

»» Germany's demographic trap – integrating refugees is only part of the solution

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The foreseeable ageing and decline of the population exerts considerable downward pressure on growth potential. That pressure will mount in the 2020s, when baby boomers will gradually begin to retire and the number of skilled workers moving up will be far from sufficient to fill all positions becoming vacant. However, the most recent official population estimates, which usually form the basis of such potential growth projections, were no longer able to include the currently very high number of asylum seekers. We demonstrate on the basis of two new scenarios that explicitly model refugee immigration, that only an all-encompassing economic policy strategy can make a long-term contribution to halting the decline in potential growth in a significant manner. It will not only require considerable efforts in the integration of immigrants to be successful. What will also be crucial is the realisation of ambitious objectives to be pursued with general economic policy measures for increasing labour market participation, investment and productivity.

The German population is ageing and will begin to shrink from around the year 2020, as described by the variant 'continuity amid weaker immigration' of the 13th coordinated population projection of the Federal Statistical Office, which was published in April 2015.¹ In this scenario, only 79.2 million people will be living in Germany in 2030, or around 2.1 million fewer than today. In the working age population (15 to 74 years)², this negative trend already started in 2007. It will intensify significantly in the coming decade. The number of persons of working age in the year 2030 will be 58.7 million, 3.1 million people or around 5% fewer than in 2015. In the core group aged 20 to 64 years, the decline during this period will be even more pronounced, at -12%.

Demographics weigh on growth ...

The demographic development will therefore exert considerable downward pressure on economic growth in the near future, as we demonstrated last in 2013 on the basis of the 12th coordinated population projection. The growth model we used at the time, which is known as the Cobb-Douglas production function, was methodically documented in detail in our study entitled 'Deutsches Wirtschaftswachstum in der Demografiefalle: Wo ist der Ausweg?' (*Germany's economic growth in the demographic trap: Where is the way out?*)³ and should be outlined again only briefly here.

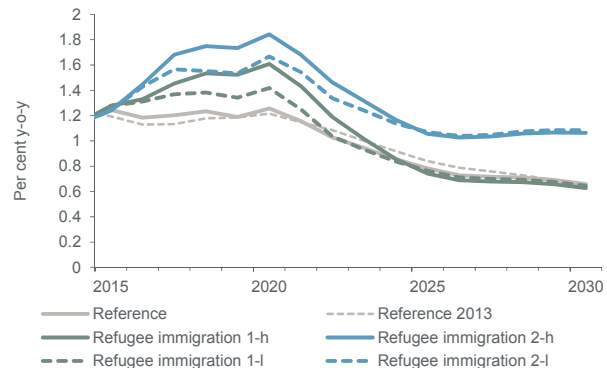
The approach explains growth potential as the available quantity of labour and capital (total working hours per year and real gross fixed assets) and total factor productivity

(technological progress), which is an expression of the typical efficiency gains in the use of the two mentioned production factors over time.

We have updated this growth model in two respects: (1.) the population outlook is based on the 13th coordinated population projection and (2.) we are applying the recently fundamentally revised concepts relating to gross domestic product, gross fixed capital formation and capital stock.⁴

Our recalculation yields a remarkably close reproduction of the reference scenario of the time, despite the far-reaching conceptual revision and updating of the data bases. The official demographic outlook cuts potential growth nearly in half from currently 1.2 to 0.7% in 2030 (see Figure 1).

Figure 1: Germany's growth potential – scenarios



Source: Federal Statistical Office, KfW Research

The decline will intensify after a calm phase that will last until the end of this decade. From 2020 the baby boomers will gradually begin to retire and the number of skilled workers moving up will be far from sufficient to fill all positions becoming vacant.

... despite countermeasures

In the reference scenarios we already assumed at the time, as we do today, that economic policy – irrespective of the new challenges posed by the refugee influx – would respond with a whole series of general measures designed to mitigate the negative consequences of the loss of labour force potential (see box). As the close similarity of both reference scenarios illustrates, these measures remain imperative.

Box: Assumptions on general economic policy measures in the current reference scenario

As broad an activation of the labour supply as possible through: (1.) further increasing people’s willingness to participate in the workforce to 74 % in the year 2030 (current participation rate 72.3 %); (2.) reducing the structural unemployment rate from an estimated 4.5 % today to 4 % in 2030 and (3.) stabilising workers’ average working hours per year at around 1,360 hours.

Strengthening education, research and development and innovation with the aim of increasing productivity, with the contribution of total factor productivity to growth projected to be 0.8 percentage points in 2030 (currently 0.5 percentage points).

