

Box 3 The economic impact of the east Iceland aluminium and hydropower projects

Although construction of Kárahnjúkar hydropower station is still at an early stage and work on the Fjarðaál (Alcoa) smelter has not commenced, it is worth examining whether developments so far have diverged from expectations in important respects. To begin with, the following is a recapitulation of the Central Bank's evaluation of these projects before they commenced.¹

The main finding was that, despite the fact that the construction projects will be some of the largest in Icelandic history, it would be possible to maintain economic stability and keep inflation close to the Central Bank's target through the interplay of autonomous economic adjustment and monetary and fiscal policy measures. The króna would appreciate and long-term interest rates rise at the start of the investments. However, it was emphasised that autonomous adjustments, being based at least in part on expectations of economic policy measures, cannot be a substitute for such a response.

The Bank's assessment was based on information gathered from the project developers on factors including construction cost, labour use and the shares of domestic and foreign labour. All these assumptions have since changed.

The original plans assumed that the bulk of construction activity would take a shorter time than currently envisaged. Two-thirds of construction work was expected to take place in 2005 and 2006, peaking in the latter year. According to the most up-to-date information, part of the activity has been rescheduled from 2005 and 2006 to 2007, and will be more intense in 2007 than in 2005 (see Box 3 in *Monetary Bulletin*, 2003/4). Because the investments are spread over a longer period, it will be easier for the economy to absorb them without driving up domestic demand.

In *Monetary Bulletin* 2003/1 it was assumed that just over $\frac{3}{4}$ of the labour force would be domestic, based solely on information from the developers. The

outcome has been quite different. Now it is estimated that, on average, less than half the labour force will be domestic for the duration of the investments. The greater the share of imported labour, the less pressure will be generated in the domestic labour market.

Assumptions about the exchange rate and Central Bank policy interest rate have also changed. Originally an exchange rate index value of 124 was assumed, while in the current forecast it is 120. The króna would probably be considerably weaker now had plans for the projects not materialised. A stronger exchange rate dampens inflationary pressures and makes the investments easier to accommodate. The policy rate assumed in *Monetary Bulletin* 2003/1 was 5.8% but is now 5.3%, reflecting some slack in the economy. A negative output gap facilitates absorption of the investments into the economy, and in fact is also a consequence of internal economic adjustment through the exchange rate and interest rate mechanisms.

Without the investments that have now been launched, the Central Bank policy rate would probably be lower than at present. Applying a simple Taylor rule to the position of the economy this year and in 2003, the policy rate ought to be $4\frac{1}{2}$ -5%. As might be expected, the investments have led to less reduction in the policy rate than would otherwise have been the case. Calculations in the earlier assessment suggested that, with exchange rate adjustment, interest rates needed to rise by 2%, of which it can be said roughly $\frac{1}{2}$ % has already emerged. A tighter fiscal stance would have constrained this increase even further. Indeed, the tighter fiscal policy in the budget for this year is one result of the projects.

The study in *Monetary Bulletin* 2003/1 presented several alternatives to a baseline scenario that did not include the projects. Without economic policy responses, exchange rate adjustment or other autonomous adjustments, the rate of inflation would peak 4 percentage points higher than otherwise. An

1. An in-depth analysis of the macroeconomic impact of the Fjarðaál project was published in *Monetary Bulletin* 2003/1. It should be underlined that only the impact of the Fjarðaál project was discussed in that analysis. It did not evaluate the Norðurál smelter expansion, which has affected subsequent developments. An earlier study was published in *Monetary Bulletin* 2002/2. A speech by the Chief

Economist of the Central Bank, published in *Monetary Bulletin* 2003/3, focused on the project's impact on the exchange rate and economic policy responses. See Már Gudmundsson, "The strengthening of the exchange rate and economic policy challenges", *Monetary Bulletin*, 2003/3.

An exchange rate adjustment and a 2 percentage point higher policy rate would allow inflation to be kept less than 1 percentage point higher, compared with the baseline scenario. Fiscal measures would make a further contribution and not exert so much upward pressure on the króna.

Given the changes in assumptions and the macro-economic forecast presented above, the analysis and assessment that the Central Bank published in February 2003 does not appear to be fundamentally flawed. Output growth will head above its equilibrium level and the output gap will turn from negative to pos-

itive. Inflation will rise above the target at the peak of the investments, unless the policy interest rate is raised. The appreciation of the króna has eased inflationary pressures and will temper the necessary rise in interest rates. A tighter fiscal stance will hold the króna weaker than otherwise and reduce the need for higher interest rates as well.

Finally, it should be underlined that final judgement on the ultimate impact of the aluminium and hydropower investments would be premature. They are still in their infancy.