GED
Global Economic Dynamics

GED Focus Paper

Germany‘s export surpluses – Asset accumulation for the future?

BertelsmannStiftung

GED Focus Paper

Germany‘s export surpluses – Asset accumulation for the future?

Thieß Petersen

Content

Executive summary

For decades, Germany has been generating large export surpluses. The associated accumulation of assets vis-à-vis other countries provides one possibility of enabling a high standard of living for the ageing German population in the future. However, there is no guarantee that these asset investments will maintain their value over the long term. If Germany‘s cumulative current account surpluses between 2000 and 2017 are compared with the change in its net foreign assets in the same period, the result is a book loss in the hundreds of billions of euros. Even if many of these price and exchange rate-related losses in asset value could be compensated for, there is no guarantee that all losses can actually be offset in the long term. Given these uncertainties and the fact that Germany shows a considerable weakness in overall economic investment, it is quite conceivable that higher domestic investment could constitute a better macroeconomic provision to deal with the ageing of the population.

Export surpluses and asset accumulation

If Germany exports more than it imports, it lives beneath its means because not all goods produced in its own country are consumed. This results in two effects regarding future opportunities for consumption:

- Germany spends less money on imports than it earns through exports. An export surplus therefore results in a accumulation of assets vis-à-vis other countries (see Box 1). The investments in assets result in additional income – for example, dividends or interest income. Thus the opportunities for consumption in the following years increase, because the income received from abroad can be exchanged for foreign goods and services.

- By forgoing opportunities for consumption in the present, Germany acquires additional claims to consumer goods from abroad: if Germany exchanges its assets in the future, it receives a claim to goods and services from abroad. The fact that Germany now lives beneath its means opens up the option of it living beyond its means in the future. In other words, a country with an export surplus makes goods available to the rest of the world at the present time and allows the rest of the world to have excessive consumption. In return, the country with the export surplus expects the rest of the world to live beneath its means at some point in the future and thereby return the "over-consumed goods".

Both effects are a motive for generating export surpluses in the present. In order for this strategy to succeed, however, it requires that the claims against foreign countries do not lose value. Assets accumulated vis-à-vis foreign countries – for example, investments in enterprises or loans to companies or the state – lose value if the enterprises or the state in question file for bankruptcy or if the currency of the foreign country strongly depreciates. In both cases, Germany would have exchanged its goods for worthless claims in an extreme scenario.

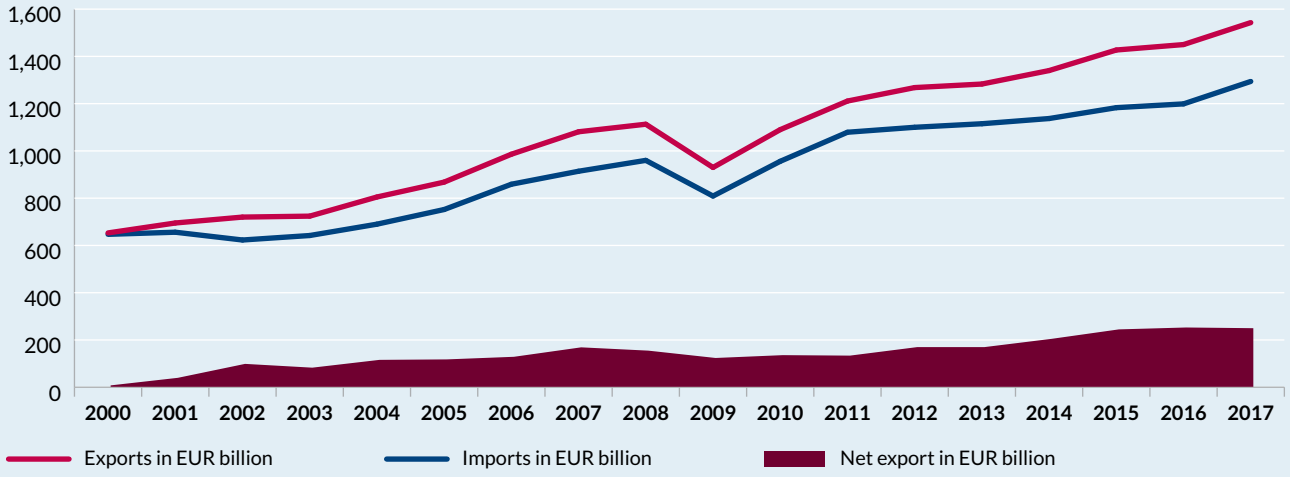
BOX 1 Export surpluses and asset accumulation abroad

