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Does Low Inflation Pose a Risk to Economic Growth and Central Banks Reputation?

Marek Dabrowski

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AEs	Advanced economies
APP	Asset Purchasing Program
BoE	Bank of England
BoJ	Bank of Japan
CAR	Capital Adequacy Ratio
CPI	Consumer Price Index
EA	Euro area
ECB	European Central Bank
EMDEs	Emerging Market and Developing Economies
EU	European Union
EUR	Euro
FDI	Foreign Direct Investment
Fed	Federal Reserve Board (of the United States)
G20	Group of Twenty
GDP	Gross Domestic Product
HICP	Harmonised Index of Consumer Prices
ICT	Information and Communication Technologies
IMF	International Monetary Fund
JPY	Japanese yen
LCR	Liquidity Coverage Ratio
MRR	Mandatory Reserve Requirements
QE	Quantitative Easing
TFEU	Treaty on the Functioning of the European Union
UK	United Kingdom (of Great Britain and Northern Ireland)
US	United States (of America)
USD	United States dollar
WTO	World Trade Organisation

Author

Marek Dabrowski is a Co-founder and Fellow at CASE – Center for Social and Economic Research in Warsaw, Non-Resident Scholar at Bruegel, Brussels, and Professor of the Higher School of Economics in Moscow. He was Chairman of the CASE Supervisory Council and President of its Management Board (1991–2011), Chairman of the Supervisory Board of CASE Ukraine in Kyiv (1999–2009 and 2013–2015), and Member of the Board of Trustees and Scientific Council of the E.T. Gaidar Institute for Economic Policy in Moscow (1996–2016). He also held the positions of First Deputy Minister of Finance of Poland (1989–1990), Member of Parliament (1991–1993), and Member of the Monetary Policy Council of the National Bank of Poland (1998–2004). Since the end of 1980s, he has been involved in policy advising and policy research in Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Egypt, Georgia, Iraq, Kazakhstan, Kyrgyzstan, Macedonia, Moldova, Mongolia, Montenegro, Poland, Romania, Russia, Saudi Arabia, Serbia, Somalia, Syria, Turkmenistan, Ukraine, Uzbekistan, and Yemen, and in a number of international research projects related to monetary and fiscal policies, growth and poverty, currency crises, international financial architecture, perspectives of European integration, European Neighbourhood Policy, and the political economy of transition. He has also worked as a consultant on a number of EU, World Bank, IMF, UNDP, OECD, and USAID projects. He was a Fellow under the 2014–2015 Fellowship Initiative of the European Commission – Directorate General for Economic and Financial Affairs, the author of several academic and policy papers, and an editor of several book publications.

Abstract

Inflation in advanced economies is low by historical standards but there is no threat of deflation. Slower economic growth is caused by supply-side constraints rather than low inflation. Below-the-target inflation does not damage the reputation of central banks. Thus, central banks should not try to bring inflation back to the targeted level of 2%. Rather, they should revise the inflation target downwards and publicly explain the rationale for such a move. Risks to the independence of central banks come from their additional mandates (beyond price stability) and populist politics.

1. Introduction

The low inflation in advanced economies (AEs)[1] in the years following the global financial crisis (GFC) of 2007–2009 provoked several questions of both a theoretical and a practical nature. First, fears of deflation were continuously present in both policy analyses and recommendations. Even if, fortunately, these fears never materialised, it was difficult to deny the presence of various deflationary pressures. Therefore, the second issue concerns the nature of these pressures – that is, the factors that determined these pressures and whether they had a temporary/one-off or permanent character. In this context, the third question concerns the role of monetary policy in countering deflationary pressures – in particular, the unconventional measures widely adopted by major central banks. This led to the fourth question on an exit strategy – monetary policy normalisation after deflationary pressures seemed to fade and both economic growth and employment recovered in 2015–2018. Finally, there is the question of the impact of the GFC, the post-crisis unconventional monetary policy measures, persistent low inflation and the new mandates and policy roles assumed by central banks on their reputation and independence.

Following the debate on monetary policy challenges in the post-GFC period and communication of monetary authorities (Draghi, 2019) one can get an impression that too low inflation is a key challenge faced by central banks. It may have negative consequences for their reputation (because they underperform the targeted/declared inflation level), in addition to negative effects on economic activity.

While we agree that deflationary pressures, which largely resulted from financial disintermediation (partly caused by the GFC itself and partly by new financial regulations and the unconventional tools of monetary policy), posed a major challenge to central banks in the previous decade, we do not believe that they continue to be a problem today nor will they be a problem in the near future, unless the world economy suffers a new financial crisis comparable to that of 2007–2009. Looking at the potential shocks that may hit the world economy, such as trade conflicts or security threats, we expect inflationary shocks

1 *The terms advanced economies* (AEs) *and emerging market and developing economies* (EMDEs) are borrowed from the International Monetary Fund's World Economic Outlook (IMF WEO) country grouping; for the most recent version of this grouping, see https://www.imf.org/external/pubs/ft/weo/2017/02/weodata/weoselgr.aspx.

rather than deflationary ones, so a continuous focus on deflation risk means fighting the previous war. Furthermore, in our opinion, the very low but positive inflation – if it is going to continue – has neither negative consequences for an economy nor can it damage central banks' credibility[2].

The purpose of this paper[3] is to justify our opinion analytically and to offer policy recommendations in respect of the future policies of central banks. Given the limited size of this paper, we will concentrate on inflation trends and monetary policy instruments, only marginally touching on other policies, such as fiscal and structural ones, or the more general debate on growth potential in a contemporary global economy and the major national economies.

The structure of the paper follows the above list of questions. In Section 2, we will look at recent inflation trends and try to answer the fundamental question of whether inflation is too low – in particular, whether the major advanced economies continue to face a deflationary threat. In Section 3, we will analyse the major deflationary factors of the last decade along with their sources. We will also try to predict whether they will continue in the near future. In Section 4, we will discuss the nature of the reputation risks faced by central banks that may lead to undermining their institutional independence and what kind of policy corrections can mitigate such risks. Section 5 contains conclusions.

In our analysis, we will use the data sources of the International Monetary Fund (IMF), Eurostat, the European Commission, the European Central Bank (ECB), the Frankfurt Stock Exchange and Robert Shiller's database on US stock and home prices.

2 See Gros (2019) who presents a similar opinion.

3 This is a revised and updated version of the briefing paper prepared for the European Parliament's Committee on Economic and Monetary Affairs, Monetary Dialogue, 23 September 2019 – see Dabrowski (2019b) for the original version. The views and opinions presented in this paper can be attributed only to the author and not necessarily to the European Parliament or any institution which the author is affiliated with.

2. Analysis of recent inflationary trends

In this section, we analyse the recent dynamics of annual inflation figures in the major world economies – members of the Group of Twenty (G20) (Subsection 2.1) and the member states of the European Union (EU) and euro area (EA) (Subsection 2.2). This is followed by an analysis of asset prices (stock and housing prices) in the United States and the EU (Subsection 2.3) and an analysis of gross domestic product (GDP), the output gap and unemployment (Subsection 2.4). Subsection 2.5 contains a brief comment on the nature of coronavirus related shock which hit the global economy in February and March 2020. Subsection 2.6 summarises the empirical findings in Section 2.

2.1. Recent inflation trends in major world economies

Table 1 in the Annex presents the annual inflation figures (measured in national Consumer Price Indexes [CPI]) of the major world economies – members of the G20 – for a 24-month period from January 2018 to December 2019. In the examined period, there is no incidence of negative inflation except for Saudi Arabia in most of 2019. Among the group of emerging market and developing economies (EMDEs), one can notice two-digit inflation in Argentina and Turkey. Since the end of 2017, the situation in Argentina has deteriorated with obvious signs of a currency crisis (see Dabrowski, 2019a; Dominguez-Jimenez, 2019), and inflation has accelerated as result of the rapidly depreciating exchange rate. Since February 2019, annual inflation in Argentina exceeds 50%.

In other EMDEs (India, Mexico, South Africa, Russia, Brazil and Indonesia), annual inflation oscillates around or exceeds 4–5% (in case of India it exceeds 8%). In the examined period, China and India have experienced inflation acceleration while Russia, Brazil and Mexico – some deceleration. Overall, despite lower inflation as compared with previous decades, large EMDEs can hardly be considered as those facing a risk of deflation. On the contrary, however, a few of them (Argentina, Turkey, India, Russia and Brazil) must struggle with the risk of macroeconomic destabilisation, currency depreciation and higher inflation.

Among AEs, Japan has the lowest inflation, oscillating between 0–1.5% (but in positive territory). Italy follows with annual inflation fluctuating around 1% in the examined period, exhibiting a downward trend in 2019. In other AEs (except South Korea), annual CPI growth

was higher, frequently exceeding 2%: in the United Kingdom, the United States and Canada – for several months in the examined period, and in France and Germany – for most of 2018. Thus, it is difficult to speak about the risk of deflation or persistent "subdued" inflation for most of the AEs. Japan, South Korea and Italy are the exceptions here – that is, their inflation rates have been indeed very low, especially in 2019 but have remained in positive territory.

2.2. Recent inflation trends in the EU and EA

Now we perform a similar analysis for the EU plus Norway, Iceland and Switzerland as well as each individual EU member state using the Harmonised Index of Consumer Prices (HICP) – see Table 2 in the Annex.

In the examined sample, only three countries recorded negative inflation – Iceland in early 2018 ("compensated" by higher inflation in the first half of 2019), Cyprus for a few months in 2018 and 2019, Portugal and Switzerland for few months in 2019 and Greece for just one month (October 2019). On the other end of the spectrum, in several countries – Estonia, Lithuania, Latvia, Luxembourg, Bulgaria, Czechia, Netherlands, Poland, Slovakia, Hungary, Romania, the United Kingdom, Norway and Sweden – inflation exceeded 2%, sometimes by a large margin and for several months.

Other countries represent a differentiated picture:

- In Cyprus, Croatia, Denmark, Finland, Greece, Ireland, Italy, Portugal and Switzerland, inflation remained low (fluctuating around 1% or between 1-2%) through most of the analysed period;
- In France, Germany, Austria, Belgium, Slovenia, Spain and Malta, inflation was a bit higher – between 1-2%, exceeding 2% in the second half of 2018 but with a downward trend in 2019;

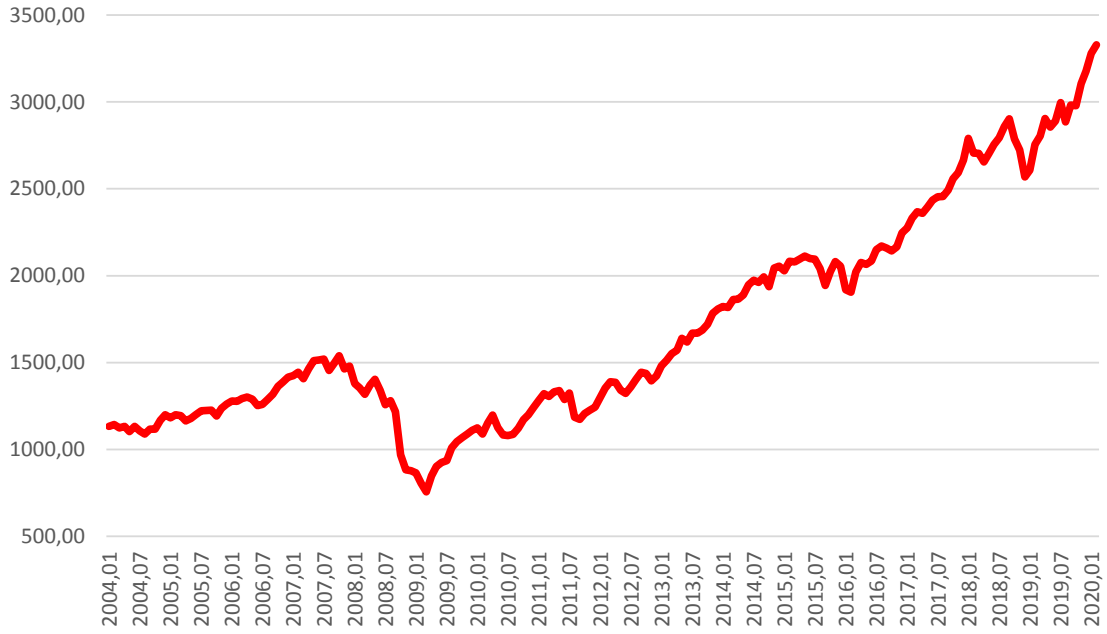
The EU as the whole recorded increasing HICP inflation in 2018 – from 1.5% in July 2017 to 2.3% in October 2018. However, inflation decreased gradually to 1.6% by June 2019. A similar tendency can be detected for the EA: HICP inflation increased gradually from 1.3% in July 2017 to 2.3% in October 2018, to return to 1.3% in June 2019.

The observed fluctuations in annual HICP inflation can be explained at least partly by the fluctuation of international energy prices (see Subsection 3.4). If we ignore these fluctuations and the cross-country differentiation of inflation dynamics, we obtain a picture of relatively stable inflation in the range of 12% for both the EU and EA. Again, this does not mean a deflationary threat at least in the near future.