More investment than today: the real⁵ overall economic investment ratio is projected to rise from 20 % of GDP today to 21.3 % in 2030.

Refugees – the new variable in the growth equation

We deliberately disregarded the currently very high refugee influx in the new reference scenario. It is the new unknown variable in the growth equation. In the following we will explore to what extent it can make a difference. To do this we will need the reference scenario as a reference point.⁶

Not a forecast

One thing needs to be strongly emphasised in this connection: This scenario, as well as the following calculations for modelling the refugee intake, do not represent forecasts claiming to predict what would be the most likely development from today’s point of view. Rather, they are limited ‘if-then statements’ designed to show what implications the assumptions have. Hence they serve primarily to illustrate qualitative arguments in quantitative terms.

Assumptions on the refugee influx

This limitation needs to be taken into account simply because it is impossible to predict the number of refugees entering Germany over several years.⁷ Even the exact refugee intake in 2015 remains fraught with considerable statistical uncertainty due to probable double registrations in the EASY system. We assume that one million refugees came to Germany last year. With respect to the refugee numbers from 2016 onwards, our scenario calculations are based on two diametric assumptions:

- High refugee influx (the respective scenarios are labelled with the ending “-h”): In 2016, a total of 800,000 refugees will enter Germany. A linear decline in the influx will then set in until the end of the decade, so that only the net immigration from the selected official population variant will be included in the simulation from 2020 onwards (100,000 people per year).
- Low refugee influx (labelled with “-l”): In 2016 as a whole, 200,000 people will seek asylum in Germany, another 100,000 in 2017, and already from 2018 onwards net immi-

gration is set to decline to the level assumed in the chosen variant of the official population projection.

Irrespective of the precise number of the refugee influx we assume in addition:

- The share of 15 to 74-year-olds among the refugees is 75 % in the year of arrival.
- The refugees’ propensity to work, expressed in the participation rate⁸, is 10 % in the first year after arrival and thereafter increases in a straight line to 75 % in the sixth year, after which it remains constant.
- In the first year after their arrival, half the refugees who make themselves available to the labour market are unemployed. In the following years the unemployment rate drops in a straight line and remains stable at 10 % from the sixth year after arrival. The unemployment rate would thus remain more than twice as high as among the people of working age in the existing population.

The growth impact is only temporarily significant

Under these conditions (and otherwise the same assumptions as in the reference scenario), the refugee influx in the years ahead will produce a tangible growth effect, as described in the two scenarios ‘refugee immigration 1-h’ and ‘refugee immigration 1-l’. Instead of a sideways movement of around 1.2 % up to the end of the current decade, potential growth will rise to a peak of 1.6 % (high refugee influx) and 1.4 % (low refugee influx), respectively, in the year 2020.

The growth momentum will then fall rapidly, however, so that already from the mid-2020s the simulated path will be practically no different from the course of the reference scenario. As the additional influx will peter out, as assumed, in 2020, the demographically induced pressure on potential growth will become all the more intense from then onward.

Greater efforts are necessary

This finding illustrates that more efforts are needed to noticeably strengthen Germany’s potential growth in the long term as well. We have described a conceivable trend in the optimistic scenarios ‘refugee immigration 2-h’ and ‘refugee immigration 2-l’. While a decline in the momentum from 2020 appears inevitable in these calculations as well, potential growth will nevertheless stabilise at 1.1 % in the long term. This means it will not only be consistently above the comparison trend in the reference scenario but will remain roughly at the present level in 2030 as well.

Such a result presupposes further progress in practically all key growth elements:

- Improved labour market integration: First, the refugees who settle in Germany permanently need to be prepared for the labour market more quickly and more effectively. Specifically, we assume that the participation rate of refugees in the first five years after their arrival increases faster than in the

scenarios 1-h and 1-l. In the scenarios 2-h and -2-l, for example, it is already at 50% in the second year (scenarios 1-h and 1-l: 35%). Besides, the decline in refugee unemployment also continues after the sixth year following their arrival and stabilises at 5% from the eleventh year.

- **More investment:** Additional impetus is required through an increase in investment over the reference scenario (investment ratio in 2030: 23.4%, around two percentage points higher), which should come with even stronger productivity increases (growth contribution of total factor productivity in 2030: 1.0 percentage points, 0.2 percentage points higher).
- **More net immigration:** Finally, net immigration needs to be twice as high as assumed in the reference scenario and the refugee immigration 1-h as well as 1-l scenarios in the long run, at 200,000 people per year.⁹

Ambitious targets – favourable reciprocal effects

The assumptions of our positive scenarios refugee immigration 2-h and 2-l are very ambitious. Besides integrating refugees into the labour market at all levels, ambitious targets will have to be realised in expanding investment and innovation and higher gains have to be achieved from net labour migration in the long term.

