Immigration and the Macroeconomy: the Role of Non-Job Related Immigration

NORGES BANK

NORGES BANK

Francesco Furlanetto; Ørjan Robstad
Norges Bank

Abstract

A quarterly series for net immigration is available for Norway since 1990 Q1 (unlike for many other countries).

We include this net immigration series into a Vector Autoregression (VAR) model in which immigration is a fully endogenous variable driven by three macroeconomic shocks, in addition to two exogenous immigration shocks disentangling job-related immigration from non-job-related-immigration.

We find that exogenous fluctuations in non-job-related immigration explain a large share of the variation in net immigration flows. The macroeconomic effects are, however, limited. All macroeconomic variables are barely affected by changes in non-job-related immigration, while they respond substantially to job-related immigration.

Introduction

During the past decades immigration flows have increased significantly in most advanced economies. This is certainly the case for Norway, where the population share of immigrants jumped from approximately 3.5 percent in 1990 to over 14 percent in 2016 (see Figures 1 and 2). While a large literature has studied in detail the effects of immigration flows on employment and wages using mostly disaggregate data, the impact of immigration on standard macroeconomic variables has not been investigated systematically, in particular for the case of non-job-related immigration. This paper aims at filling this gap.

In the related VAR literature, Kiguchi and Mountford (2017) provide an analysis on US annual data using the penalty function approach, D'Albis, Boubtane and Coulibaly (2015) use monthly data for France over the sample period 1994-2008 in a VAR identified with a recursive scheme. They find that immigration responds significantly to France's macroeconomic outlook and at the same time immigration itself increases GDP per capita. McDonald (2013) studies the effect of an immigration shock on house prices in a VAR and finds a strong positive effect. Furlanetto and Robstad (2016) study in detail the impact of job-related immigration on the Norwegian economy.

