The Baltic economies are now fully recovered from the past recession, and the output gaps have been fully closed in all three countries. However, the economies are continuing to expand at above-potential rates. Moreover, economic confidence is close to all-time highs, unemployment is the lowest in a decade, and wages are growing at an accelerated pace. Thus, one cannot avoid asking, Are the Baltic economies on a sustainable path or could they be heading towards an overheating? To help us answer this question, we constructed an economy heat index. It shows that, although the Baltic economies are not in the overheating mode yet, the temperature is slowly rising. This is largely driven by a tight labour market, but it has not yet translated into high inflation and a buildup of imbalances elsewhere. Nevertheless, the situation requires close and continuous monitoring, and some actions may be needed. Productivity-boosting reforms and a looser immigration policy could put the economies on a more sustainable track.
**Temperature is rising, policy prudence required**

The Baltic economies have enjoyed a prolonged period of solid growth. This has resulted in tight labour markets and high income growth, which are now raising concerns that the economies could be heading towards overheating. However, our index shows that the tightness in the labour markets has not yet translated into economic imbalances elsewhere, and price pressures are moderate. Nevertheless, the temperature is gradually rising. The situation should be monitored closely; a pro-cyclical fiscal policy and excessive minimum wage hikes should be avoided, and productivity-boosting reforms are advised.

**Lessons from the past have raised awareness**

Looking back at the Baltic economies in 2007-2008, it is now easy to see they were heading for a rough ride. Wages were growing at annual rates of 20-30%, housing prices were ballooning, fueled by excessive credit growth and wide-spread optimism, the fiscal policy was pro-cyclical, and annual inflation stood at double digits; meanwhile, the current account was sliding deep into negative territory. Needless to say, the economy was running hot, and the imbalances that had built up had to be corrected sooner or later.

The global financial crisis was the ice-cold shower that brought down the temperature of the Baltic economies. But the adjustment process was painful – GDP contracted by 15% in Lithuania and by around 20% in Latvia and Estonia, while wages dipped and the rate of unemployment shot up to double digits. If the Baltic economies were not overheated and there was no housing bubble, the economic shock in 2008-2010 would have been a lot less pronounced. This past boom-and-bust experience indicates that the costs of failing to identify the signals of overheating and preventing it can be high.

An overheating economy is one where productive capacity is unable to keep pace with growing aggregate demand. This situation results in an overemployment of resources and high and rising inflation. This period is usually marked with excess optimism and confidence over the economy’s future prospects, which leads to inefficient supply allocations and, possibly, a buildup of bubbles (e.g., in housing, the stock market), a trade deficit, and other economic imbalances.

The Baltic economies are now fully recovered from the past recession – output exceeds its pre-crisis level in all three Baltic countries. The negative output gaps have been eliminated, too. However, the economies continue expanding at above-potential rates, labour shortages are becoming increasingly pronounced, and wage growth is close to double digits. Although inflation is still relatively muted, one cannot avoid asking the question, Are the economies on a sustainable path or could they be heading towards overheating?

**GDP is above pre-crisis peaks in the Baltics**

Gross domestic product, CA, SA, chained, index

**Labour shortages are more dire**

Labour as a factor limiting production, Industry

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Source: Macrobond & Swedbank Research
What does the overheating indicator show?

In order to check the temperature of the Baltic economies, we have constructed an economy heat index. The index comprises six indicators - credit growth, unemployment, inflation, current account balance, wage and productivity growth differential, and ratio of apartment price to wages (check details in the Appendix). The variation of underlying indicators is analysed, and the combined index shows how detached the mean of those variables is from their historical average.

It is difficult to pinpoint a single threshold that would strongly suggest overheating in an economy. In part due to significant structural changes in the Baltic economies since the crisis and partly to the blurry definition of overheating. One reference point that could be used for interpretation is a zero, which stands for the long-term average - values above zero could mean that the economies are tending to move to the warmer side. However, it is important to observe the trend and steepness of the indicator, since this shows whether and how fast an economy is warming up.

Overall, the economy heat index shows that the Baltic economies are warming up slowly. Years of solid growth in the Baltic economies and negative demographic trends have led to a situation where finding labour is increasingly hard or very expensive. Unemployment is already close to the pre-crisis level. Although the lack of labour is pronounced and wages are growing at an accelerated pace, the growth in labour costs is not too detached from productivity growth. But the gap could widen if labour shortages become even direr. Lithuania is a bit ahead in the cycle, but it is nowhere close to the excesses observed a decade ago. Estonia and Latvia are a bit behind, and their differences in wage and productivity growth are close to the historical average.

Rising incomes, increased optimism, higher willingness to consume and the same time mounting capacity constraints create conditions for price pressures to build up. Moreover, when economies with no spare productive capacity have trouble to meet the expanding aggregate demand, this results in deteriorating current account balance as the excess demand is satisfied with imported goods and services. When expectations about the future rise, consumers may become less risk-averse and thus more willing to borrow, this in turn fuels demand growth. These conditions then translate to inflated asset prices, possibly even forming bubbles.