2.3. Asset markets: evidence of inflationary pressures beyond consumer prices

Due to their composition being limited to consumer goods and services, the CPI or HICP have never been perfect measures of inflationary pressure, which is not always seen on the consumer market. One of the reasons for this may be the increasing global competitiveness of goods and services markets, which puts downward pressure on both consumer and producer prices and, indirectly, on wages (see Subsection 3.5).

Figure 1: US Stock Market Composite S&P Index, 2004–2020



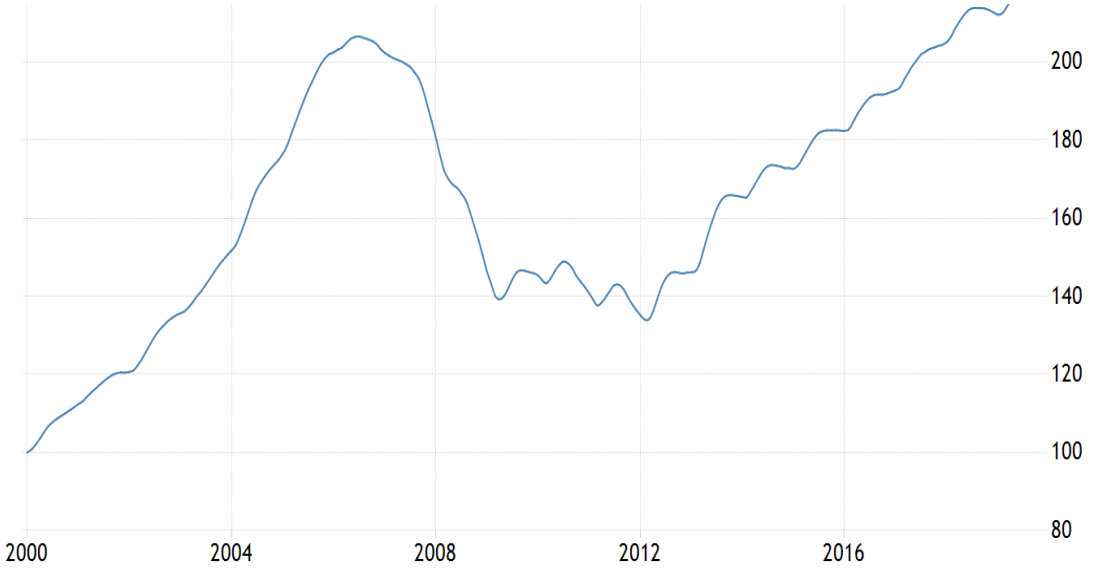
Source: Online data, Robert Shiller, http://www.econ.yale.edu/~shiller/data/ie_data.xls, extracted on 09.03.2020

Quite often, excessive liquidity is absorbed by asset markets – stock markets, real estate markets and commodity markets. This happened in Japan in the 1980s and in the United States in the second half of the 1990s and again during 2003–2007. These episodes ended with bubbles bursting, which had negative consequences for financial stability (as with the GFC).

Figure 2: Boerse Frankfurt Stock Market Index, 2012–2020

Source: Boerse Frankfurt, https://www.boerse-frankfurt.de/index/DE000A1EXV47

Figure 3: US Nominal Home Prices Index, 2000–2019 (01.01.2000=100)



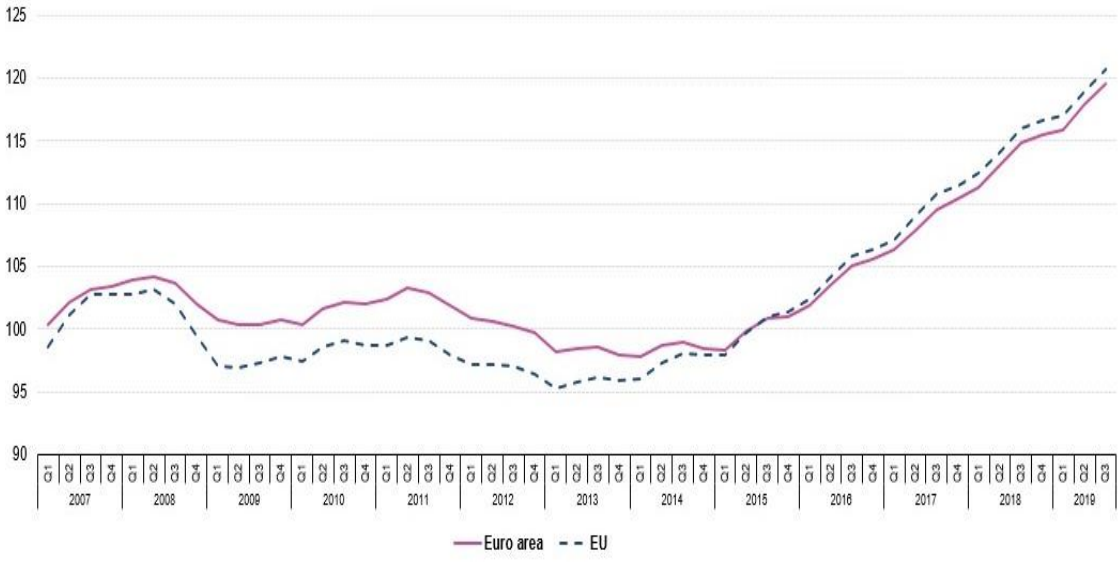
Source: https://tradingeconomics.com/united-states/case-shiller-home-price-index, extracted on 09.03.2020

The pros and cons of including asset prices into the price index were discussed extensively in the literature in the 1990s and early 2000s (see e.g. Goodhart, 2001; Bryan, Cecchetti, and O'Sullivan, 2002; Andersson, 2011), but with no implications for statistical practice. Many central banks take into consideration changes in asset prices in their monetary policy making, but the broader public concentrates its attention on changes in the CPI.

After the dramatic burst of asset bubbles in 2007–2008, the stock and real estate market indices recovered quickly. As seen in Figures 1 and 2, stock market indices doubled in the United States and more than tripled in the EA as compared to the highest pre-crisis level[4]. Concerning home prices, the situation is equally alarming. In 2018, the Case-Shiller home price index in the United States exceeded the record-high level of 2006 and continued growing (Figure 3). The same happened by an even greater margin in the EU and EA (Figure 4).

The rapidly growing asset prices in the United States and the EU/EA can be considered as dangerous for financial stability. Furthermore, they signal that actual inflationary pressures in both economies are higher than suggested by the CPI/HICP measures.

Figure 4: House Price Indices, EA and EU aggregates, 2007–2019Q3 (2015=100)



Source: Eurostat (online data code: prc_hpi_q), extracted on 08.03.2020

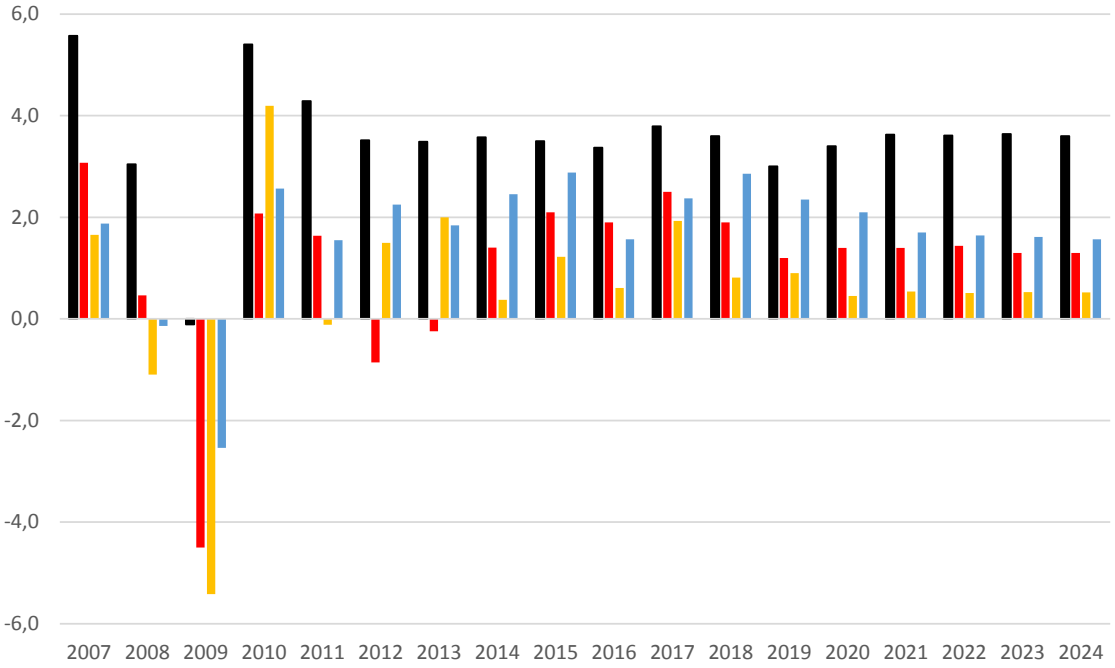
4 We consider the collapse of stock market indexes at the end of February and in March 2020 as result of the outbreak of coronavirus epidemy as a short-term shock – see more on this issue in Subsection 1.5.

2.4. Continuous growth and declining unemployment

In this subsection, we will supplement the analysis of inflation and non-CPI inflationary pressures (Subsections 2.1–2.3) with an overview of GDP trends, the output gap and unemployment.

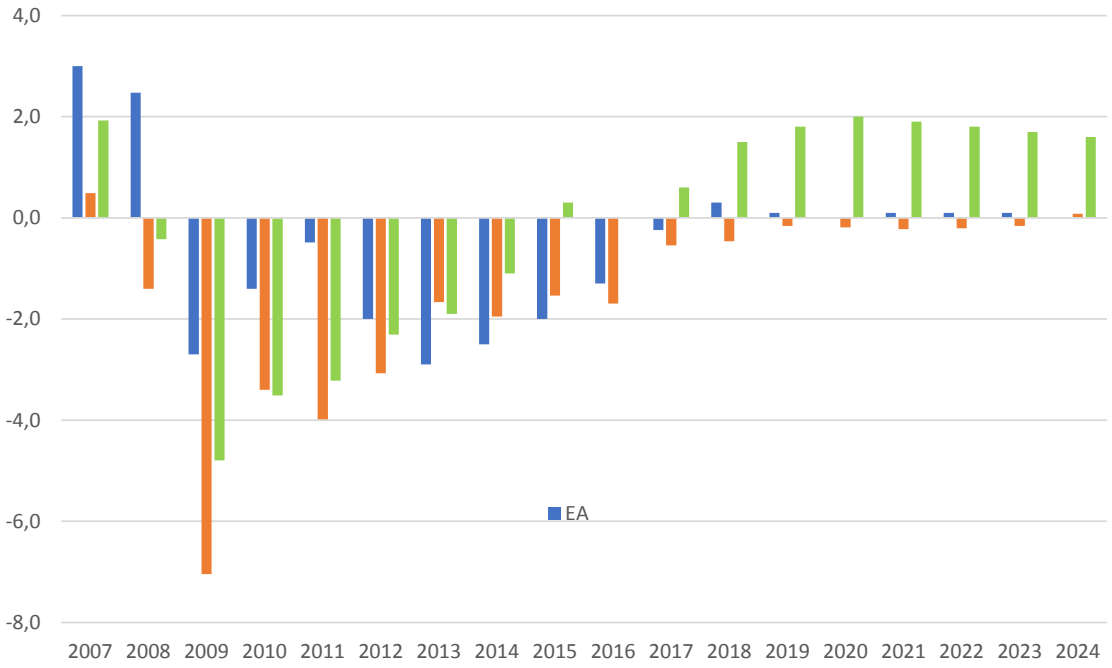
Figures 5 shows the annual growth of real GDP for the entire world economy and three major currency areas in the period 2007-2018, plus the IMF forecast until 2024. Regarding the United States, one can observe more than ten years of undisturbed growth, one of the longest in US economic history (Frankel, 2019a). In the EA, growth began after the second recession in 2013 (caused by public debt and the financial crisis on the periphery of the EA) and continues until now, although growth is weaker as compared to the United States. Growth in Japan began after 2011, but is the weakest among the three major economies.