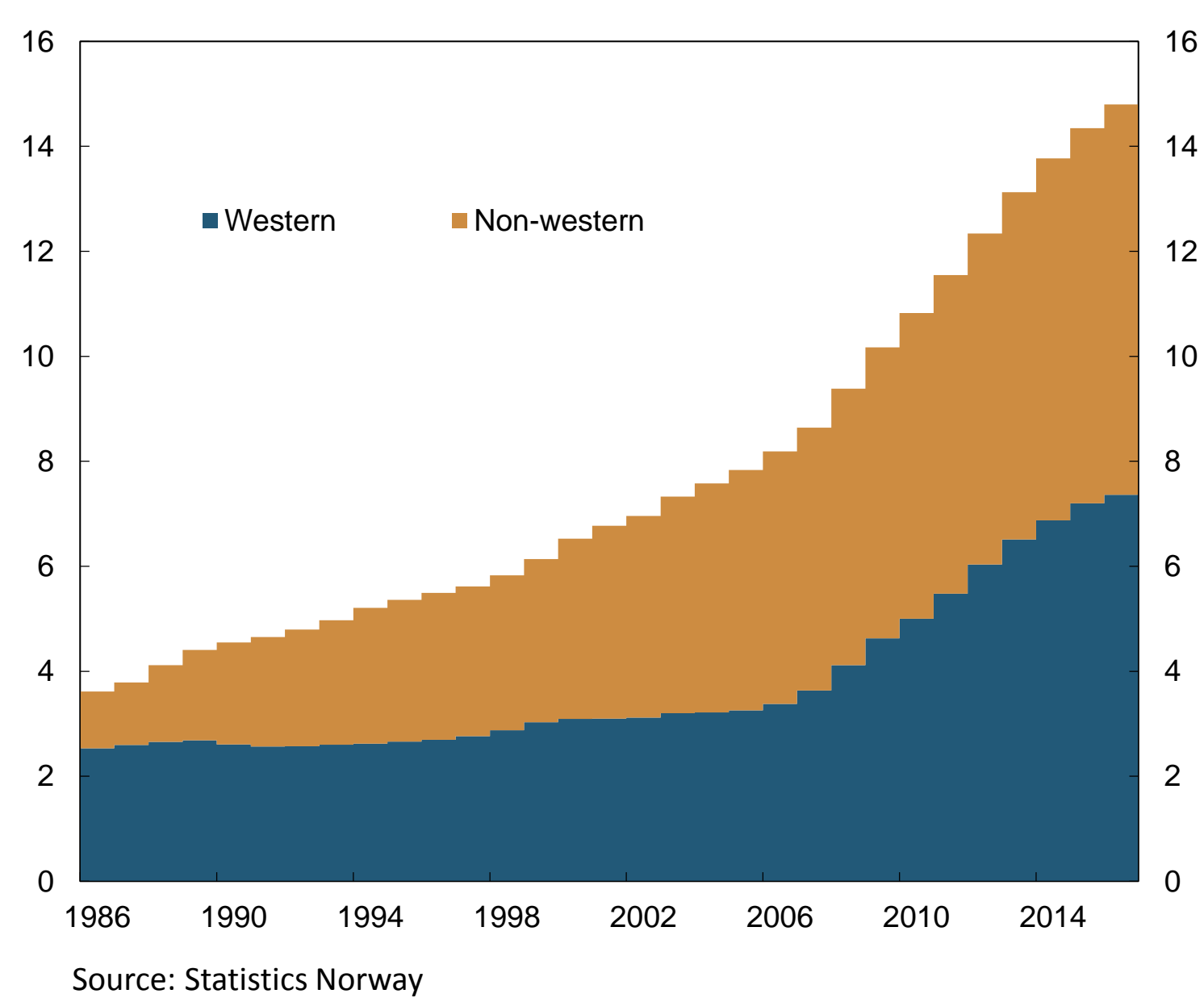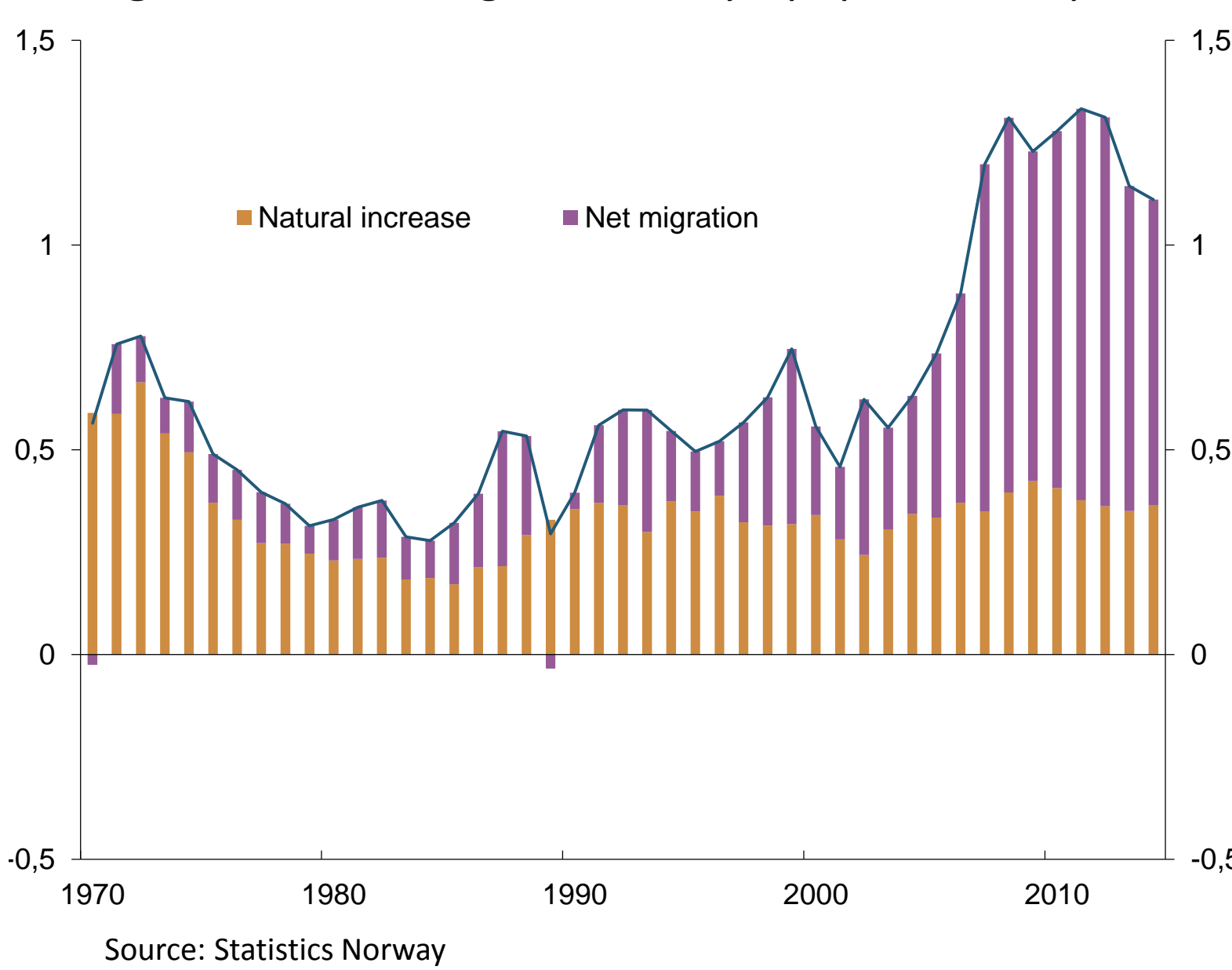Fig. 1. Population share of immigrants in Norway in percent