The individual measures of this integrated approach, however, also support each other mutually. Achievements on one side will facilitate progress elsewhere – for instance with regard to the link between labour supply and investment incentives.

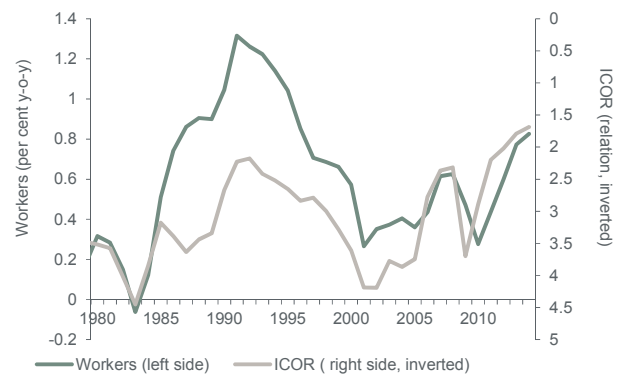
If Germany succeeds in broadly qualifying the refugees who settle permanently for the requirements of the labour market and expanding regular immigration in line with its needs, the labour supply will be significantly larger in the medium to long term than would be expected in the domestic demographic setting alone.

Greater labour supply is an incentive for more investment

Experience suggests that this would provide significant investment incentives. Figure 2 compares the employment dynamic with the incremental capital-output ratio (ICOR). The ICOR describes how much additional capital is necessary for the production of an additional unit of gross domestic product. In other words, the smaller the ICOR, the more profitable is the investment.

The close synchronicity between an increase in the workforce and the ICOR (illustrated on an inverted scale!) shows that low values of this measure – meaning economically particularly profitable investments – can be observed especially when labour as a production factor is available in abundance. This appears plausible on an intuitive level as well. For an enterprise, the prospects of profitable investment, for instance in a new production facility, are far better when the labour market provides sufficient qualified workers than when the required workers are very difficult or costly to obtain.

Figure 2: ICOR and the labour market

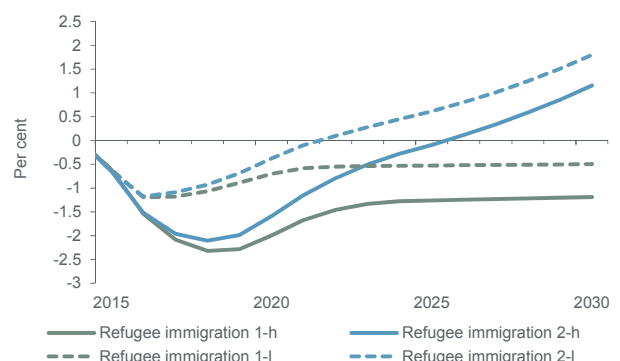


Source: Federal Statistical Office, KfW Research

Effort pays off for everyone

More economic growth, however, does not mean more prosperity for all so long as the population grows faster. Figure 3 illustrates this aspect. It shows the level of potential economic output per capita (as a customary measure of material wealth) in the respective scenarios on refugee immigration in relation to the outcome in the reference scenario, that is, without the refugee intake.

Figure 3: Potential per capita – per cent deviation from reference scenario



Source: Federal Statistical Office, KfW Research

It is true that a relative slump in per-capita potential in the first years after the refugee intake is inevitable because the newly arrived workers initially contribute far below the average to overall economic production and income generation. The level of potential economic output per inhabitant in the scenarios on refugee immigration discussed here remains up to a good 2% (high refugee influx) and 1% (low refugee influx), respectively, behind the reference scenario.¹⁰

But this decline can already be offset in the middle of the coming decade at the latest, after which all inhabitants will have even more material wealth than in the reference scenario on average – but only if the policy areas relevant to growth all make a sufficient effort, as described here by the positive scenarios refugee immigration 2-h and 2-l.

The considerable initial expenditure, which is necessary especially for an ambitious response to the challenges, can therefore be construed as an investment that promises an

economic return in a measurable period of time – only around five to ten years from now under the conditions of our optimistic scenarios.