Figure 5: Major currency areas: GDP in constant prices, annual percentage change, 2007–2024



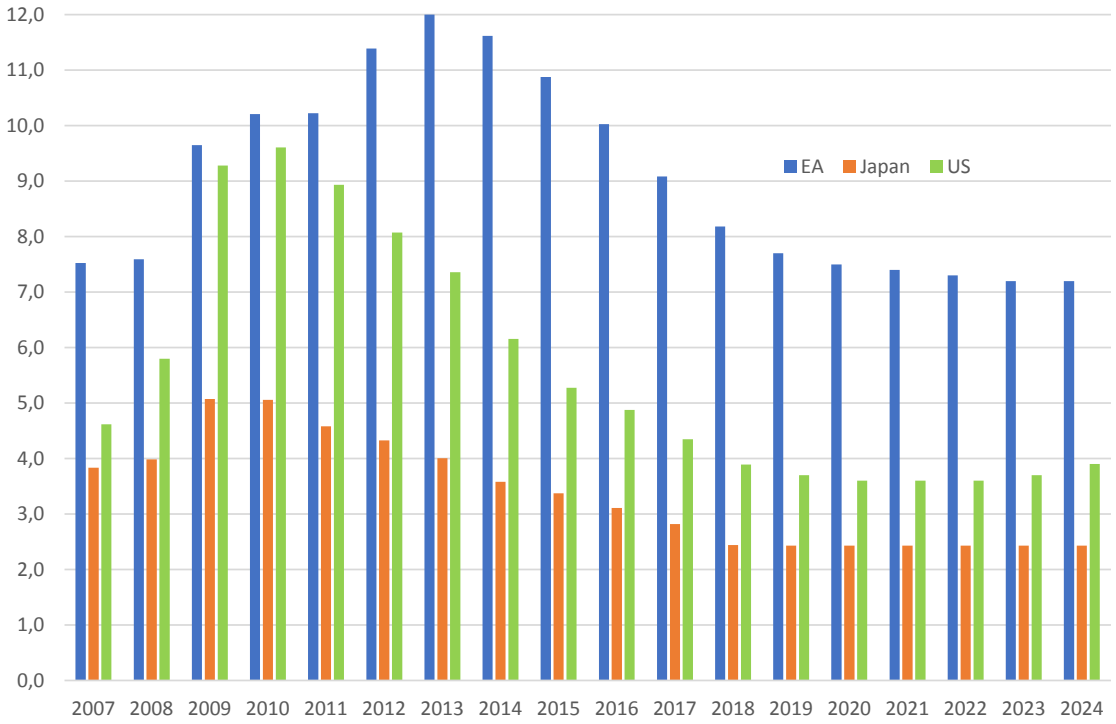
Source: IMF World Economic Outlook database, October 2019

Figure 6: Major currency areas: output gap as percent of potential GDP, 2007–2024



Source: IMF World Economic Outlook database, October 2019

Figure 7: Major currency areas: unemployment rate, percent of total labour force, 2007–2024



Source: IMF World Economic Outlook database, October 2019

Japan also continues to have a negative output gap in the range of –0.5% of GDP (Figure 6). The EA closed the output gap in 2018. The United States closed the output gap in 2015. Since 2018, it runs a substantial positive output gap in the range of 1.5–2.0% of GDP.

The above means that only the Japanese economy may suffer from insufficient demand and perhaps too tight monetary policy. On the other hand, growth potential in the three analysed economies is smaller than it used to be 20 or 30 years ago, mainly for demographic reasons (see Dabrowski, 2018).

Figure 7 shows that both the United States and Japan recorded historically low unemployment rates. In 2018, they amounted to 3.9% of the total labour force in the United States and 2.4% in Japan. In the EA, unemployment also decreased substantially from its highest level of 12% (in 2012), but still exceeded 8% in 2018. This is the effect of labour market imperfections and a legacy of the crisis in countries such as Greece, Spain, France and Cyprus (Table 5). On the other end of the spectrum, the unemployment rate in Germany reached a record-low level of 3.4% in 2018.

Intra-EA differentiation also concerns growth rates and output gaps. Although since 2017 all EA economies record positive growth, the rate varies between countries (Table 3). Ireland, Malta, Cyprus and the Baltic states represent the fastest growth dynamics while Italy, Greece, France, Germany and Belgium – the slowest ones. As of 2018, Greece, Italy and Finland had not closed the negative output gap (Table 4), and in Greece this gap is estimated at over 6% of potential GDP, a legacy of the heavy debt and financial crisis in the decade of 2010s.

The IMF World Economic Outlook forecasts presented in Figures 5–7 do not predict a serious slowdown, not foreseeing a recession in the medium term (until 2024). Clearly, there are a number of downside risks associated with the US-China trade and technology conflict and the other protectionist measures undertaken by the administration of President Trump. There are also risks related to the deterioration of the security situation in the Middle East, which may lead to an interruption of the oil supply and a sudden increase in oil prices (see Roubini, 2019). In Subsection 3.5, we will discuss the potential impact of trade tensions on inflation trends. Finally, there is an unexpected shock coming from the outbreak of coronavirus epidemic, which we comments in Subsection 1.5.

Table 3:EA economies: GDP in constant prices, annual percentage change, 2007–2018

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Austria	3.7	1.5	−3.8	1.8	2.9	0.7	0.0	0.7	1.1	2.0	2.6	2.7
Belgium	3.4	0.8	−2.3	2.7	1.8	0.2	0.2	1.3	1.7	1.5	1.7	1.4
Cyprus	5.1	3.6	−2.0	1.3	0.4	−2.9	−5.8	−1.3	2.0	4.8	4.5	3.9
Estonia	7.6	−5.1	−14.4	2.7	7.4	3.1	1.3	3.0	1.8	2.6	5.7	4.8
Finland	5.2	0.7	−8.3	3.0	2.6	−1.4	−0.8	−0.6	0.5	2.8	3.0	1.7
France	2.4	0.3	−2.9	1.9	2.2	0.3	0.6	1.0	1.1	1.1	2.3	1.7
Germany	3.0	1.0	−5.7	4.2	3.9	0.4	0.4	2.2	1.7	2.2	2.5	1.5
Greece	3.3	−0.3	−4.3	−5.5	−9.1	−7.3	−3.2	0.7	−0.4	−0.2	1.5	1.9
Ireland	5.3	−4.5	−5.1	1.8	0.3	0.2	1.4	8.5	25.1	3.7	8.1	8.3
Italy	1.5	−1.1	−5.5	1.7	0.6	−2.8	−1.7	0.1	0.9	1.1	1.7	0.9
Latvia	10.0	−3.5	−14.4	−3.9	6.4	4.0	2.4	1.9	3.0	2.1	4.6	4.8
Lithuania	11.1	2.6	−14.8	1.6	6.0	3.8	3.5	3.5	2.0	2.4	4.1	3.5
Luxembourg	8.4	−1.3	−4.4	4.9	2.5	−0.4	3.7	4.3	3.9	2.4	1.5	2.6
Malta	4.0	3.3	−2.4	3.5	1.3	2.8	4.6	8.7	10.8	5.7	6.7	6.8
Netherlands	3.8	2.2	−3.7	1.3	1.6	−1.0	−0.1	1.4	2.0	2.2	2.9	2.6
Portugal	2.5	0.3	−3.1	1.7	−1.7	−4.1	−0.9	0.8	1.8	2.0	3.5	2.4
Slovakia	10.8	5.6	−5.4	5.0	2.8	1.7	1.5	2.8	4.2	3.1	3.2	4.1
Slovenia	7.0	3.5	−7.5	1.3	0.9	−2.6	−1.0	2.8	2.2	3.1	4.8	4.1
Spain	3.8	1.1	−3.6	0.0	−1.0	−2.9	−1.7	1.4	3.7	3.2	3.0	2.6

Source: IMF World Economic Outlook database, October 2019

Table 4: EA economies: output gap as percent of potential GDP, 2007–2018

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Austria	2.8	2.9	–1.2	–0.7	1.0	0.5	–0.7	–1.6	–1.7	–1.1	–0.2	0.9
Belgium	2.0	1.4	–1.9	–0.4	0.2	–0.6	–1.4	–1.3	–0.8	–0.5	0.0	0.1
Cyprus	5.3	7.3	3.8	4.2	4.1	0.6	–5.7	–7.7	–6.9	–3.9	–1.5	0.1
Estonia	11.5	3.3	–11.0	–8.1	–2.4	–1.3	–2.2	–1.5	–1.9	–1.7	0.7	2.3
Finland	5.8	4.7	–3.9	–1.2	0.8	–1.0	–2.4	–3.7	–3.9	–2.3	–0.7	–0.4
France	1.7	1.0	–2.5	–1.5	–0.3	–0.8	–1.1	–1.0	–0.9	–1.0	–0.1	0.3
Germany	2.4	2.5	–3.8	–1.0	1.4	0.3	–0.8	–0.3	–0.3	0.1	0.9	1.1
Greece	5.4	4.1	–0.3	–4.6	–11.3	–15.4	–15.8	–13.3	–12.0	–10.8	–8.6	–6.1
Ireland	5.6	2.4	–3.8	–3.9	–4.2	–4.9	–3.2	–1.2	0.5	1.9	0.7	1.5
Italy	2.7	1.8	–3.2	–1.3	–0.5	–2.8	–4.1	–4.1	–3.4	–2.7	–1.4	–0.9
Luxembourg	5.4	2.2	–3.6	–0.3	0.5	–1.9	–0.9	0.4	1.3	0.9	–0.2	0.0
Malta	1.5	3.0	–1.2	0.3	–1.1	–2.1	–2.8	–0.9	2.3	0.7	0.5	1.0
Netherlands	2.4	3.3	–1.2	–0.7	–0.1	–1.8	–2.8	–2.5	–1.8	–1.2	–0.1	0.7
Portugal	1.3	0.7	–3.0	–1.6	–3.4	–7.2	–7.8	–6.8	–5.1	–3.6	–1.0	0.1
Slovakia	6.1	6.0	–4.1	–3.0	–2.9	–3.0	–2.8	–1.5	0.7	1.4	1.2	1.5
Slovenia	7.2	7.6	–1.5	–1.3	–1.2	–4.2	–6.1	–4.6	–4.3	–3.2	–1.3	0.2
Spain	6.0	4.7	–0.6	–1.6	–3.1	–6.1	–7.8	–6.8	–4.6	–2.6	–0.9	0.2

Note: no estimation for Latvia and Lithuania
Source: IMF World Economic Outlook database, October 2019

Table 5: EA economies: unemployment rate, percent of total labour force, 2007–2018

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Austria	4.9	4.1	5.3	4.8	4.6	4.9	5.3	5.6	5.7	6.0	5.5	4.9
Belgium	7.5	7.0	7.9	8.3	7.1	7.6	8.4	8.6	8.5	7.9	7.1	6.0
Cyprus	3.9	3.7	5.3	6.3	7.9	11.8	15.9	16.1	14.9	13.0	11.1	8.4
Estonia	4.6	5.5	13.5	16.7	12.3	10.0	8.6	7.4	6.2	6.8	5.8	5.4
Finland	7.0	6.4	8.3	8.5	7.8	7.7	8.2	8.7	9.4	8.8	8.6	7.4
France	8.0	7.5	9.1	9.3	9.2	9.8	10.3	10.3	10.4	10.1	9.4	9.1
Germany	8.6	7.4	7.7	6.9	5.9	5.4	5.2	5.0	4.6	4.2	3.8	3.4
Greece	8.4	7.8	9.6	12.7	17.9	24.4	27.5	26.5	24.9	23.6	21.5	19.3
Ireland	5.0	6.8	12.6	14.6	15.4	15.5	13.8	11.9	9.9	8.4	6.7	5.8
Italy	6.1	6.7	7.7	8.4	8.4	10.7	12.1	12.6	11.9	11.7	11.3	10.6
Latvia	6.1	7.7	17.6	19.5	16.2	15.0	11.9	10.8	9.9	9.6	8.7	7.4
Lithuania	4.2	5.8	13.8	17.8	15.4	13.4	11.8	10.7	9.1	7.9	7.1	6.1
Luxembourg	4.0	4.1	5.6	6.0	6.0	6.1	6.8	7.1	6.8	6.3	5.8	5.0
Malta	6.5	6.0	6.9	6.8	6.4	6.2	6.1	5.7	5.4	4.7	4.0	3.7
Netherlands	4.2	3.7	4.4	5.0	5.0	5.8	7.3	7.4	6.9	6.0	4.9	3.8
Portugal	8.0	7.6	9.4	10.8	12.7	15.5	16.2	13.9	12.4	11.1	8.9	7.0
Slovakia	11.2	9.6	12.1	14.5	13.7	14.0	14.2	13.2	11.5	9.7	8.1	6.6
Slovenia	4.9	4.4	5.9	7.3	8.2	8.9	10.1	9.7	9.0	8.0	6.6	5.1a
Spain	8.2	11.2	17.9	19.9	21.4	24.8	26.1	24.4	22.1	19.6	17.2	15.3

Note: a – IMF staff estimate
Source: IMF World Economic Outlook database, October 2019

2.5. Risks associated with coronavirus epidemic

The outbreak of the coronavirus epidemic in the Chinese province of Hubei in January and February 2020 has issued a powerful negative shock to the entire world economy. The magnitude of this shock has originated not necessarily from the number of people affected globally (on March 9 it amounted to 111 thousand people, more than 80 thousand of them living in China[5]) but from the associated panic and various administrative measures aimed at stopping contagion in individual countries.

5 See https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6

It is too early to assess both the magnitude of this shock and concrete channels of its impact on individual economies[6]. Most likely it will affect negatively both demand side (dumping private consumption) and supply side (temporary closures of enterprises, limits to movement of people, ban on travelling, cancellation of various kinds of public gathering, disruption of international supply chains, etc.). Nevertheless, we believe that the epidemic itself and its negative impact will not be long lasting (maximum few months) so it should damage neither demand nor potential output in longer term (beyond 2020).