Source: Statistics Norway

Fig. 2. Annual change in Norway's population in percent

Source: Statistics Norway

The VAR model

We estimate a VAR model in levels with 5 lags over the period 1990Q1-2016Q2.
We include 5 variables (Mainland GDP, real wages, participation rate, immigration rate and unemployment rate) and 5 shocks (business cycle, wage bargaining, domestic labor supply, job-related immigration and non-job related immigration) in our baseline model. We impose the following impact restrictions:

	Business Cycle	Wage Bargaining	Domestic Labor Supply	Immigration Job-Related	Immigration Non-Job related
GDP	+	+	+	+	+
Real Wages	+	-	-	-	-
GDP/immigration	NA	+	NA	NA	-
Participation Rate	NA	-	+	+	-
Immigrants/Participants	NA	NA	-	+	NA
Unemployment Rate	NA	NA	NA	NA	NA

Table 1. Impact restrictions for identification of shocks in the baseline model

We impose two key assumptions. A positive non-job related immigration shock has 1) a negative effect on the labor force participation rate and 2) a negative effect on the ratio between GDP and the number of immigrants. The first restriction is needed to disentangle job-related and non-job-related immigration. In fact, it is natural to assume that immigrants coming for work will enter the labor force rapidly, whereas immigrants coming as refugees or for family reunifications will enter with a long delay. The second restriction is needed to distinguish an increase in the number of immigrants (non-job-related) from a reduction in the bargaining power of workers.

Results

An non-job-related immigration shock is the main driver of immigration in our model (cf. the Variance Decomposition in Figure 5). On average across horizons, immigration is driven mainly by the two exogenous shocks, while the endogenous response of immigration to the remaining shocks is relatively limited.

The macroeconomic impact of non-job-related immigration is minor at best. All macroeconomic variables are barely affected as it can be seen in Figures 3 and 5. The impact on GDP is barely positive in the short-run and tends to be negative in the medium-run. Since the labor market variables are basically unaffected, the GDP decline may reflect a decline in labor productivity. The negative effect on wages (imposed on impact) tend to persist over time, although real wages are not driven by immigration shocks (of both kinds) in our model.

The effects of job-related immigration shocks are economically more important, in keeping with previous evidence provided in Furlanetto and Robstad (2016). While the relative impact of these shocks on immigration dynamics is lower than the one of non-job related shocks, the other variables react substantially more and the effects are more expansionary. Unemployment decreases in response to a job-related immigration shock, perhaps reflecting the fact that this kind of immigrants come to Norway already with a job or at least that they enter quickly into the labor force (cf. Figure 4).

In a sensitivity exercise, we identify non-job-related immigration shocks using only data on immigration from Non-Western countries (Asia, Africa and Latin America) since this group of immigrants has a low participation rate (according to annual data provided by Statistics Norway) in keeping with our identification assumption. This experiment does not feature the job-related immigration shock. The previous results are by and large confirmed. Non-Western immigration is driven almost exclusively by the immigration shock which, however, barely affect the macroeconomic variables (cf. Figure 6).