The fact that an export surplus is accompanied by asset accumulation abroad can be demonstrated using the balance of payments. It keeps track of all economic transactions between Germany and the rest of the world that take place within a one-year period. The assets side lists the activities that represent an incoming payment for Germany. If, for the sake of simplification, changes in the central bank's gold and foreign exchange holdings are not taken into account, there are two types of economic activity that represent incoming payments: the export of goods and services (EX) and capital imports (K^{IM}) such as sales of shares and securities to foreign economic units or borrowing abroad. The liabilities side covers the activities that lead to an outgoing payment for the country, and thus the import of goods and services (IM) and capital exports (K^{EX}) such as the purchase of shares and securities of foreign business entities. In the balance of payments, all transactions are posted twice. For example, the export of goods against the granting of a loan is recorded as an export of goods on the assets side and as an export of capital on the liabilities side. Therefore, the balance of payments is by definition always balanced: $EX + K^{IM} = IM + K^{EX}$. The transformation of this equation represents the definitional relationships between the trade or current account balance ($EX - IM$) and the capital account balance ($K^{EX} - K^{IM}$): that is, $(EX - IM) = (K^{EX} - K^{IM})$. An export or current account surplus ($EX > IM$) is therefore automatically accompanied by a net capital export ($K^{EX} > K^{IM}$). And when domestic capital is invested abroad, this means an increase in wealth held abroad.

Cumulative export surpluses and change in net foreign assets

Since reunification, German exports have almost always been larger than imports. Furthermore, if one considers that since the beginning of the 2000s the German current account has shown a surplus, then the year 2000 can be used as the starting point to compare accumulated export surpluses with the change in net foreign assets. If the annual export surpluses between 2000 and 2017 are added up, this results in a cumulative export surplus in the amount of approximately EUR 2,570 billion (see Figure 1).

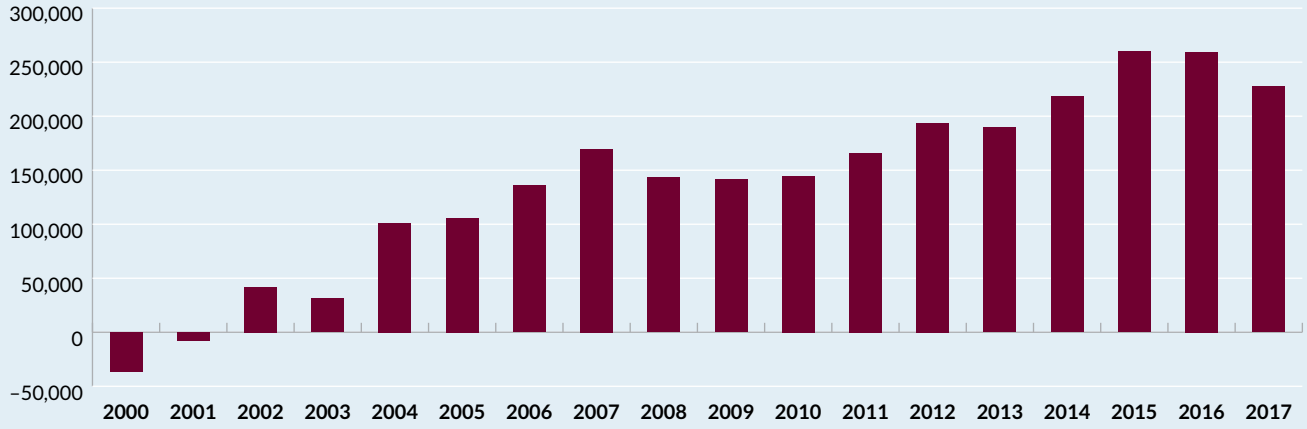
FIGURE 1 **Overall change in German foreign trade.**