Refugees – focus on three sets of measures

With a view to the current influx, the focus should be on three sets of practical measures in order to successfully integrate the refugees settling in Germany permanently into our society and economy and make a meaningful contribution to turning a positive development into reality:¹¹

- Creating affordable housing, particularly in conurbations where employment prospects are particularly promising;
- Strengthening schools and child day-care, as the high number of underage refugees requires more investment in educational infrastructure and additional expenditure on teachers and support staff;

- Investment in host country-specific human resources and skills, because sufficient German language proficiency, systematic identification of skills and suitable training measures are indispensable prerequisites for the successful integration of refugees into the labour market.

Fast action is required

A swift response is also imperative. It is the only way to prevent the emergence and entrenchment – at the expense of society – of undesirable structures such as long-term unemployment among refugees. That would tie up public funds, which are urgently needed for infrastructure modernisation, and divert them to welfare payments. However, if Germany tackles the challenge of the refugee influx with determination and embeds the integration of refugees into a comprehensive strategy aimed at strengthening the forces of growth, there is a good chance that the existing population, refugees and labour migrants will together benefit economically from the new situation in the future. ■

¹Federal Statistical Office: 'Germany's population by 2060', 13th coordinated population projection (April 2015). The population variant used here entitled 'continuity amid weaker immigration' is based on the combination of assumptions G1-L1-W1, where G1 means: birth rate 1.4 children per woman; L1: life expectancy at birth in 2060 for boys 84.4 years / girls 88.8 years, W1: long-term migration balance in 2015 500,000 people; 2016–2021 gradual adjustment to 100,000 people per year; thereafter constant.

² Defining this age group as working age population is in line with international conventions adopted for national accounts.

³ Cf. Borger, K., Lüdemann, E., Zeuner, J. and V. Zimmermann: *Deutsches Wirtschaftswachstum in der Demografiefalle: Wo ist der Ausweg? (Germany's economic growth in the demographic trap: Where is the way out?)* KfW Research, Papers and Proceedings, October 2013 (only available in German).

⁴ With the operationalisation in September 2014 of the European System of National Accounts in its 2010 version (ESA 2010), the concept of investment in particular was expanded and adapted to the knowledge society. Expenditure on research and development is now counted as gross fixed capital formation and, accordingly, its capitalised value is now attributed to the corresponding stock figure, gross fixed assets ('real capital stock'). Military weapon systems are now also treated as capital formation. This leads to an increase in the level of gross capital formation overall and, hence, gross domestic product. For details on the consequences of the revision of general concepts see Borger, K.: 'Gross fixed capital formation: new figures – old problems', KfW Research, KfW-Investment Barometer Germany (October 2014).

⁵ Calculated in prices of the year 2010.

⁶ It shows what the potential growth might have looked like in future without the massive increase in immigration.

⁷ For this reason the Federal Statistical Office also sees no cause for revising the results of the 13th coordinated population projection in response to the currently high refugee influx, a view it justified in its press release No. 021 dated 20 January 2016 (Currently high immigration cannot reverse population ageing): 'Unique developments and unpredictable events such as wars, crises, environmental disasters and their consequences cannot be taken into account in the assumptions on a population projection. The rapid rise in the influx of persons seeking protection in the year 2015 is one such unique development. Currently it cannot yet be adequately taken into account in a projection. A mere increase in the medium-term migration assumptions without exact knowledge of the volume and duration of the current influx and the demographic characteristics of the immigrants would not lead to any reliable results nor meet the quality standards of official statistics' (our translation based on the extended German version).

⁸ The labour force participation rate is defined as the percentage of economically active persons (i.e. employed plus unemployed) in the working age population (15 to 74 years). It thus describes their general propensity to make themselves available to the labour market.

⁹ As regards the projected underlying demographic trend (apart from the refugee influx), our scenario 'refugee immigration 2' is based on variant G1-L1-W2 of the 13th coordinated population projection of the Federal Statistical Office. This variant differs merely in regard to the migration balance from variant G1-L1-W1, which is the starting point of our modelling for the scenarios 'reference' and 'refugee immigration 1'. Specifically, the assumptions on the immigration balance W2 are: 500,000 people in 2015; gradual adjustment to 200,000 people per year from 2016 to 2021; steady thereafter.

¹⁰ Nevertheless, this cannot be expected to cause broad redistribution effects – rather, the decline in the overall economic average will more likely be attributed largely to the refugees themselves.

¹¹ We describe and comment on these measures in detail in: Leifels, A. and J. Zeuner: 'Refugee immigration calls for investment in housing, schools and minds', KfW Research, Focus on Economics No. 108 (November 2015); and Zeuner, J.: 'Wo Integration beginnt ('Where integration begins'), Von Z-A – Zeuners Anmerkung zum Wirtschaftsgeschehen (3 December 2015 – only available in German).