Fig. 3. Non-job related immigration shock
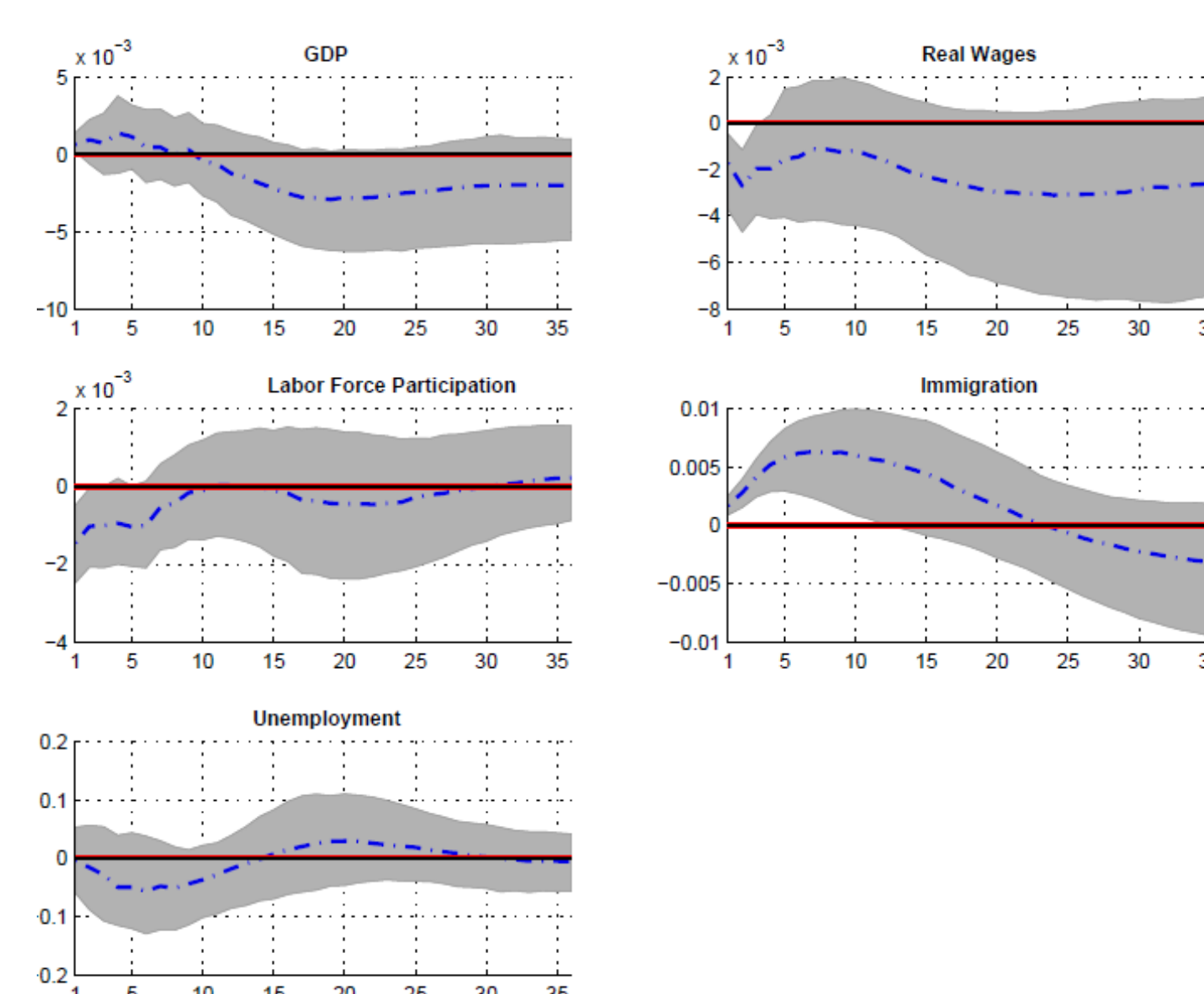
Note: Impulse responses to a one-standard-deviation **non-job related immigration shock**. The dashed-dotted