It also seems that there is no role to play by monetary policy in responding to this shock. Instead governments should beef up capacity of public health service to deal with epidemic and provide an addressed support to enterprises and individuals who have been negatively affected by epidemic (Gros, 2020; Eichengreen, 2020)

2.6. Summary

The analysis presented in this section clearly demonstrates that, at the end of 2019, the world economy did not face a deflationary threat. Although some AEs, for example, Japan and the EA, recorded low inflation, it remained firmly in positive territory. On the contrary, there were signs of increasing inflationary pressure, especially on the asset markets.

In EMDEs, especially in the largest ones, there were large inflationary risks coming from capital outflows and depreciating currencies as well as from fiscal disequilibria and the danger of trade conflicts.

The real sector in AEs recovered from the GFC and performed at potential or above it (the United States), except for Japan and a few EA economies. In the latter case, however, it is hard to say that too tight monetary policy and too low inflation are responsible for the sluggish growth. Rather, these are structural, institutional and demographic problems that harm economic growth.

6 At the moment of writing this paper (the first decade of March 2020) there is only a few attempts of global analyses of the impact of coronavirus and they contain very preliminary findings – see e.g. Gopinath (2020); Demertzis et al. (2020)

3. Deflationary pressures after the global financial crisis – do they continue to work?

In this section, we will analyse the factors that had a deflationary impact on the economy in the decade following the GFC – namely, changes in financial intermediation, which led to a decline in the money multiplier (Subsection 3.1); changes in money velocity (Subsection 3.2); changes in monetary policy instruments, which gave the same effect (Subsection 3.3); and various supply-side shocks (Subsections 3.4–3.5). Finally, in Subsection 3.6, we will discuss the relevance of the "secular stagnation" hypothesis.

3.1. Financial disintermediation

The money multiplier is defined as the ratio between the broad money aggregate (i.e. money created by commercial banks and non-banking financial institutions) and the central bank's base money (also called reserve money, the monetary base or high-powered money). While there are various definitions of broad money, ranging from the sum of cash in circulation, demand and time deposits (M2) to broader aggregates which also include various quasi-money instruments (M3, M4 or M5)[7], this does not change the basic characteristic of the money multiplication mechanism of a fractional-reserve banking system.

A higher money multiplier increases the broad money created by a unit of the central bank's base money. On the contrary, a lower money multiplier decreases broad money, other things being equal (see Dabrowski, 2015).

Figure 8 shows that the money multiplier collapsed dramatically in the five major currency areas since the beginning of the GFC:

- In the United States, it decreased from 14.3 in 2007 to 4.0 in 2014, to partly recover to the level of 5.4 in 2018;
- In the EA, it decreased from 7.8 in 2007 to 3.7 in 2017 (although there were some fluctuations in between), to improve slightly to 3.8 in 2018;

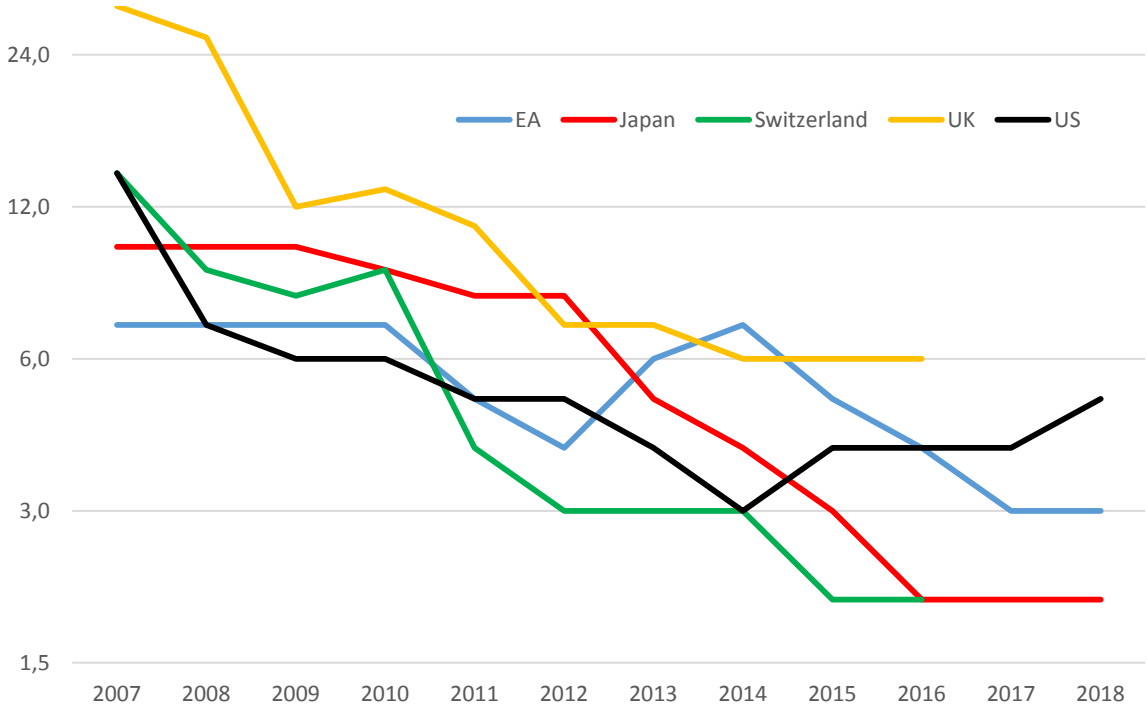
7 These definitions vary between monetary jurisdictions. The ECB uses aggregates of M1 (the sum of currency in circulation and overnight deposits), M2 (the sum of M1, deposits with an agreed maturity of up to two years and deposits redeemable at a notice of up to three months) and M3 (the sum of M2, repurchase agreements, money market fund shares/units and debt securities with a maturity of up to two years) – see http://www.ecb.europa.eu/stats/money/aggregates/aggr/html/index.en.html. While the M1 represents "narrow" money, the M2 and M3 are two various measures of "broad" money.

- In Japan, it went down from 10.8 in 2007 to 2.7 in 2018;
- In Switzerland, it went down from 14.2 in 2007 to 2.3 in 2016;
- In the United Kingdom, it decreased from 30.3 to 6.3 in the same period.

Among the factors that contributed to this decline, one can mention the immediate consequences of the GFC, which damaged the entire process of financial intermediation for several years. Banks, other financial institutions, non-financial enterprises and households had to repair their balance sheets, which made them cautious towards fresh borrowing and lending. In particular, commercial banks followed a more "conservative" business model, preferring to retain additional liquidity and capital margins (beyond what was required by prudential standards – see Subsection 3.3) rather than become engaged in risky lending.

However, this was only part of the story. Following the GFC, the regulatory environment for commercial banks and non-banking financial institutions was seriously tightened. This concerned, among others, increasing the capital adequacy ratio (CAR) and liquidity coverage ratio (LCR). In particular, increasing the LCR has a similar (negative) effect on the money multiplier and broad money creation as increasing the mandatory reserve requirement (MRR) – an instrument rarely used by central banks in AEs. Increasing the CAR can also suppress the money multiplier at least in the short term until commercial banks supplement their capital. The same concerns the fiscal instruments, such as taxes on banking transactions, which were introduced in several countries.

Figure 8: Money multiplier in major currency areas, 2007–2018 (broad money/base money), logarithmic scale



Source: IMF International Financial Statistics (www.data.imf.org) and author's own calculation

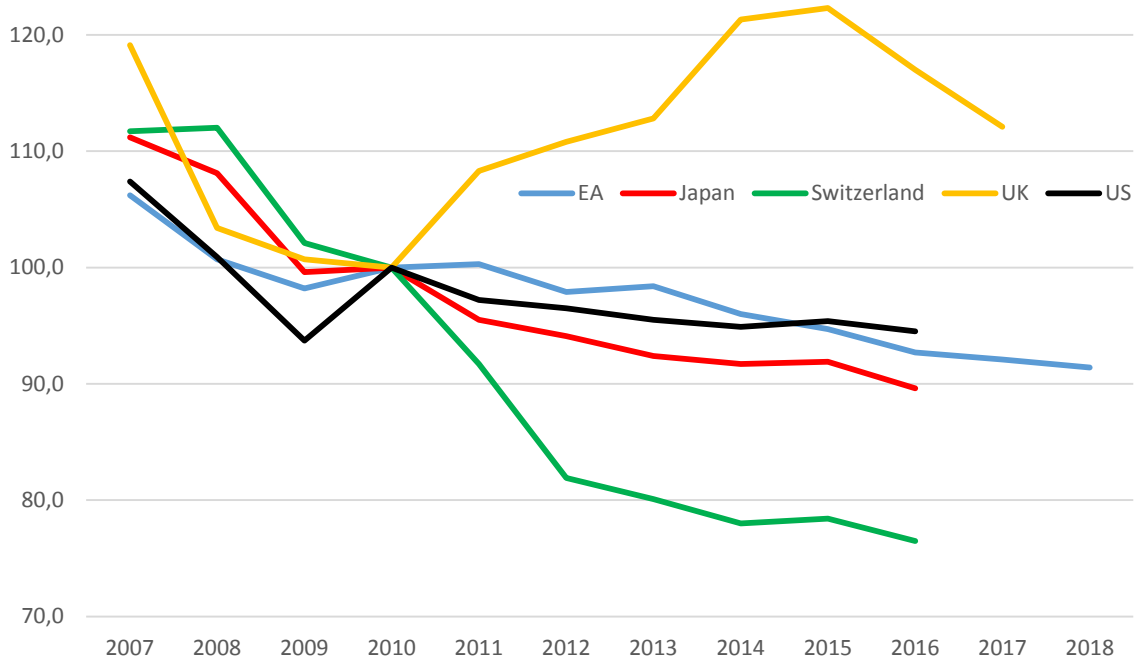
Another factor that could dampen the money multiplier is unconventional monetary policy. We will return to this issue in Subsection 3.3.

Overall, during the crisis and post-crisis period, the decline in the money multiplier was a powerful deflationary factor in the five analysed AEs. This single factor is sufficient to explain the continuous low inflation environment in which these economies operate. However, it is not likely that the money multiplier will decline in the coming years. Rather, as result of the gradual normalisation of monetary policy and the revival of financial intermediation (once banks fully adjust to a new regulatory environment), it can start to increase, as already observed in the United States since 2014. Furthermore, one cannot exclude that the successful pressure of the financial lobby, especially in the United States (Johnson, 2017), could lead to a partial relaxation of the post-crisis regulatory corset.

3.2. Decreasing money velocity

In parallel to the decreasing money multiplier (Subsection 3.1), broad money velocity also decreased in the analysed currency areas (Figure 9), including a particularly strong decline in money velocity recorded in Switzerland, with the United Kingdom the only country seeing velocity increase. Thus, demand for broad money increased across all currencies except for the British pound.

Figure 9: Income velocity of broad money in major currency areas, 2007–2018 (nominal GDP/broad money), 2010=100



Source: IMF International Financial Statistics (www.data.imf.org)

Part of the increasing demand for broad money has come from outside (i.e. from non--residents), given the increasing global role of major currencies and the tendency towards currency substitution in other currency areas (especially in EMDEs)[8] during periods of

8 In EMDEs, currency substitution during the GFC led to increasing money velocity, the depreciation of national currencies and inflation pressure, opposite to what was observed in major AEs (see Dabrowski, 2016).

prolonged financial turmoil and its associated macroeconomic uncertainty. For example, the increasing demand for the Swiss franc in the 2010s was caused by the flight to safe but liquid assets during the debt and financial crisis at the EA periphery (2010–2015).

Another part of the increased demand for money can be explained by deleveraging and the precautionary saving of residents at the time of the financial crisis and economic stagnation. This also included higher demand for cash in the environment of low inflation and low interest rates (see Jobst and Stix, 2017; Gros, 2017).