Source for the years 2000 to 2016: Statistisches Bundesamt 2017: 145. Source for 2017: Statistisches Bundesamt 2018: 13. | BertelsmannStiftung

In order to calculate the financial resources of an economy that are available for asset accumulation abroad, other cash flows between Germany and the rest of the world must be taken into account (i.e. cross-border transfers and fees for the use of production factors). These cross-border financial transactions are listed in the current account. Unlike the German external contribution (difference between export revenues and import revenues), the German current account balance was negative in 2000 and 2001 (see Figure 2).

FIGURE 2 **Germany's annual current account balances for 2000 to 2017 (for 2017, only January to November), figures in EUR millions.**



Source for the years 2000 to 2016: Statistisches Bundesamt 2017: 145. Source for 2017: Statistisches Bundesamt 2018: 13. | BertelsmannStiftung

If the current account balances are added for the period between January 2000 and November 2017 (full data are not yet available for the year 2017), this results in a cumulative current account surplus for Germany of around EUR 2,480 billion. The sum of cumulative current account balances is almost EUR 100 billion less than the sum of cumulative export surpluses. The main reason for this is the transfer payments made by Germany to the rest of the world.

If the cumulative current account balances are used as a rough indicator of the net receivables of a country, German net foreign assets would have increased by EUR 2,480 billion between 2000 and 2017. However, in reality this figure grew by only around EUR 1,810 billion during this period (see Table 1).

TABLE 1 **Germany's international investment position, in rounded figures**

Year	Assets in EUR billion	Liabilities in EUR billion	Net foreign assets in EUR billion
End 1999 = Beginning of 2000	2,507	2,443	64
End 3rd quarter 2017	8,319	6,446	1,873
Change 2000 to 2017	+5,813	+4,003	+1,810

Source: Deutsche Bundesbank 2018: 96.

If changes in the value of receivables and liabilities are not taken into account, the increase in German net foreign assets would be around EUR 670 billion larger. In other words, with regard to the export surpluses, this lack of growth in net foreign assets can also be interpreted to mean that Germany has given away goods and services amounting to around EUR 670 billion over the time period under review.

Reasons for the loss of assets

When looking for the reasons for the lack of growth in net foreign assets, it is useful to compare the annual changes in net foreign assets with the annual current account balances (see Table 2).

TABLE 2 **Germany's international investment position, in rounded figures**

Year	Net foreign assets in EUR billion (figures for end of the year)	Change in net foreign assets over previous year in EUR billion	Current account balance in EUR billion
1999	64		
2000	34	–30	–37
2001	142	108	–8
2002	0	–142	42
2003	17	17	31
2004	102	85	101
2005	306	204	106
2006	472	166	136
2007	471	–1	170
2008	465	–6	143
2009	614	150	141
2010	662	47	145
2011	627	–35	166
2012	787	160	194
2013	975	188	190
2014	1,198	223	218
2015	1,478	280	260
2016	1,709	231	259
2017	1,873	164	228

Source: Deutsche Bundesbank 2018: 96.

Assuming there are no errors in the collection of statistics and no changes in the value of receivables and liabilities, theoretically the annual current account balance would have to be more or less in line with the change in net foreign assets for the same year. As Table 2 shows, to some extent there are considerable differences between the two figures. These differences can be explained by changes in value. The net foreign assets of Germany, expressed in EUR, ceteris paribus, lose their value if…

- the prices of assets (stock prices, real estate prices, security prices, etc.) abroad decrease;
- foreign currency is devalued and the prices expressed in EUR for foreign assets are therefore lower;
- the prices of assets in Germany held by foreign investors increase;
- German economic actors have got into debt overseas in a foreign currency (foreign currency loan), and the currency of that country increases in value.