line represents the posterior median at each horizon and the shaded area indicates the 68% posterior probability region of the estimated impulse responses
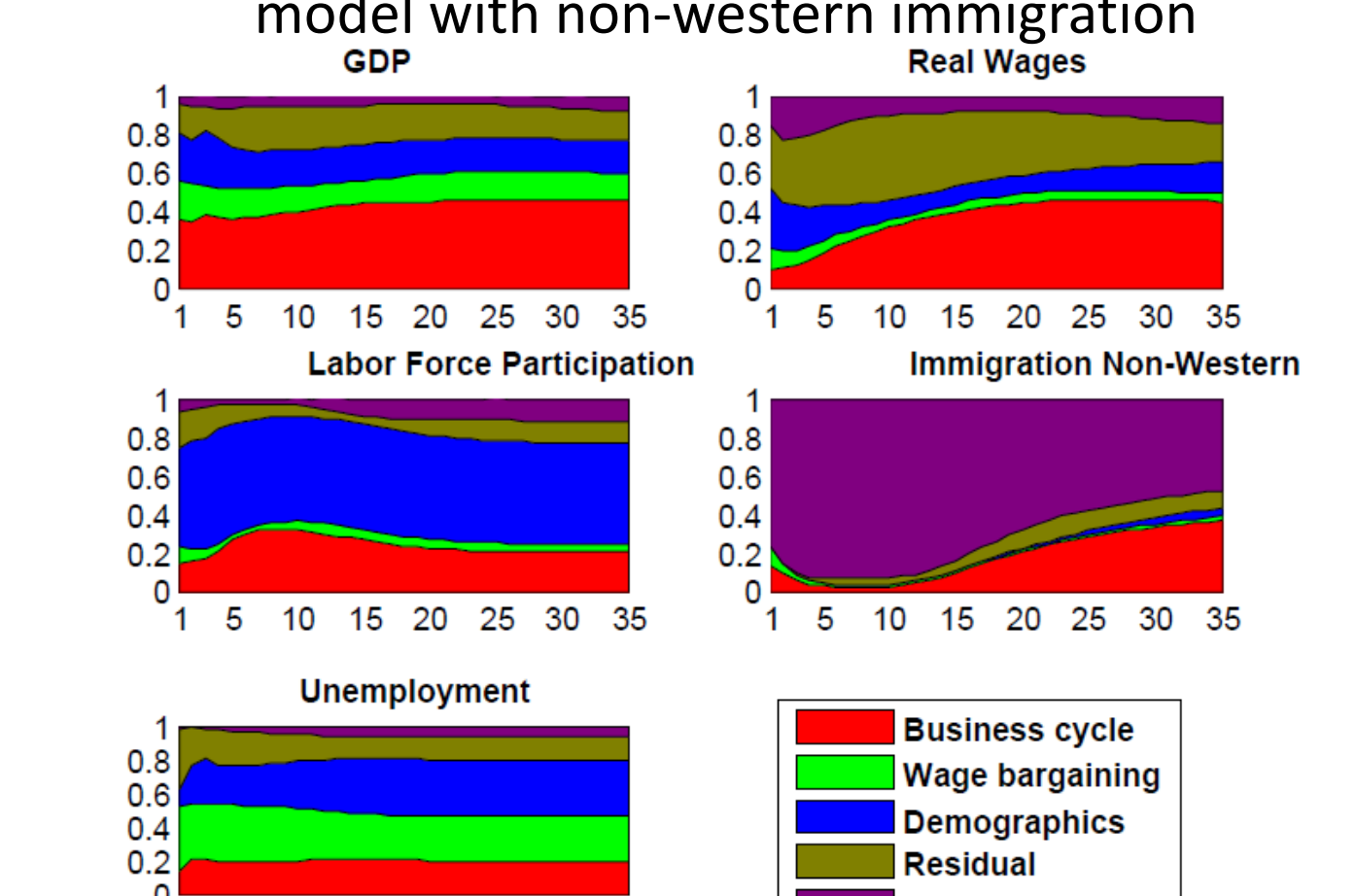