But we are not there yet. Labour shortages and fast income growth have not yet translated into excessive growth in consumer prices in any of the Baltic states. In fact, in Lithuania, after a temporary pickup last year, price pressures have eased lately. A similar story repeats in the current account. At the moment, companies are still able to expand export production in line with import growth, and all three Baltic states have healthy external balances. Lithuania is a bit ahead in the credit cycle, compared with Latvia and Estonia, but credit is still growing slower than GDP and still contributing negatively to the overall index. Meanwhile, the ratio of apartment prices to net wages in the capital cities remains low. Even though housing prices have increased in previous years, wage growth was considerably more rapid.

Overall, the index looks nothing like the years preceding the crisis, when all indicators were extremely above their long-term averages and were still rising steeply, indicating rapid overheating. Now, the Baltic economies seem balanced, with the index hovering at around zero, although heat in the labour market is building up. However, as experience from 10 years ago shows, caution is still necessary – the pressures in the labour market can quickly translate into current account deficits, inflation, and excessive credit growth.

It is likely we will see a bounceback in inflation in the upcoming months as increased labour costs are translated into higher prices of consumer services. Notably, due to significant changes in the structure and development of the Baltic economies in the past decade, the threshold that would indicate overheating could be much lower this time, as the extreme values of 2005 – 2008 have pushed the historical average upwards. Therefore, it is important to keep caution and track the trend and speed of change as well.
Avoiding overheating requires prudent policies

Although the Baltic economies are slowly warming up, this does not necessarily have to lead to overheating. The business cycle can be managed and overheating avoided by bringing the economy back onto a sustainable growth path through right and timely monetary, macroprudential, and/or fiscal measures.

Baltic governments are adding fuel to the economy

EC estimates of output gap and structural deficit, pp

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Sources: Swedbank Research & Macrobond
Note: Output gap and structural balance are estimated indicators and subject to significant revisions over time

However, the Baltic countries do not have monetary policy tools at their disposal. Monetary policy in the whole euro area is set by the ECB, but the central bank cannot respond to the individual needs of every euro area country. Although the current state of the business cycle in the Baltic countries would require tighter monetary policy, this policy remains very loose in the euro area and is expected to tighten only very gradually over the next few years.

Thus, monetary policy will be of little help in case the temperature in the Baltic economies continues rising more rapidly than that in the euro area on average. However, the central banks do have other tools, such as macroprudential measures, at their disposal, and they are already being applied in the Baltics—e.g., the Bank of Lithuania introduced a countercyclical capital requirement for banks of 1% this year. However, current developments in lending and housing prices seem to be on a sustainable path and thus do not indicate a need for tighter macroprudential measures.

Meanwhile, the governments should avoid adding extra fuel to the warming up of economies and should thus implement countercyclical fiscal policies. However, the recent decline in the structural primary balance in all Baltic countries indicates that their governments are, instead, entering the pro-cyclical easing phase; they should, in fact, start turning to countercyclical consolidation (see the graph above). Moreover, the policymakers should maintain their prudence when setting minimum wages. Excessive minimum monthly wage hikes add fuel to the already-rapid wage growth and could boost aggregate demand, which could, in turn, lead to rising inflation and thus further wage increases.
The Baltic policymakers should also turn to policies that help boost growth of potential output and ensure a more efficient resource utilisation, as this would lay the foundation for more rapid sustainable growth. This may require reforms in the labour market, in education and migration policy, and on many other fronts. Although such reforms normally do not go down well with the general public, it is worth remembering that the best time to repair a roof is when the sun is still shining.
Economy heat index: Methodology

Purpose
The purpose is to measure changes in the balance between demand and supply in an economy. The heat index helps to identify potential imbalances and risks in an economy, and could be helpful in guiding appropriate macroeconomic policy.

Indicators
- Core HICP (harmonized index of consumer prices) growth – price pressures are an essential indicator of supply shortage in an economy. Core price growth is chosen to exclude volatile food and energy prices, as well as effects of alcohol and tobacco taxation.
- Inverted current account balance as share of GDP – a worsening trade balance indicates excessive demand in an economy.
- Inverted unemployment rate – very low unemployment signals that there is very little spare capacity in the labour market.
- Difference in credit and nominal GDP growth rates – excessive credit growth indicates unsustainable consumption.
- Difference between wage and productivity growth – a widening gap between wages and productivity would signify inflationary pressures and capacity constraints in an economy.
- Ratio of apartment average price to net wage in a capital city – a deteriorating ratio could signal either bubble formation or unbalanced demand and supply in an economy.

Construction of the index
Data are transformed by converting all indicators into so-called Z-scores (see formula below). This means that the average value of each indicator over time is equal to 0, while a value of 1 is equal to one standard deviation. This transformation allows comparing indicators with different units of measurement, as their standard deviations are analysed instead. The combined index is constructed by taking the average of underlying indicator Z-scores.

\[ Z = \frac{v_i - v_m}{\sigma} \]

\[ \text{Index} = \frac{\sum z_i}{n} \]

\( Z \) – z-score, \( v_i \) – value of indicator at a point in time, \( v_m \) – historical average of an indicator, \( \sigma \) – standard deviation, \( n \) – number of indicators
Appendix

Estonia, Z-scores of factors influencing overheating

Latvia, Z-scores of factors influencing overheating

Sources: Swedbank Research & Macrobond
Lithuania, Z-scores of factors influencing overheating

Sources: Swedbank Research & Macrobdwrd
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