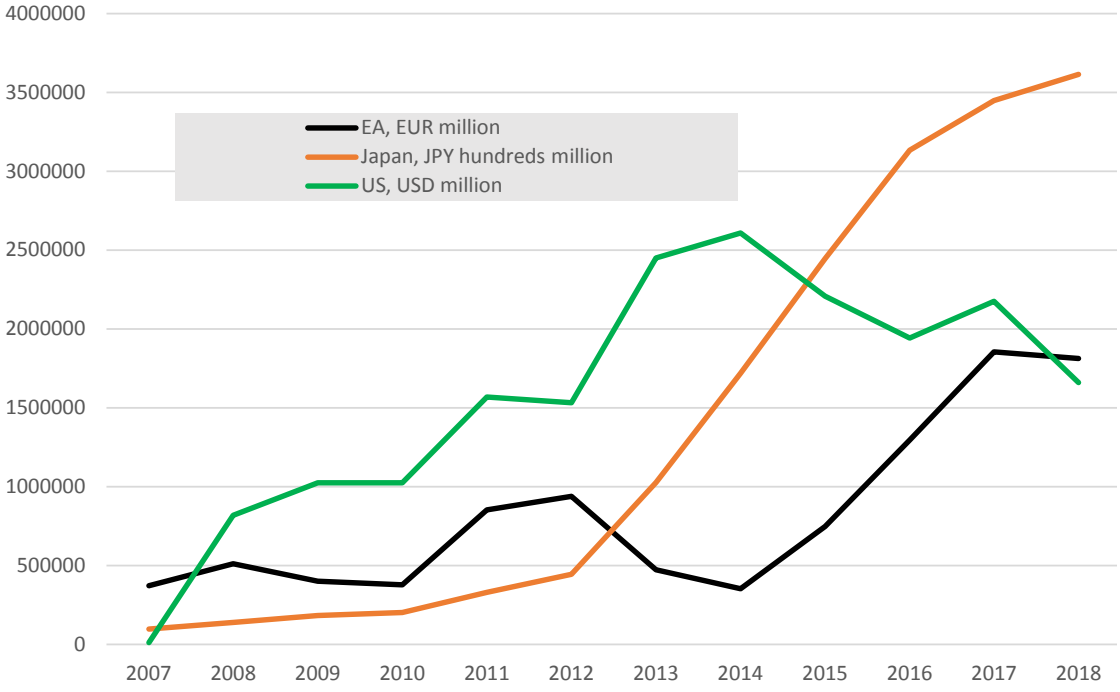
Overall, decreasing money velocity constituted an additional deflationary factor. While it is hard to forecast broad money velocity in the future, one cannot exclude the partial reversal of the trend observed in the last decade. This may be caused by an expected normalisation of monetary policy and a revival in financial intermediation (see Subsection 3.1).

3.3. Undesired effects of quantitative easing

In the aftermath the GFC, central banks in major currency areas cut interest rates to a near-zero level. As a consequence, they lost the "ammunition" to continue monetary policy easing when necessary[9]. Furthermore, financial disintermediation and the resulting dramatic collapse in the money multiplier (see Subsection 3.1) posed an immediate deflationary threat and required urgent action.

9 The Bank of Japan (BoJ) met this challenge a lot earlier – in the 1990s and early 2000s.

Figure 10: Central bank liabilities to other depository corporations, the United States, EA and Japan, 2002–2016, domestic currency



*Source: I*MF International Financial Statistics (www.data.imf.org) and author's own calculation

The purchase of government and commercial bonds by central banks in order to increase base money, popularly known as quantitative easing (QE), came as a response to this challenge. The US Federal Reserve System (the Fed) was the first to adopt this approach on a large scale. Since the end of 2008, the Fed conducted three rounds of QE until 2014 when it decided to stop further purchases. Then, from October 2017, it began to gradually reduce its asset holdings[10], a policy which was continued until August 2019. The Bank of Japan (BoJ), which experimented with this type of approach in the early 2000s, launched QE in 2011 and intensified it from 2013.

10 See https://www.federalreserve.gov/monetarypolicy/policy-normalization-discussions-communications-history.htm

The European Central Bank (ECB) conducted some asset purchase programmes in the aftermath of the GFC (Hartwell, 2018) and then carried out targeted actions to help EA countries in trouble, in particular, Greece (see Praet, 2016). However, a large-scale asset purchasing programme (APP) was only launched in March 2015 (Constancio, 2015)[11].

QE has raised much controversy, but it is beyond the remit of this paper to discuss this issue in detail (see Hartwell, 2018 for an overview of the successes and failures of QE). What is interesting for our analysis is the question of whether QE helped to neutralise the deflationary impact of the financial disintermediation discussed on Subsection 3.1. Our answer is partly positive: without a doubt, massive asset purchases led to the balance--sheet expansion of central banks – that is, the rapid growth of base money. However, at the same time, the money multiplier further collapsed due to increasing commercial bank deposits in central banks (Figure 10).

A comparison of Figures 8 and 10 suggests that periods of rapid decreases in the money multiplier and rapid increases in commercial bank deposits in central banks coincided with periods of QE, while stopping or slowing down direct asset purchases by central banks (e.g. by the Fed from the second half of 2013 and the ECB during 2012–2013 and 2017–2019) stabilised or even somewhat increased the money multiplier (and decreased banks' deposits with central banks).

Probably, QE has absorbed so many low-risk liquid securities from the financial market that commercial banks have had to increase their voluntary deposits in central banks to manage their liquidity (despite negative interest rates on their deposits from the ECB and BoJ). The alternative but not radically different interpretation is that commercial banks were restricted in their lending activities by the limited demand for credit (despite low interest rates) or by the various regulatory limits imposed on them as result of the far-reaching tightening of financial market regulation after 2008. If at least one of these hypotheses is correct, it can mean a sort of vicious circle where the instrument aimed at increasing the money supply partially brings the opposite effect.

Between 2017 and 2019 one might hope that with monetary policy normalisation this second-round deflationary effect will disappear. That is, stopping expansion of central banks' balance sheets (or even their gradual reduction) should prevent commercial banks from further increasing deposits with them.

However, normalisation either did not happened (the case of BoJ and ECB) or was reversed (the Fed). The ECB started again net assets purchases since 1 November 2019.[12] The Fed changed its monetary policy stance from tightening to neutral in March 2019

11 See https://www.ecb.europa.eu/explainers/show-me/html/app_infographic.en.html for operational details.

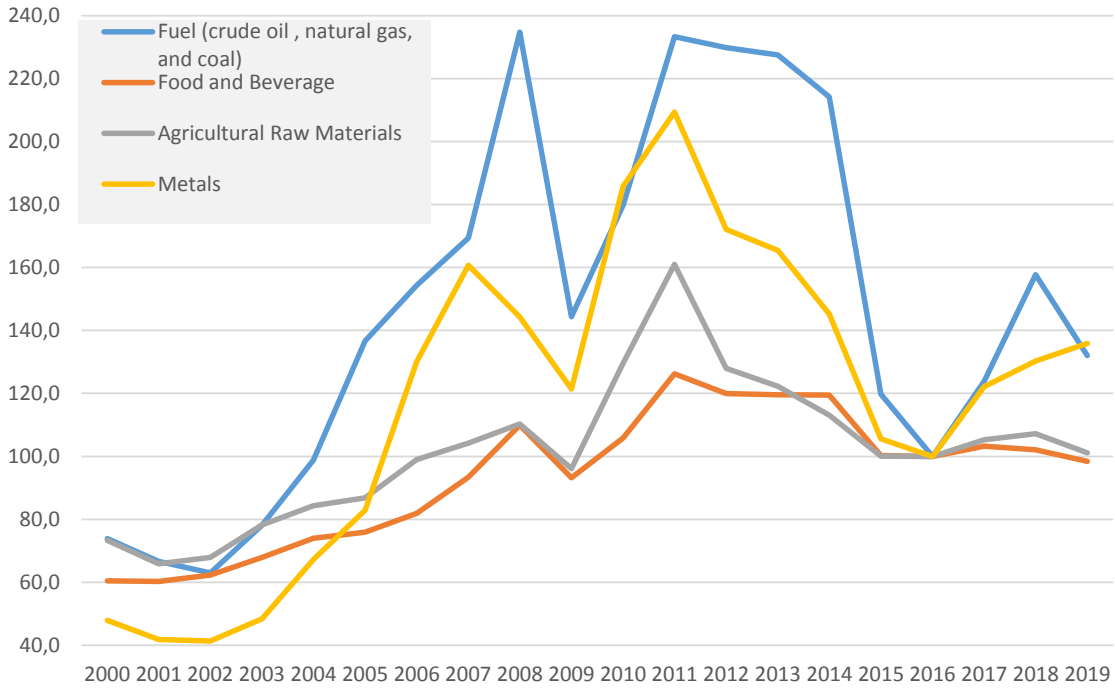
12 See https://www.ecb.europa.eu/press/pr/date/2019/html/ecb.mp190912~08de50b4d2.en.html

and easing in July 2019. Between July 2019 and March 2020, it cut the targeted Federal Fund Rate four times, cumulatively by 1.25 percentage points.[13] It also stopped reducing its balance sheets.[14]

3.4. Supply-side shocks: changes in commodity prices

During the 2000s and 2010s, AEs also had to deal with supply-side shocks, especially those originating from commodity markets. Domestic inflation was affected by changes in the prices of imported energy, food and other commodities such as metals, minerals and agricultural raw materials. Figure 11 shows that there were two periods of commodity price booms (2003–2008 and 2010–2013) and two periods of price decline (2008–2009 and 2014–2016). In 2017–2018, prices of fuel and metals, recovered a bit but fuel prices declined again in 2019. Prices of food and agriculture raw materials remained largely flat on a low level.

Figure 11: Indexes of commodity prices, 2000–2019, 2016=100



Source: IMF World Economic Outlook database, October 2019

13 See https://www.federalreserve.gov/monetarypolicy/openmarket.htm

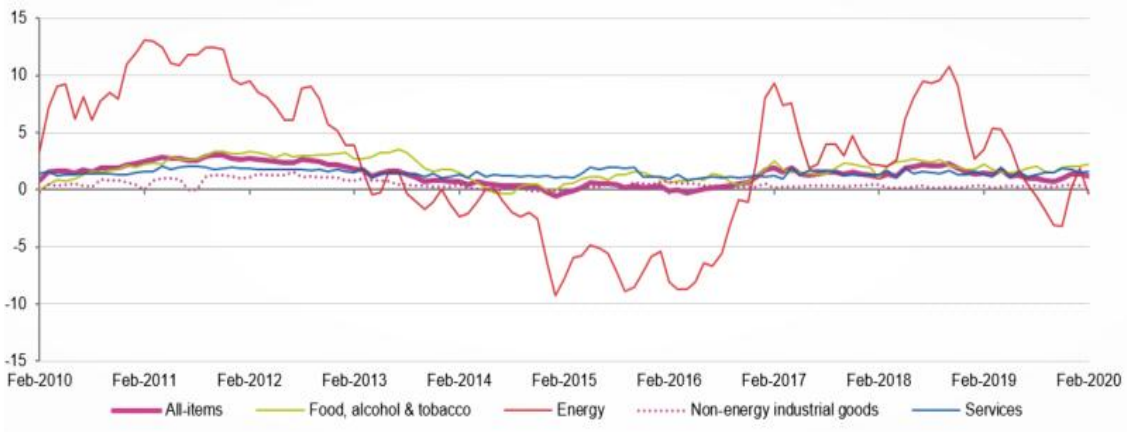
14 See https://www.federalreserve.gov/monetarypolicy/policy-normalization.htm

To be precise, fluctuations in commodity prices are influenced not only by supply-side factors, but also by changes in global demand (this could be observed, in particular, between 2007 and 2010). Nevertheless, for the individual economies, even large ones such as the United States, the EA and Japan, fluctuations in commodity prices can be considered as external supply-side shocks.

Figure 12 presents a decomposition of the EA's HICP into its major components. According to this decomposition, the fluctuations in international energy prices provided the strongest external price shock that had impact on the EA inflation rate.

A comparison of headline HICP with that in which the changes in energy prices and seasonal food have been deducted (a sort of "core" inflation measure) leads to two kinds of conclusions. First, it suggests that external supply-side shocks had various impacts on EA inflation – positive between 2010 and mid-2013, "neutral" between mid-2013 and mid-2014, negative between mid-2014 and 2016, moderately positive in 2017–2018 and moderately negative in 2019. Second, the HICP without the energy and seasonal food components presents less volatility than the headline inflation, which is well seen in the period between January 2018 and December 2019 (Table 2). In this time span, annual HICP inflation excluding energy and seasonal food prices varied between 1.2-1.6% in the EU and between 1.0-1.4% in the EA.