Fig. 4. Job related immigration shock
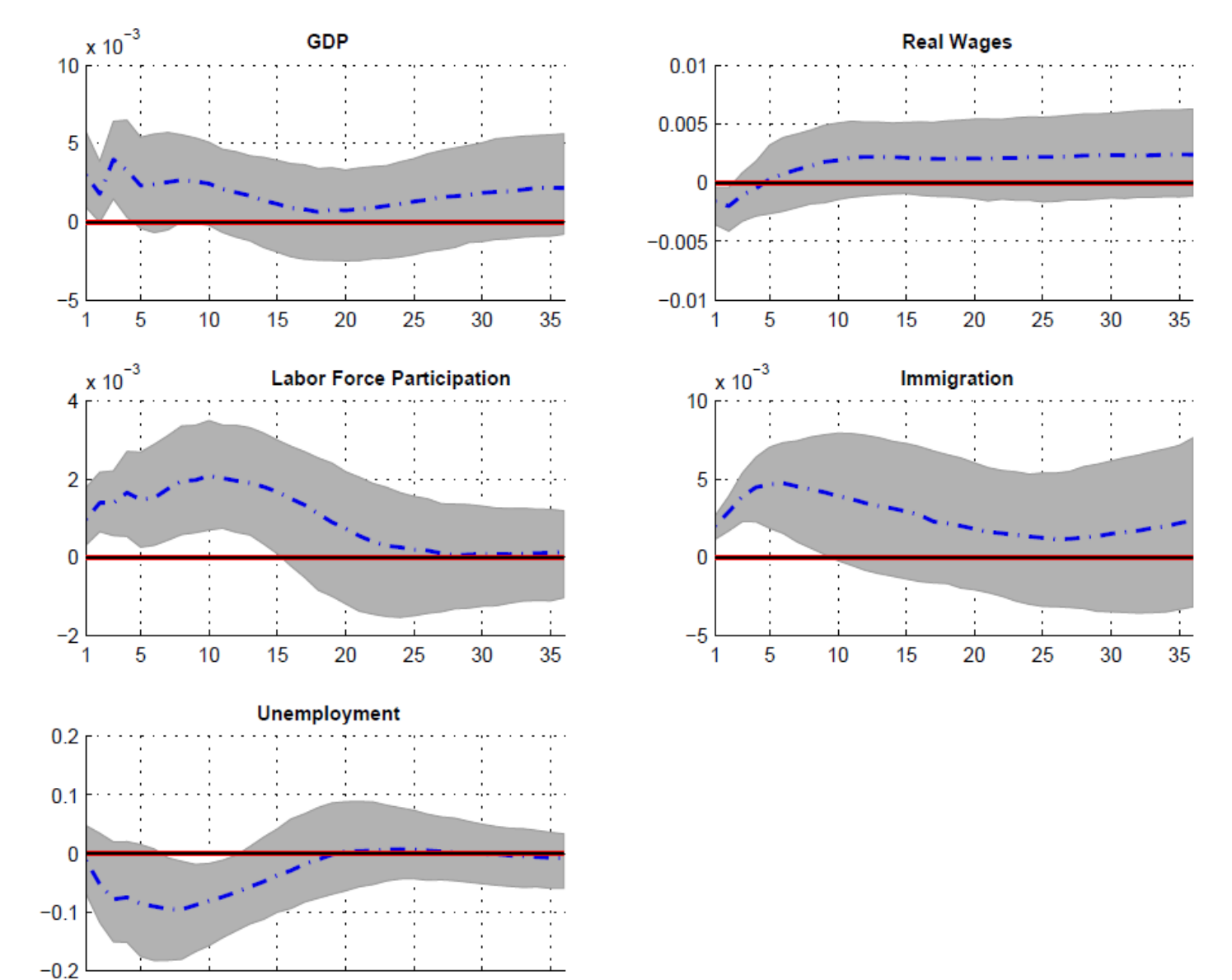
Note: Impulse responses to a one-standard-deviation **job related** immigration shock. The dashed-dotted line represents the posterior median at each horizon and the shaded area indicates the 68% posterior probability region of the estimated impulse responses