Leaving aside any statistical discrepancies, the main periods responsible for the loss of assets are those in which there were particularly large negative deviations between the change in net foreign assets and the size of the current account balance. Three periods should be noted in this respect (see Table 2):

- 2002: The difference between the theoretically expected increase in foreign assets by EUR 42 billion and the actual decline in assets by EUR 142 billion is mainly attributable to the bursting of the dot-com bubble. This burst led to high price losses on the stock and securities markets worldwide.
- 2007 and 2008: The asset losses of these two years are attributable to the global financial crisis, which was triggered by the bursting of the U.S. housing bubble and the subsequent Lehman Brothers bankruptcy (see Klär, Lindner and Šehović 2013: 191).
- 2010 and 2011: The differences between actual capital gains and the theoretically expected increases of these two years are closely related to the decline in the prices of the bonds of the Southern European crisis states. At the same time, the inflow of capital into Germany through the purchase of German government bonds led to a rise in the price of these bonds. Federal bonds held by foreign investors represent a liability for Germany, meaning that the rise in German government bonds caused an increase in German liabilities and thus reduced net foreign assets (see Federal Ministry of Economics and Technology 2013:19).

Evaluation of the calculated loss of assets

A comparison between cumulative German current account surpluses and changes in net foreign assets was carried out in 2013 by several authors and intensively discussed. Klär, Lindner and Šehović calculated the loss of net foreign assets to be around EUR 270 billion for the period from 1999 to the third quarter of 2012. This corresponded to around ten percent of Germany‘s economic output for 2012 (see Klär, Lindner and Šehović 2013: 191). In their calculations, Baldi and Bremer arrived at a loss of wealth between 2006 and 2012 that amounted to approximately 20 percent of Germany‘s economic output (see Baldi and Bremer 2013: 32).

Once these results were presented, they were evaluated in an intense discussion. As a general point, it can be stated that the determination of foreign assets is associated with a high degree of uncertainty (see Baldi and Bremer 2013: 33). The Deutsche Bundesbank is even of the view that problems in statistical data collection are the determining cause of the calculated asset losses: The vast majority of the 2007–2013 discrepancy between cumulative net capital flows and the increase in net foreign assets is not to be attributed to crisis-related asset losses, but rather can be explained by the different statistical collection methods and price increases in German cross-border liabilities (see Deutsche Bundesbank 2014: 54).

In addition, it should be noted that valuation losses resulting from price and exchange rate fluctuations are initially only book losses. Thus, temporary valuation losses can be reversed in subsequent years if there is an increase in the prices of assets abroad or if the foreign currency appreciates. These developments can explain, for example, why the increase in German net foreign assets in 2005 was almost EUR 100 billion higher than the current account surplus of the same year (see Table 2). Valuation losses therefore become actual losses only when the foreign assets are (must) be sold at a loss.

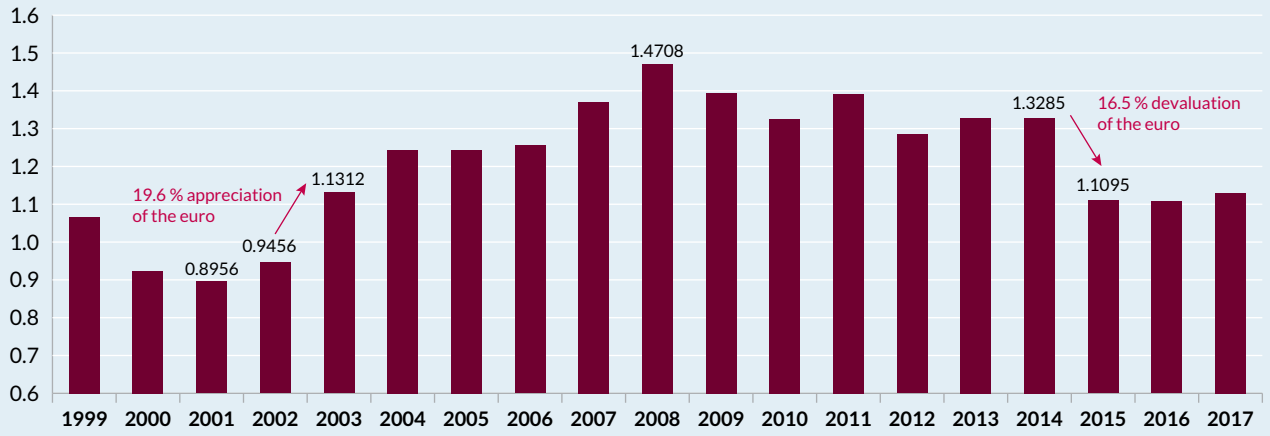
Even if statistical collection problems may account for part of the calculated asset losses and these losses are initially only book losses, there remains the risk of real asset losses due to value and exchange rate fluctuations. In particular exchange rate movements affect the value of the German asset portfolio significantly.