Figure 12: EA annual inflation and its main components, February 2010 – February 2020 (in percent)



Source: Eurostat, http://ec.europa.eu/eurostat/product?code=prc_hicp_manr&language=en&mode=view

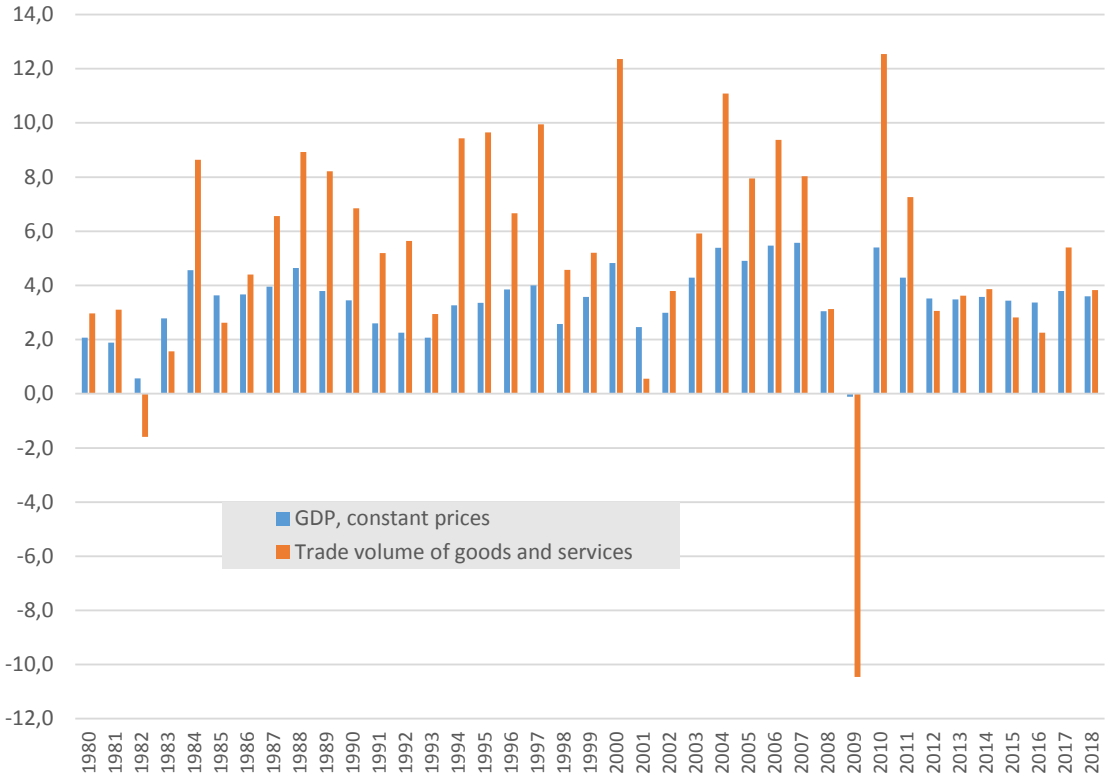
Looking ahead (beyond the coronavirus related shock – see Subsection 1.5), it is unlikely that energy prices will experience any further substantial fall. On the contrary, they can rebound from their current low level. In addition, policy measures aimed at preventing climate change – for example, the wider use of carbon taxation or energy trading schemes – can push these prices further up, especially in Europe. This would have a positive impact on headline inflation in the coming years.

3.5. Supply-side shocks: increasing global competition

Three and half decades of globalisation (since the mid-1980s) have contributed to a substantial increase in the global trade of goods and services, the pace of which exceeded the pace of economic growth for most of this period (Figure 13). This process was underpinned by far-reaching trade liberalisation, in particular, the successful completion of the Uruguay round in 1994, the creation of the World Trade Organisation (WTO) in 1995 and its further enlargement (especially the accession of China in 2001), policy reforms in several EMDEs and a plethora of multilateral and bilateral free trade agreements. The global liberalisation of financial markets, increased flows of foreign direct investment (FDI) and, to lesser degree, increased flows of labour migrants also supported this process. In parallel, the rapid progress in information and communication technologies (ICT) substantially reduced transaction costs and enabled trade in many types of services (see e.g. Baldwin, 2016).

Progress in globalisation means greater competition on international and, consequently, domestic markets. In the first instance, this concerns tradeable goods and services, but indirectly, via the substitution effect, it may also have an impact on some non-tradeables. From the monetary policy point of view, it means downward pressure on the prices of tradeable goods and services as well as on the wages and salaries in tradeable sectors[15]. At the same time, increasing global competition provides productivity gains, so declining prices have nothing to do with deflationary pressures.

Figure 13: World economy: comparison of GDP and trade dynamics, 1980–2018 (annual percentage change)



Source: IMF World Economic Outlook database, April 2019

15 This is a phenomenon well understood by central bankers (see e.g., Daly, 2019).

Looking at the decomposition of EA inflation (Figure 12), one can easily find confirmation of the above-described phenomenon: the prices of non-energy industrial goods (largely tradeable) grew at the slowest pace.

In summary, part of the lack of inflation in the 2010s can be attributed to more competitive global markets, which put downward pressure on the prices of tradeable goods and services. This factor also played an important role earlier: inflation in the pre-crisis boom years (2003–2007) could probably be higher if not for the moderating role of international competition. However, this may mean additional inflationary risks in years to come. The increasing global trade tensions caused by the protectionist policies of US President Donald Trump since 2017 can lead to the collapse of the global trading system and a reversal of globalisation gains (see e.g., Dadush and Wolff, 2019). In the worst-case scenario, it can lead to a new episode of stagflation – that is, higher inflation accompanied by economic stagnation and high unemployment, similar to what was experienced by AEs in the late 1970s.

3.6. Is "secular stagnation" the right concept to explain the macroeconomic situation in AEs?

In search of an explanation for the phenomenon of slower growth, low inflation and low long-term interest rates (as compared to the pre-GFC period), Summers (2016) and Summers and Stansbury (2019) returned to the concept of "secular stagnation", which was introduced by Hansen (1939) in an attempt to illustrate a somewhat similar situation in the US economy in the 1930s – that is, after the Great Depression of 1929-1933. Without going into detail on this concept and the surrounding academic debate, it can be summarised, in essence, as a situation of excessive saving and insufficient private investment.

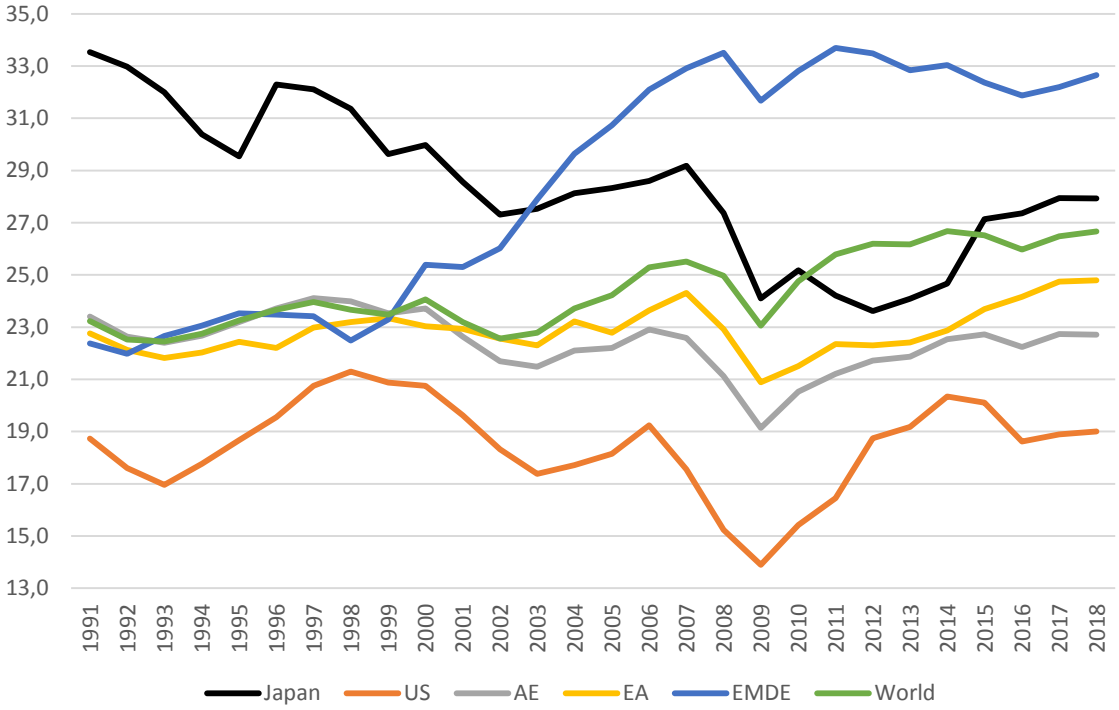
The next question concerns what leads to this type of situation. In its original concept, Hansen (1939) saw the reasons for slow growth and insufficient private investment could be traced to the fact that the US economy had reached its limits in technological progress and in the exploitation of natural resources, combined with slower population growth. These were supply-side factors. Gordon (2015) also attributes a contemporary slower growth to supply-side factors such as slower growth in total factor productivity (due to the expiring benefits of the ICT revolution) and slower population growth.

Other economists put their emphasis on demand-side factors, especially increasing private savings. Again, they differ between themselves in the explanation of this phenomenon. For example, Gottfries and Teulings (2015) argue that "*the increase in life expectancy, which has not been offset by an increase in the retirement age, has led to an increase in the stocks of savings*". Bernanke (2015) returns to his earlier concept of the "global saving glut" generated by several EMDEs, for example, China and oil producers.

In order to verify, at least partly, the controversial hypothesis of "secular stagnation", we will look at savings (Figure 14) and investment (Figure 15) rates in three major AEs (the United States, the EA and Japan) as compared to the entire AEs aggregate and EMDEs. The first observation is that after the GFC, both savings and investment rates grew in AEs; although, concerning the EA, the growth of the investment rate was delayed (as of 2013). In Japan, the savings rate started to grow as of 2012. Japan's investment rate has already returned to its pre-crisis level (in the first half of the 2000s), while in the United States and the EA, it has yet to fully recover. All three major AEs and the AEs as a group have returned to their pre-crisis savings rates. Second, all major AEs recorded a substantial decline in both investment and savings rates during the GFC. Third, in the longer term (since the early 1990s), Japan experienced a deep decline of the investment rate (by almost 10 percentage points of GDP between 1991 and 2007) and savings rate (by more than 4 percentage points in the same period). Fourth, the US saving rate remained low throughout the entire analysed period (in most years, below 20%). Fifth, in the pre-GFC period, EMDEs rapidly increased both their savings and investment rates to well above 30% of GDP and they currently remain at this level. They overcompensated the decline in savings and investment rates in AEs, leading to an increase of both rates in the world economy. Sixth, in terms of the savings-investment imbalance, there are both "surplus" and "deficit" economies (Japan and the EA belong to the first group while the United States belongs to the second). However, in the world of far-reaching capital mobility, it should not be of great importance.

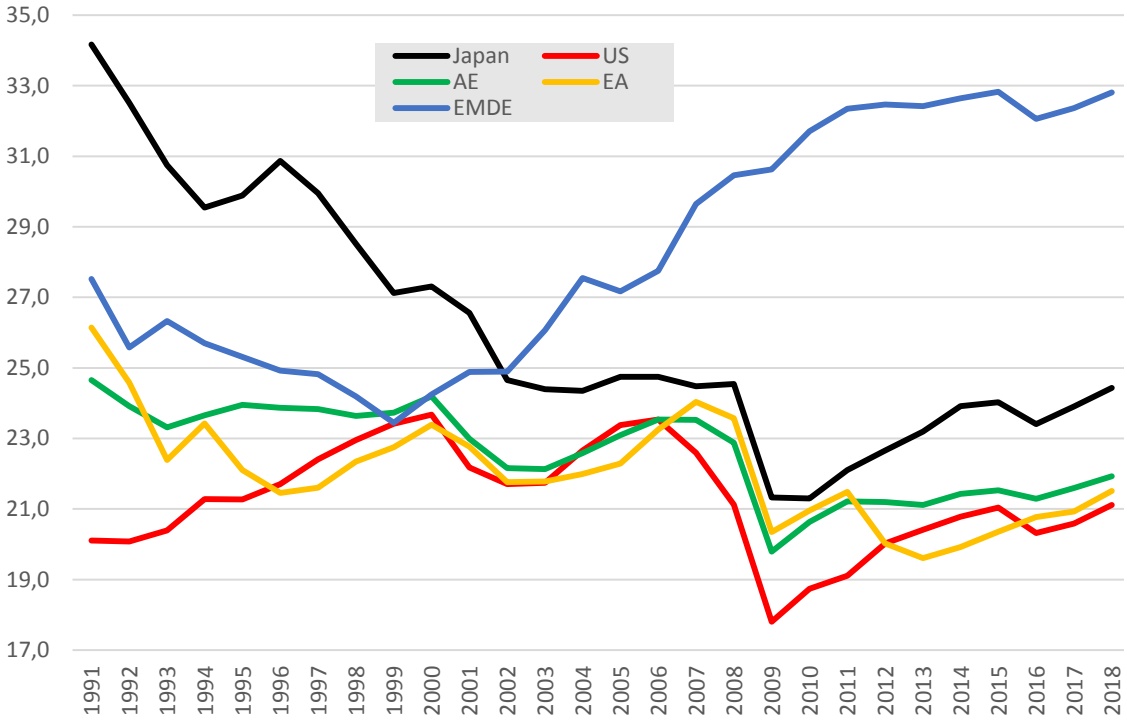
Overall, the analysis of both savings and investment rates confirms the "secular stagnation" hypothesis only partly for Japan and the EA, both of which indeed experience a savings surplus (over investment); regarding the EA, this surplus increased in the 2010s. Japan has experienced a substantial decline in its investment rate since the 1980s. In the EA, it remained largely stable until the GFC; however, it has yet to fully recover. In both cases, unfavourable demographic trends seem to be responsible for slower growth and perhaps also for lower investment rates.

Figure 14: Gross national savings as percent of GDP, 1991–2018



Source: IMF World Economic Outlook database, April 2019

Figure 15: Total investment as percent of GDP, 1991–2018



Source: IMF World Economic Outlook database, April 2019

However, the "secular stagnation" hypothesis hardly finds its confirmation in US macroeconomic data. The recipes offered by those who believe in secular stagnation, that is, the expansion of public investment programmes (Summers, 2016), are also controversial given the rapid expansion of public debt in the United States and many other AEs and the potential demographic roots of lower growth.

