the 12 months moving standard deviation of world trade volume (source: CPB, 2025). World trade growth is the relative monthly change of world trade volume (source: CPB, 2025). Both variables are included with a lag of 18 months to reflect that the inflation differential reacts to global trade shocks with a delay, as Figure 3 suggests. We also tried shorter lags but they were not statistically significant. We also include a control variable for the impact of taxes and subsidies on inflation. The model is estimated over the 2001m1 – 2025m5 period.

The estimation outcomes of model 1 in Table A show that the coefficient of world trade growth is significantly positive, indicating that changes in world trade raise the inflation differential (defined as inflation in NL minus EA average inflation). In economic terms, a 1% change of world trade increases the inflation differential by 0.07 percentage point on average in one month. The coefficient of trade volatility is not significant.

To assess the impact of large trade shocks on the inflation differential we extend the model with a variable that interacts world trade growth with a dummy which is 1 for months with a large positive change (2%) of trade (model 2). In another specification we include the interaction term with a dummy which is 1 for months with a large negative change (-2%) of trade (model 3). The 2% threshold is chosen so that the dummies cover the more extreme trade shocks (the dummy equals 1 in around 5% of the months in the sample).

The estimation outcomes in Table A show that both interaction terms are significant and have the expected sign. It implies that world trade growth is associated with an increasing inflation differential in a regime with strong positive trade shocks (Dummy positive). In a regime with large negative trade shocks (Dummy negative), the inflation differential declines following changes in world trade. The coefficient of the interaction with Dummy positive is larger and more significant than with Dummy negative, indicating that trade shocks more likely lead to a widening than a narrowing of the inflation differential between NL and the EA.

Table A, Estimation outcomes

	Inflation difference (1)	Inflation difference (2)	Inflation difference (3)
Constant	-0.04	-0.03	-0.04
	(0.06)	(0.06)	(0.06)
Inflation differential (t-1)	0.82***	0.82***	0.83***
	(0.03)	(0.03)	(0.03)
Delta tax and subsidies	-0.60***	-0.52***	-0.56***
	(0.17)	(0.17)	(0.17)
Vol trade (t-18)	0.03	0.04	0.02
	(0.02)	(0.03)	(0.03)
Delta trade (t-18)	0.08***	0.06**	0.15***
	(0.03)	(0.03)	(0.04)
Dummy positive (t-18)		-0.17*	
		(0.09)	
Dummy negative (t-18)			-0.27
			(0.57)
Delta trade * Dummy positive		0.21**	
		(0.09)	
Delta trade * Dummy negative			-0.18*
			(0.11)
R2	0.73	0.73	0.73
Obs	274	274	274
DW stat	1.85	1.91	1.89

Notes. Delta tax and subsidies is the month-on-month change of the contribution of taxes and subsidies to inflation. Vol trade is the 12 months moving standard deviation of world trade. Delta trade is the month-on-month change of the world trade index. Dummy positive (negative) equals 1 for months in which Delta trade is higher (lower) than 2% (-2%). The variable Delta trade * Dummy positive (negative) is the interaction between Delta trade and Dummy positive (negative). The asterisks denote statistical significance at a 1% (***), 5% (**), 10% (*) confidence level.

Annex 2. The EAGLE model

The EAGLE (Euro Area and Global Economy) model is an open economy DSGE model that accounts for international macroeconomic interdependence – within the EMU, but also globally.

EAGLE contains 4 regions: the home country (Netherlands), the rest of the Euro area (REA, composed of 19 euro area (EA) countries minus NL), the US and the rest of the world (RoW). Changes in the composition of the EA across time are not considered in EAGLE. The EA is formalized as a monetary union, with a common monetary authority that sets the common nominal interest rate according to EA-wide variables. As such, it allows for analysing the transmission mechanism of region-specific or common shocks across EA countries and the related role of country-specific structural economic features, including the appropriate stabilization policy responses.

EAGLE is a large-scale micro-founded model that explicitly specifies the behavior of households, firms, and monetary and fiscal authorities. Thanks to micro-foundations, the analysis can be conducted in a fully coherent, disciplined, and internally consistent framework.

The model has thus all the features needed to analyse the short-run dynamics of the adjustment to shocks (habit formation in consumption, adjustment cost on investment, sticky wages and prices à la Calvo, 1983). Finally, home bias in tradables, local currency pricing, non-tradable goods and incomplete market at international level allow for a realistic international transmission of a country-specific shock through movements of trade flows and international relative prices (terms of trade and real exchange rate).

For more details on the EAGLE model, see Gomes et al. (2012).

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