Exchange rate changes and asset losses

The importance of exchange rate movements for the development of the net foreign assets of an economy can be illustrated by a simple numerical example. Let's assume that there are only two countries, Germany and the United States. Germany achieves an export surplus of EUR 250 billion every year for ten years. For reasons of simplification, we will assume that there are no price fluctuations, no exchange rate changes and no depreciation of physical assets. The interest and dividends that German investors earn are spent by them for consumption purposes. The value of a euro is always one dollar during the entire ten years. After ten years, the value of Germany's foreign assets is thus EUR 2,500 billion or USD 2,500 billion.

At the beginning of the 11th year, there is an abrupt devaluation of the U.S. dollar by 20 percent. USD 1 is now worth only EUR 0.80. German foreign assets continue to have a value of USD 2,500 billion. Because of the dollar devaluation, however, this corresponds to an asset of only EUR 2,000 billion. The German economy has thus suffered a loss of assets in the amount of EUR 500 billion. This corresponds to the export surplus of two years. Since appreciation and depreciation of 20 percent within a short period of time are quite possible, such asset fluctuations are not unrealistic. For example, in the period from 2000 to 2017, the value of a euro (average value throughout the entire year) fluctuated between USD 0.89 (2001) and USD 1.47 (2008, see Figure 3). In the space of two years, there was both a nearly twenty percent appreciation of the euro (between 2002 and 2003) and a 16.5 percent euro devaluation between 2014 and 2015.

FIGURE 3 **Value of EUR 1 in USD (average for the year).**



Source: Deutsche Bundesbank 2018: 100.

BertelsmannStiftung

Exacerbating this situation is the fact that the German export surpluses – and their corresponding U.S. trade deficits – in turn have an influence on the exchange rate of the two currencies:

- The exports of a country represent the demand for the currency of that country on the foreign exchange market. If Americans want to buy German products, they must pay for them in euros, because the German companies pay their expenses (wages, rents, leases, interest, taxes, etc.) in euros. German exports thus ensure a demand for the euro on the international currency markets.

- The imports of a country represent the supply of that country's currency on the foreign exchange market. If German consumers want to buy American products, they must pay for them in U.S. dollars for the reasons mentioned above. In order to acquire dollars, they must offer euros on the foreign exchange markets and exchange them for U.S. dollars.

For a country with an export surplus, these relationships lead to an appreciation of the domestic currency:

- In the case of an export surplus, by definition the country's exports are larger than its imports. Consequently, the demand for the currency of that country is greater than the supply of that currency.

- A demand greater than the supply results in an increase in the price of the currency traded. The value of the currency is increasing, so there is an appreciation.

For the currency of a country with a trade deficit (that is, exports are lower than imports), these relationships lead to a devaluation.