4. What can damage central banks' reputation and independence?

In this section, we are going to discuss issues related to the reputation and independence of central banks. Subsection 4.1 will be devoted to the question of whether low but positive inflation (below the declared inflation targets) could be considered a monetary policy failure and a blow to the reputation of central banks. Subsection 4.2 will focus on the risks to the reputation of central banks stemming from their multiple policy goals and numerous mandates. In Subsection 4.3, we will comment on the risks to central bank independence generated by political populism.

4.1. Do central banks underperform?

In the era of fiat money, central banks are expected to ensure price stability. In its literal meaning, "price stability" means an unchanging price level or zero inflation. Consequently, if, for some reason, the price level grew and inflation was above zero in period, the monetary policy of central banks should bring it down (below zero) in period t+1 to ensure price stability and the stable purchasing power of a given currency in the medium to long term. In practice, this does not happen because the operational definition of price stability is not zero inflation; rather, it is positive inflation, most frequently at the level of 2% (in AEs). For example, in the United States, the Fed set the annual inflation target at 2%[16] – the same concerns the BoJ[17].

According to Article 127.1 of the Treaty of the Functioning of the European Union (TFEU), the ECB shall *"...maintain price stability"*. In the original operationalisation of this primary policy objective, the ECB's Governing Council set the inflation target in 1998 as *"a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2%"*. This was a sufficiently flexible definition to accommodate periods of low inflation like that in the 2010s. However, it was redefined in 2003 as inflation *"...below, but close to, 2% over the medium term"*[18].

16 https://www.federalreserve.gov/newsevents/pressreleases/monetary20120125c.htm

17 https://www.boj.or.jp/en/mopo/outline/qqe.htm/

18 https://www.ecb.europa.eu/mopo/strategy/pricestab/html/index.en.html

There is no explicit justification of the 2% inflation target in the official documents of the analysed central banks. Indirectly, however, one can learn some arguments in favour of the 2% target from past academic debate.

The first argument is that the most frequently used CPI methodology leads to inflation overmeasurement due to underestimating the substitution effect, quality improvement and the new product effect. According to the findings of the Baskin Commission in the United States (Final Report, 1996), CPI inflation in the United States in the 1990s was overestimated by more than 1% percentage point annually. Gordon (2006), who was a member of this commission, claims that official US inflation was overestimated in the entire 20th and early 21st century. However, we do not know whether this type of over-measurement was a specific US phenomenon or if it has also happened in other economies. Furthermore, it is not clear whether inflation in the United States continues to be over-estimated because measurement methods have since been changed. Furthermore, even if the officially measured inflation still exceeds actual inflation, the question is whether it creates deflationary expectations and harms business activity.

The second argument concerns the downward rigidity of wages and prices, which makes their adjustment in an environment of near zero inflation painful (because of the necessity of a nominal decrease for some of them)[19]. However, if we accept the argument on the more competitive character of contemporary markets due to globalisation and technological progress (see Subsection 3.5), adjustment costs should be lower than they were in the past. And indeed, this seems to be the case today (see Gros, 2019).

Finally, there is a fear that very low inflation may easily turn into deflation (Sanchez and Kim, 2018; Gros, 2019). The inflation statistics from the 2010s examined in Subsections 2.1 and 2.2 do not suggest this may happen easily. Furthermore, there is no convincing argument that deflation is more likely to happen if inflation is in the range of 1.0–1.5% rather than around 2%.

On the other hand, as Leidy and Tokarick (1998) argue, there are some benefits to very low inflation, such as higher growth and a less distortionary effect of non-indexed tax rates and thresholds. We may also add low inflation/stable price expectations, which soften pressure for wage increases and lower nominal interest rates.

One may also argue that this low inflation and the resulting low inflationary expectations make the central banks' job easier in the sense that there is less doubt in their ability to deliver genuine price stability. Consequently, it should help to build up their reputation as the guardians of stable money.

19 See Leidy and Tokarick (1998) for an overview of pros and cons of very low inflation.

Unfortunately, in reality the situation is more complicated. Quite often, central banks are criticised for not delivering their inflation "plans"[20]. Such criticism comes not only from those who believe that higher inflation helps economic growth and employment but also from "perfectionists" for whom meeting the declared inflation figure is the most important (e.g., Darvas, 2018). Certainly, central banks face communication problems (see Lane, 2019) which may negatively impact their ability to guide market expectations.

To solve this dilemma, central banks should correct their operational inflation targets to lower levels[21]. Regarding the ECB, this could be done by returning to its 1998 definition of price stability. For the Fed and BoJ, this would require changes in their declared medium-term inflation targets, which is possible within their legal mandates. In countries such as the United Kingdom or New Zealand, where the inflation target is set by the government (Treasury), this would require respective changes in government policies. Consequently, in their communications with markets, governments and the general public, central banks should explain the reasons for and benefits of low inflation rather than apologising for missing an outdated inflation target and promising to meet it in the future.

4.2. Multiple policy goals and multiple mandates

In most countries, the mission of central banks is not limited to guaranteeing price stability. Depending on the country or currency area, they are also expected to support economic growth, promote maximum employment (in the case of the United States), moderate long-term interest rates (also in the case of the United States)[22] and ensure financial stability, among others. Concerning the ECB, price stability is its primary policy objective, having priority over supporting "general economic policies" (Article 137.1 of TFEU). In other jurisdictions such as the United States, these objectives seem to have equal weight. Multiple policy goals may create uncertainty over which objective will be given priority.

In the macroeconomic environment of the 1990s and 2000s, when gains from both globalisation and the ICT revolution put downward pressure on price levels and pushed up potential growth, the conflict between price stability and the goals of economic growth and full employment was not so evident. However, the situation changed in the 2010s when the growth rate was lower due to supply-side constraints such as unfavourable demography and slower productivity growth (Gordon, 2015).

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20 Paradoxically, they were rarely criticised when inflation systematically exceeded the declared target, for example, in mid-2000s.

21 This is also suggested by Frankel (2019b) and Gros (2019)

22 https://www.federalreserve.gov/newsevents/pressreleases/monetary20120125c.htm

Despite the fact that the economy is growing at its potential (the EA) or above it (the United States) and unemployment has reached historically low levels as compared to previous decades (see Subsection 2.4), several economists and politicians believe that the main constraint is generated by insufficient demand[23]. This creates the temptation to push central banks for further monetary easing. Sadly, central banks in several AEs are ready to give in to such pressures. The hesitation of the ECB to phase out QE (and its readiness to continue it) and the Fed's quite unexpected turn to an easing policy stance in July 2019 confirms the effectiveness of such pressures (see Subsection 2.3).

The situation will become even worse if the trade conflict between the United States and China causes the collapse of the multilateral trade system. The same, although on a smaller scale, applies to Brexit. Reversing gains from globalisation will lead to both higher import prices and stagnation/recession. In a situation such as this, the pressure on central banks to further ease monetary policy by using unconventional measures will further increase, even if monetary policy is unable to compensate for adverse supply shocks (Frankel, 2019b). There are signs that both the Fed and the Bank of England (BoE) are ready for such accommodative policies. This may create a serious challenge to the reputation and independence of central banks that is much greater than below-the-target inflation (see Subsection 4.1).

The additional possibility for conflicts of interest was created by the new tasks that central banks received after the GFC: macroprudential regulation and supervision, financial stability, and the regulation and supervision of commercial banks (in the case of the BoE and the ECB). There are many pragmatic arguments in favour of such an institutional solution – for example, the institutional independence of central banks, the professionality of their staff, the similarity of tasks and interlinks between price and financial stability, among others (Dabrowski, 2015). However, there are also potential downsides.

Price and financial stability goals do not always go hand-in-hand and achieving them requires different policies which may be contradictory at a given point in time (Cukierman, 1996). Furthermore, the concept of financial stability is not always precisely defined in operational terms (Issing, 2003; Wall, 2014) and there are no good operational models to guide central banks on how to achieve their financial stability goals using monetary policy tools (Wall, 2014).

Most importantly, when central banks are responsible for micro-prudential regulation and the supervision and stability of the banking and financial system, they may easily become involved in quasi-fiscal operations aimed at the rescue of banks. This was observed

23 On the other hand, even advocates of the "secular stagnation" hypothesis agree that further monetary policy easing cannot help to push the economy out of an insufficient demand trap (see Summers and Stansbury, 2019) and suggest fiscal expansion to achieve this goal. However, it is beyond thematic remit of this paper to discuss the pros and cons of such a proposal.

on numerous occasions during the GFC and the European debt and financial crisis. This type of involvement can seriously damage their reputation and independence.

The same or even more can be said about ideas to engage central banks in supporting socially and economically desirable policies, for example, reducing carbon emission (see e.g., Schoenmaker, 2019). Implementation of such proposals would mean conducting by central banks quasi-fiscal functions and activities on a permanent basis, something what is well known from history of non-market economies. Apart from danger of compromising their main mandate (price stability) such evolution would create an additional challenge to their independence (performing quasi-fiscal functions may serve as an argument in favour of direct parliamentary oversight).

4.3. Populist ideas and pressures

For populists of various political colours and autocratic or semi-autocratic rulers, an independent central bank has always been a tempting target for political attacks and interventions. This is frequently the case in EMDEs, especially those with a deficit of democracy and rule of law.

Unfortunately, the recent wave of populism across the world has intensified these types of attacks and put several central banks in difficult positions. Presidents and prime ministers often try to present their own monetary policy theories and publicly instruct central bankers on how to set interest rates. When central bankers do not follow these instructions, they are replaced by those who are more ready to compromise. This pressure on central banks can be observed not only in EMDEs such as Turkey and India but also in some AEs – in particular, in the United States. The unprecedent attack of the US President Donald Trump against the Fed Chairman Jerome Powell on 23 August 2019 (Hotten, 2019) sets a new and very worrying standard in relations between the executive power and the central bank. This creates a serious risk that several decades of consensus on central bank independence can be lost (Rajan, 2019; Barro, 2019), with devastating consequences for macroeconomic and financial stability.

5. Conclusions

The world economy, including the largest AEs such as the United States, the EA and Japan, did not face a deflationary threat at the end of 2019. True, inflation is low by historical standards, but there are no signs it can turn into a deflationary spiral. On the contrary, inflationary pressures continue to be seen on the stock and real estate markets both in the United States and Europe. The additional risks of pushing prices up can come from protectionist trade policies and the disintegration of the global trade system.

The deflationary impulses observed in the decade following the GFC, such as financial disintermediation or declining money velocity, seem to have exhausted their potential. More likely, financial intermediation will gradually rebound and the money multiplier, which fell dramatically after the GFC as result of new financial regulation and as a side-effect of unconventional monetary policies, will increase again.

Economic growth in the largest AEs is slower than before the GFC and faces several downside risks (related to political factors). However, most AEs (except Japan) have closed the output gap – that is, they grow at or above their potential. Constraints are on the supply side (mainly demography and slow productivity growth since the mid-2000s), and monetary policy is unable to relax them.

There is much confusion and misunderstanding surrounding low inflation. First, there is no evidence that it may damage economic growth. Therefore, attempts to bring it back to an earlier declared target (in most cases, 2%) seem pointless. Second, below-the-target inflation should not be a matter of shame for central banks. On the contrary, it confirms that price stability and low inflationary expectations are better rooted than one might have expected few years ago. Consequently, central banks should not apologise for low inflation; rather, they should correct numeric inflation targets downwards and explain to the general public why it makes sense.

The challenges to the reputation and independence of central banks are coming from other angles. First, these challenges are the expectation that central banks can help boost economic growth. This is the case when inflation is high or moderate – bringing it down is beneficial for economic growth. However, under current circumstances, central banks can do little or nothing to boost economic growth because it is constrained by supply-side

factors. Second, overburdening central banks with tasks such as supporting economic growth, employment, financial stability, macroprudential regulation and bank supervision may undermine their primary mission – that is, their responsibility for price stability. In some extreme cases such as engaging in rescuing banks in distress, central banks may be pushed into conducting quasi-fiscal operations, which is a slippery slope towards losing their institutional and economic independence. Third, the increasing incidence of political extremism in both EMDEs and AEs makes central banks easy targets for populist attacks, which can eventually undermine their independence.