Fig. 5. Variance decomposition in the baseline model
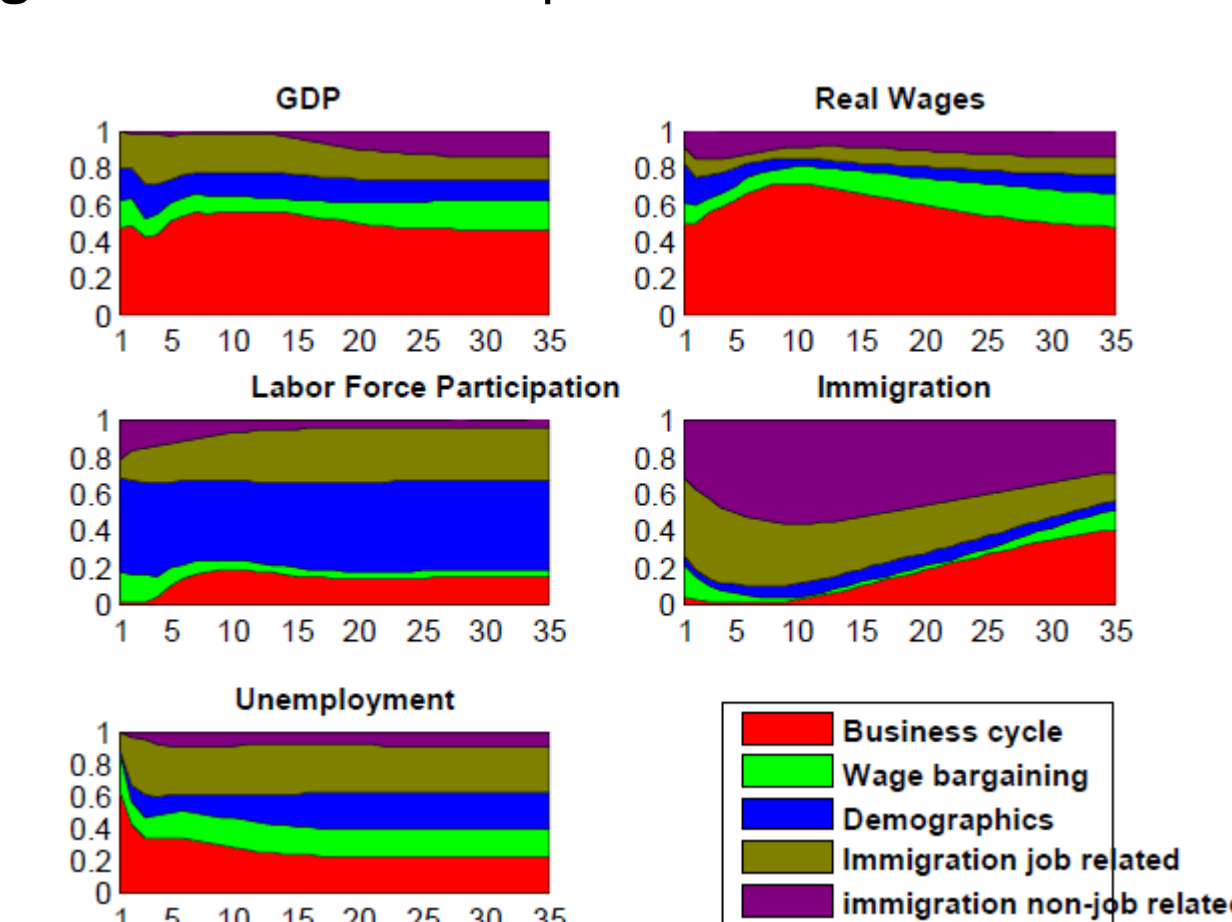
Note: Median forecast error variance decomposition at each Horizon in the baseline model

Fig. 6. Variance decomposition in model with non-western immigration

Note: Median forecast error variance decomposition at each Horizon in the model with only non-western immigration

Conclusions

Non-job-related immigration explains a large share of immigration fluctuations but its macroeconomic impact is almost negligible. In contrast, job-related immigration has a larger impact, mostly expansionary.

References and contact

1. Kiguchi, T., Mountford, A., 2017. The macroeconomics of immigration. Macroeconomic Dynamics, forthcoming.
2. D'Albis, H., Boubtane, E., Coulibaly, D., 2015. Immigration policy and macroeconomic performance in France. Etudes et Documents 5, CERDI.
3. Furlanetto, F, Robstad, Ø., 2016. Immigration and the macroeconomy: some new empirical evidence. Norges Bank Working Paper 18
4. McDonald, C., 2013. Migration and the housing market. Reserve Bank of New Zealand Analytical Notes 2013/10.

Francesco Furlanetto and Ørjan Robstad
Norges Bank
Emails: francesco.furlanetto@norges-bank.no and orjan.robstad@norges-bank.no
Website: www.norges-bank.no/en/about/Research/economists/Furlanetto-Francesco/