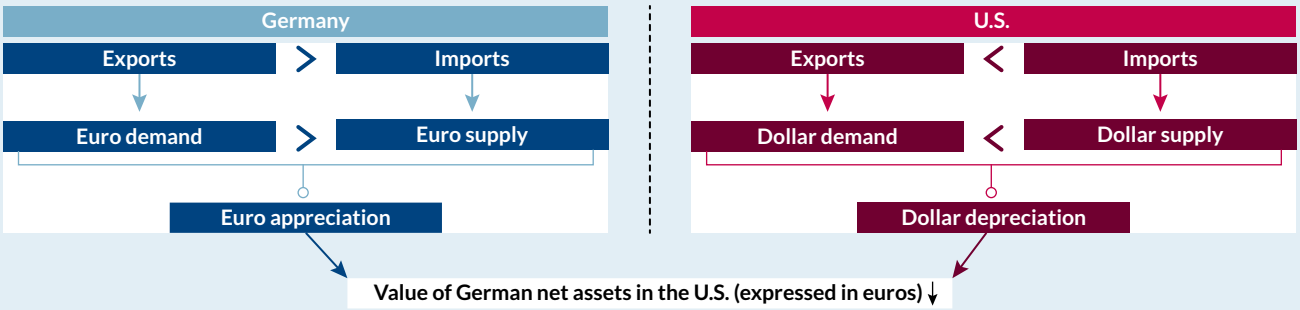
The interplay of trade imbalances and exchange rate changes will then inevitably lead to a loss of wealth for the country that generates an export surplus and in return acquires assets abroad. Related to the Germany-U.S. example outlined above, the following developments occur (see Figure 4):

- The German export surplus leads to a net capital export and thus to an asset accumulation on the part of German investors in the U.S.

- At the same time, the annual export surpluses cause the U.S. dollar to lose value against the euro each year. Thus the U.S. dollar is devalued every year.

- For the foreign assets of the German economy, expressed in euros, this means that these assets suffer depreciation-related losses every year.

FIGURE 4 **The relationship between trade imbalances and exchange rate changes.**



Source: author's own representation.

BertelsmannStiftung

As long as Germany generates export surpluses, currency-related asset losses are inevitable. In the long term, however, it should be borne in mind that demographic change, which is indeed a motive for German export surpluses, could compensate for these currency-related asset losses.

Demographic change and changes in the exchange rate

Demographic change – and above all the ageing of the population – has significant macroeconomic consequences. Among the most important are the following (see Lindh, Malmberg and Petersen 2010):

- If a growing number of retirees and pensioners encounter a shrinking workforce, it also means that there is a tendency for excess demand on goods markets. This leaves fewer goods and services for export, so that an existing export surplus becomes smaller.

- The consequence of a tendency for excess demand is an increase in the prices of goods. Rising prices worsen the international competitiveness of an economy and therefore reduce its exports.

- The disposable income of retirees and pensioners tends to be lower than the disposable income of the working population. Lower-income households are characterized by the fact that they have less of a possibility to accumulate savings. In an ageing society, therefore, savings decline in the aggregate. Decreasing savings mean that a higher proportion of domestic added value is needed in Germany. This reduces the country‘s export potential.

- With an ageing workforce, ultimately both labor productivity and innovation tend to decline. This also has a negative impact on the competitiveness of the country and in addition further reduces the export surplus.

Ultimately, it can therefore be assumed that the ageing of society will serve to reduce an existing export surplus and, in the long term, even lead to a trade deficit. This will also lead to a devaluation of the currency of the ageing society or to an appreciation of the currency in countries with a young and growing population.

For Germany, this means that over the long term, an appreciation of the currencies in which the current export surpluses are invested is to be expected. As a result, the asset losses related to exchange rates that are incurred in the export surplus phase could be recouped in the future.

Conclusion and outlook

The calculations made in this paper are only a very rough approximation to the valuation of German net foreign assets. Nevertheless, there is evidence that asset losses in the hundreds of billions occurred in the period under review here. Short-term asset losses, which represent only book losses, are unproblematic if the prices of the assets affected increase again over the long term.

The decisive factor is the value of foreign investment, expressed in euros, if Germany converts these assets back into money sometime in the future, in order to acquire goods and services in return, so that material well-being can be ensured even in the face of an ageing society. Whether price and currency-related asset losses are then actually compensated cannot be predicted. Such an assertion is not possible because the uncertainties regarding the long-term preservation of value of the investments abroad associated with the current export surpluses are too great.