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Table 1: G20: annual CPI rate of change in %, January 2018 – December 2020

Country/ Group	2018M01	2018M02	2018M03	2018M04	2018M05	2018M06	2018M07	2018M08	2018M09	2018M10	2018M11	2018M12	2019M01	2019M02	2019M03	2019M04	2019M05	2019M06	2019M07	2019M08	2019M09	2019M10	2019M11	2019M12
EU28	1.6	1.4	1.6	1.5	2.0	2.1	2.2	2.2	2.2	2.3	2.0	1.6	1.5	1.6	1.6	1.9	1.6	1.6	1.4	1.4	1.2	1.1	1.3	1.6
Germany	1.5	1.2	1.7	1.3	2.5	2.1	2.2	2.1	2.2	2.6	2.2	1.7	1.7	1.7	1.4	2.1	1.3	1.5	1.1	1.0	0.9	0.9	1.2	1.5
France	1.5	1.3	1.7	1.8	2.3	2.3	2.6	2.6	2.5	2.5	2.2	1.9	1.4	1.6	1.3	1.5	1.1	1.4	1.3	1.3	1.1	0.9	1.2	1.6
Italy	1.2	0.5	0.9	0.6	1.0	1.4	1.9	1.6	1.5	1.7	1.6	1.2	0.9	1.1	1.1	1.1	0.9	0.8	0.3	0.5	0.2	0.2	0.2	0.5
UK	3.0	2.7	2.5	2.4	2.4	2.4	2.5	2.7	2.4	2.4	2.3	2.1	1.8	1.9	1.9	2.1	2.0	2.0	2.1	1.7	1.7	1.5	1.5	1.3
Turkey	10.4	10.3	10.2	10.9	12.1	15.4	15.9	17.9	24.5	25.2	21.6	20.3	20.4	19.7	19.7	19.5	18.7	15.7	16.7	15.0	9.3	8.6	10.6	:
Russia	2.2	2.2	2.4	2.4	2.4	2.3	2.5	3.1	3.4	3.5	3.8	4.3	5.0	5.2	5.3	5.2	5.1	4.7	4.6	4.3	4.0	3.8	3.5	:
South Africa	4.3	3.8	3.7	4.3	4.3	4.4	5.0	4.8	4.8	5.0	5.1	4.4	3.9	4.1	4.5	4.4	4.4	4.5	4.0	4.3	4.1	3.7	3.6	:
Canada	1.7	2.2	2.3	2.2	2.2	2.5	3.0	2.8	2.2	2.4	1.7	2.0	1.4	1.5	1.9	2.0	2.4	2.0	2.0	1.9	1.9	1.9	2.2	:
US	2.1	2.2	2.4	2.5	2.8	2.9	2.9	2.7	2.3	2.5	2.2	1.9	1.6	1.5	1.9	2.0	1.8	1.6	1.8	1.7	1.7	1.8	2.1	:
Mexico	5.5	5.3	5.0	4.6	4.5	4.6	4.8	4.9	5.0	4.9	4.7	4.8	4.4	3.9	4.0	4.4	4.3	3.9	3.8	3.2	3.0	3.0	3.0	2.8
Argentina	25.0	25.4	25.4	25.5	26.3	29.5	31.2	34.4	40.5	45.9	48.5	47.6	49.3	51.3	54.7	55.8	57.3	55.8	54.4	54.5	53.5	50.5	52.1	:
Brazil	2.9	2.8	2.7	2.8	2.9	4.4	4.5	4.2	4.5	4.6	4.0	3.7	3.8	3.9	4.6	4.9	4.7	3.4	3.2	3.4	2.9	2.5	3.3	:
China	1.5	2.9	2.1	1.8	1.8	1.9	2.1	2.3	2.5	2.5	2.2	1.9	1.7	1.5	2.3	2.5	2.7	2.7	2.8	2.8	3.0	3.8	4.5	4.5
Japan	1.4	1.5	1.1	0.6	0.7	0.7	0.9	1.3	1.2	1.4	0.8	0.3	0.2	0.2	0.5	0.9	0.7	0.7	0.5	0.3	0.2	0.2	0.5	:
South Korea	0.8	1.3	1.2	1.5	1.5	1.5	1.1	1.4	2.1	2.0	2.0	1.3	0.8	0.5	0.4	0.6	0.7	0.7	0.6	0.0	0.0	0.0	0.2	0.7
India	5.1	4.7	4.4	4.0	4.0	3.9	5.6	5.6	5.6	5.2	4.9	5.2	6.6	7.0	7.7	8.3	8.7	8.6	6.0	6.3	7.0	7.6	8.6	:
Indonesia	3.3	3.2	3.4	3.4	3.2	3.1	3.2	3.2	2.9	3.2	3.2	3.1	2.8	2.6	2.5	2.8	3.3	3.3	3.3	3.5	3.4	3.1	3.0	2.7
Saudi Arabia	3.0	2.9	2.8	2.6	2.3	2.1	2.2	2.2	2.1	2.4	2.8	2.2	−0.1	−0.2	−0.2	−0.1	−0.2	−0.2	−0.1	−0.2	0.0	−0.1	−0.1	:
G20	2.7	2.9	2.8	2.7	2.9	3.1	3.4	3.5	3.6	3.8	3.4	3.2	3.1	3.1	3.5	3.8	3.7	3.5	3.3	3.2	3.1	3.2	3.6	:

Source: Eurostat – prc_ipc_g20, extracted on 08.03.2020

Table 2: The EU and other European economies: annual HICP rate of change in %, January 2018 – December 2019

Country/ Group	2018M01	2018M02	2018M03	2018M04	2018M05	2018M06	2018M07	2018M08	2018M09	2018M10	2018M11	2018M12	2019M01	2019M02	2019M03	2019M04	2019M05	2019M06	2019M07	2019M08	2019M09	2019M10	2019M11	2019M12
EU28	1.6	1.4	1.6	1.5	2.0	2.1	2.2	2.2	2.2	2.3	2.0	1.6	1.5	1.6	1.6	1.9	1.6	1.6	1.4	1.4	1.2	1.1	1.3	1.6
EA19	1.3	1.1	1.4	1.2	2.0	2.0	2.2	2.1	2.1	2.3	1.9	1.5	1.4	1.5	1.4	1.7	1.2	1.3	1.0	1.0	0.8	0.7	1.0	1.3
Belgium	1.8	1.5	1.5	1.6	2.3	2.6	2.7	2.6	2.8	3.2	2.9	2.2	1.8	2.0	2.2	2.0	1.7	1.3	1.2	0.9	0.6	0.2	0.4	0.9
Bulgaria	1.3	1.5	1.9	1.7	2.3	3.0	3.6	3.7	3.6	3.6	3.0	2.3	2.3	2.4	2.8	3.1	2.9	2.3	2.6	2.5	1.6	1.6	2.2	3.1
Czechia	2.1	1.6	1.6	1.8	2.0	2.4	2.2	2.4	2.1	2.0	1.6	1.6	2.0	2.4	2.6	2.4	2.6	2.4	2.6	2.6	2.6	2.6	3.0	3.2
Denmark	0.6	0.5	0.4	0.7	1.0	1.1	0.9	0.8	0.5	0.7	0.7	0.7	1.2	1.1	1.2	0.9	0.7	0.5	0.4	0.5	0.4	0.6	0.6	0.8
Germany	1.5	1.2	1.7	1.3	2.5	2.1	2.2	2.1	2.2	2.6	2.2	1.7	1.7	1.7	1.4	2.1	1.3	1.5	1.1	1.0	0.9	0.9	1.2	1.5
Estonia	3.6	3.2	2.9	2.9	3.1	3.9	3.3	3.5	3.5	4.5	3.2	3.3	2.8	1.9	2.2	3.2	3.1	2.6	2.0	2.1	2.2	1.4	1.8	1.8
Ireland	0.3	0.7	0.5	−0.1	0.7	0.7	1.0	0.9	1.2	1.1	0.8	0.8	0.8	0.7	1.1	1.7	1.0	1.1	0.5	0.6	0.6	0.6	0.8	1.1
Greece	0.2	0.4	0.2	0.5	0.8	1.0	0.8	0.9	1.1	1.8	1.1	0.6	0.5	0.8	1.0	1.1	0.6	0.2	0.4	0.1	0.2	−0.3	0.5	1.1
Spain	0.7	1.2	1.3	1.1	2.1	2.3	2.3	2.2	2.3	2.3	1.7	1.2	1.0	1.1	1.3	1.6	0.9	0.6	0.6	0.4	0.2	0.2	0.5	0.8
France	1.5	1.3	1.7	1.8	2.3	2.3	2.6	2.6	2.5	2.5	2.2	1.9	1.4	1.6	1.3	1.5	1.1	1.4	1.3	1.3	1.1	0.9	1.2	1.6
Croatia	1.2	0.9	1.2	1.4	1.8	2.2	2.2	2.1	1.6	1.7	1.3	1.0	0.6	0.8	1.1	0.8	1.0	0.5	0.9	0.6	0.6	0.6	0.8	1.3
Italy	1.2	0.5	0.9	0.6	1.0	1.4	1.9	1.6	1.5	1.7	1.6	1.2	0.9	1.1	1.1	1.1	0.9	0.8	0.3	0.5	0.2	0.2	0.2	0.5
Cyprus	−1.5	−0.4	−0.4	−0.3	1.0	1.7	1.4	1.7	1.7	1.9	1.6	1.0	2.1	0.8	1.1	1.2	0.2	0.3	0.1	0.6	−0.5	−0.5	0.5	0.7
Latvia	2.0	1.8	2.3	2.1	2.4	2.7	2.7	2.8	3.3	3.2	2.9	2.5	2.9	2.8	2.7	3.3	3.5	3.1	3.0	3.1	2.3	2.2	2.0	2.1
Lithuania	3.6	3.2	2.5	2.2	2.9	2.6	2.3	1.8	2.4	2.8	2.4	1.8	1.6	2.0	2.6	2.7	2.5	2.4	2.5	2.5	2.0	1.5	1.7	2.7
Luxembourg	1.3	1.1	1.1	1.3	2.1	2.4	2.5	2.4	2.7	2.8	2.6	1.9	1.6	2.1	2.4	2.2	2.2	1.5	1.6	1.4	1.1	0.8	1.0	1.8
Hungary	2.1	1.9	2.0	2.4	2.9	3.2	3.4	3.4	3.7	3.9	3.2	2.8	2.8	3.2	3.8	3.9	4.0	3.4	3.3	3.2	2.9	3.0	3.4	4.1
Malta	1.2	1.3	1.3	1.4	1.7	2.0	2.1	2.4	2.5	2.1	1.4	1.2	1.0	1.3	1.3	1.7	1.7	1.8	1.8	1.9	1.6	1.4	1.3	1.3
Netherlands	1.5	1.3	1.0	1.0	1.9	1.7	1.9	1.9	1.6	1.9	1.8	1.8	2.0	2.6	2.9	3.0	2.3	2.7	2.6	3.1	2.7	2.8	2.6	2.8
Austria	1.9	1.9	2.0	2.0	2.1	2.3	2.3	2.3	2.1	2.4	2.3	1.7	1.7	1.4	1.7	1.7	1.7	1.6	1.4	1.5	1.2	1.0	1.2	1.8
Poland	1.6	0.7	0.7	0.9	1.2	1.4	1.4	1.4	1.5	1.5	1.1	0.9	0.6	1.3	1.7	2.1	2.2	2.3	2.5	2.6	2.4	2.3	2.4	3.0
Portugal	1.1	0.7	0.8	0.3	1.4	2.0	2.2	1.3	1.8	0.8	0.9	0.6	0.6	0.9	0.8	0.9	0.3	0.7	−0.7	−0.1	−0.3	−0.1	0.2	0.4
Romania	3.4	3.8	4.0	4.3	4.6	4.7	4.3	4.7	4.7	4.2	3.2	3.0	3.2	4.0	4.2	4.4	4.4	3.9	4.1	4.1	3.5	3.2	3.8	4.0
Slovenia	1.7	1.4	1.5	1.9	2.2	2.3	2.1	2.0	2.2	2.3	2.1	1.4	1.2	1.3	1.6	1.8	1.6	1.9	2.0	2.4	1.7	1.5	1.4	2.0
Slovakia	2.6	2.2	2.5	3.0	2.7	2.9	2.6	2.9	2.7	2.5	2.0	1.9	2.2	2.3	2.7	2.4	2.7	2.7	3.0	3.0	3.0	2.9	3.2	3.2
Finland	0.8	0.6	0.9	0.8	1.0	1.2	1.4	1.4	1.4	1.7	1.4	1.3	1.2	1.3	1.1	1.5	1.3	1.1	1.0	1.2	1.0	0.9	0.8	1.1
Sweden	1.6	1.6	2.0	1.8	2.0	2.1	2.2	2.1	2.5	2.4	2.1	2.2	2.0	1.9	1.8	2.1	2.1	1.6	1.5	1.3	1.3	1.6	1.8	1.7
UK	3.0	2.7	2.5	2.4	2.4	2.4	2.5	2.7	2.4	2.4	2.3	2.1	1.8	1.9	1.9	2.1	2.0	2.0	2.1	1.7	1.7	1.5	1.5	1.3
Iceland	−0.7	−1.0	0.3	−0.7	0.0	1.4	1.9	2.1	1.2	0.9	1.5	2.0	1.8	1.0	1.3	3.2	2.9	2.2	1.6	1.7	2.8	1.9	2.1	0.9
Norway	1.6	2.3	2.2	2.6	2.3	2.7	3.5	3.9	3.8	3.6	3.8	3.9	3.6	3.4	3.2	3.1	2.9	2.1	1.8	1.5	1.5	1.7	1.5	1.2
Switzerland	0.8	0.5	0.7	0.4	1.0	0.9	1.2	1.3	1.1	1.1	1.0	0.8	0.7	0.7	0.7	1.1	0.5	0.7	0.4	0.5	0.1	−0.3	−0.3	−0.1

Source: Eurostat – prc_hicp_manr, extracted on 08.03.2020