In view of these uncertainties and the fact that Germany shows a considerable weakness in macroeconomic investment (see Box 2), it would be quite conceivable that higher domestic investments could constitute a better macroeconomic provision to deal with the ageing of the population. If Germany succeeds in increasing private and public investment in the future, this could potentially be a more sustainable macroeconomic preparation strategy for the ageing of the population. At the same time, higher domestic investment would boost domestic demand and thus reduce the German export surplus and current account surplus. This could also reduce the growing international criticism of German current account surpluses.

BOX 2 Investment gap in Germany

The fact that an investment gap exists in Germany is largely undisputed. With regard to the period from 1999 to 2012, DIW Berlin calculated an annual macroeconomic investment gap of three percent of German economic output, or EUR 75 billion, in 2013 (see Fratzscher, Gornig and Schiersch 2016: 275). In a study published in 2014, the German Association of Chambers of Industry and Commerce (DIHK) said that there was an annual macroeconomic investment gap of almost EUR 80 billion – EUR 60 billion in the private sector and EUR 18 billion in state infrastructure (see DIHK 2014: 4).

References

Baldi, G. and B. Bremer (2013). "Verluste auf das deutsche Nettoauslandsvermögen – wie sind sie entstanden?" *DIW Wochenbericht* No. 49/2013. 32–39.

Bundesministerium für Wirtschaft und Technologie (2013). "Fakten und Hintergründe zur deutschen Auslandsvermögensposition." *Schlaglichter der Wirtschaftspolitik – Monatsbericht Juli 2013.* 17–21.

Deutsche Bundesbank (2018). "Zahlungsbilanzstatistik Januar 2018". Statistical Supplement 3 to the Monthly Report. Frankfurt am Main.

Deutsche Bundesbank (2014). "Diskrepanz zwischen der Veränderung des Auslandsvermögens und des kumulierten Saldos der Kapitalbilanz: kein geeigneter Indikator für Vermögensverluste." *Monatsbericht Mai 2014.* 52–54.

DIHK (German Association of Chambers of Industry and Commerce). *Investitionsschwäche in Deutschland – DIHK-Schlaglicht Wirtschaftspolitik.* Berlin 2014.

Fratzscher, M., M. Gornig and A. Schiersch (2016). "Investitionsschwäche der Unternehmen schafft Handlungsbedarf". *DIW Wochenbericht* (83) 15. 275–280.

Klär, E., F. Lindner and K. Šehović (2013). "Investition in die Zukunft? Zur Entwicklung des deutschen Auslandsvermögens". *Wirtschaftsdienst* (93). 189–197.

Lindh, T., B. Malmberg and T. Petersen (2010). "Die ökonomischen Konsequenzen der gesellschaftlichen Alterung". *Wirtschaftsdienst* (90). 54–63.

Statistisches Bundesamt (2017). "Volkswirtschaftliche Gesamtrechnungen: Inlandsproduktberechnung, lange Reihen ab 1970." *Fachserie 18 Reihe 1.5*, published on 5.9.2017. Wiesbaden.

Statistisches Bundesamt (2018). *Bruttoinlandsprodukt 2017 für Deutschland – Begleitmaterial zur Pressekonferenz am 11. Januar 2018 in Berlin.* Wiesbaden.

Imprint
© February 2018
Bertelsmann Stiftung, Gütersloh
Bertelsmann Stiftung
Carl-Bertelsmann-Straße 256
33311 Gütersloh
Phone +49 5241 81-0
www.bertelsmann-stiftung.de

Responsible
Dr. Thieß Petersen

Author
Dr. Thieß Petersen

Translation
ETC Europe scri

Graficdesign
Nicole Meyerholz, Bielefeld

Picture
weyo - stock.adobe.com

Address | Contact

Bertelsmann Stiftung
Carl-Bertelsmann-Straße 256
33311 Gütersloh
Phone +49 5241 81-0

GED-Team
Program Shaping Sustainable Economies
Phone +49 5241 81-81353
ged@bertelsmann-stiftung.de
www.ged-project.de

www.bertelsmann-stiftung.de

BertelsmannStiftung