

# Yes, We Are Probably All Japanese Now

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Monetary Dialogue September 2019





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## **Abstract**

This paper argues that the euro area has in recent years shared the same unfortunate concurrent systemic economic/financial crisis and demographic turnaround to an outright declining working age population that Japan suffered in the early 1990s. This combination will continue to depress euro area inflation dynamics for the foreseeable future, making it imperative that new fiscal policy initiatives, including public climate related investments, complement the ECB's ongoing monetary policy stimulus.

This document was requested by the European Parliament's Committee on Economic and Monetary Affairs.

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Original: EN

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Manuscript completed in September 2019

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For citation purposes, the study should be referenced as: Kirkegaard, J.-F., *Yes, We Are Probably All Japanese Now*, Study for the Committee on Economic and Monetary Affairs, Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament, Luxembourg, 2019.

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## EXECUTIVE SUMMARY

- Inflation dynamics are today subdued throughout the advanced economies. In Japan, however, this situation is not new, but started 25 years ago in the mid-1990s, following the country's dramatic economic boom-and-bust in the late 1980s and early 1990s. From 1995 onwards, Japan in addition reached its long-term demographic turning point, as its working age population began to decline inexorably. The combined effect of these two developments exposed Japan to intense deflationary economic pressures.
- The decade-long zero-interest-rate-policy and asset purchase policies and extraordinary fiscal stimulus pursued by the Bank of Japan and the Japanese government respectively since the mid-1990s have not managed to restore Japanese inflation levels to the targeted levels.
- The euro area has in recent years suffered the same twin effects of a concurrent systemic economic crisis and its demographic turnaround and a declining working age population since 2009. This will subject the euro area to dramatic deflationary pressures for the foreseeable future.
- Ageing and a demographic turnaround negatively affect all three component drivers of long-term economic growth: potential workforce, capital accumulation and productivity. Fewer potential workers reduce economic growth prospects. Lower growth depresses profitable investment opportunities, and ageing workers carrying more of the financial responsibility for their retirement themselves will save more. The retirement of increasingly well-educated generations leads to slower future educational attainment advances, lack of financial pressure on unproductive firms from low cost of capital, and an ageing related decline in entrepreneurship and business start-up rates are all effects likely in the long run to adversely affect productivity growth.
- Japan's example of ineffective macroeconomic policies in the face of downward demographic pressure on inflation dynamics makes it clear that the euro area is unlikely to escape persistently subdued prices, unless a more integrated fiscal and monetary policy response is implemented. This could see euro area (and EU) governments commit fiscal resources, supported by the ECB, to an investment-led strategy to reach Europe's ambitious climate change goals.

## 1. INTRODUCTION

Inflation levels in the advanced economies have during the last decade fallen to historically low levels, despite the best efforts of central bankers and strong labor markets. The broadness across the industrialized world of the phenomenon after the Great Recession in 2008-09, despite widely diverging national fiscal and monetary policies, suggests global and/or structural factors play an important role in this protracted phenomenon. The fact that low inflation persists a decade after the global financial crisis and seven years after the euro area crisis peaked in 2012 moreover implies that explanations solely emphasizing how economic recovery periods after large financial crises take longer than following a standard recession today look less persuasive in isolation<sup>1</sup>.

At the same time, however, as prolonged subdued inflationary pressure has today become widespread in the industrialized world including Europe and the United States, it is important to recall that this phenomenon is not a novelty in Japan. Japanese headline inflation levels first fell lastingly below two percent in 1992 and has not – despite persistent fiscal and extraordinary monetary stimulus by Japanese governments and the Bank of Japan since then – recovered for over a quarter of a century. Only in 2014, following the short-lived global commodities price shock, did Japanese headline inflation surpass two percent, while the country has experienced 11 years with outright deflation since 1992 and had an average annual inflation since then of just 0.3 percent<sup>2</sup>. A critical question therefore today is whether the currently subdued inflation dynamics in both Europe and the United States is first and foremost a spread of long-term “Japanese economic conditions” to the rest of the industrialized economies? And if so, what are the underlying economic factors causing such a “Japanification” of the European and U.S. economies in recent years?

This paper will argue that an unfortunate historical coincident of a systemic economic crisis and asset price collapse in the late 1980s and early 1990s, followed closely by a structural mid-1990s demographic turnaround to a declining labor force in Japan created the macroeconomic headwind conditions for the country’s relentless deflationary pressures. The erratic Japanese fiscal policy during the 1990s, a drawn-out bank clean-up and initially restrained monetary policy by the Bank of Japan further aggravated Japan’s frequently poor macroeconomic performance in recent decades<sup>3</sup>.

This paper will next argue that the euro area in recent years has been suffering from broadly the same luckless circumstances as Japan did 30 years ago. The euro area experienced its own asset price boom in the early years after the introduction of the common currency and the global financial boom in the early 2000s. But the boom turned to bust following first the onslaught of the global financial crisis in 2008 and then the euro area sovereign debt crisis in 2010. Unfortunately for the euro area, like in Japan in 1995, its working age population began to decline around the same time in 2009 as its economic crises hit. This “Japanese combination” of the euro area existential financial and sovereign debt crises and the beginning of its inexorable demographic decline in 2009 has conspired to make it extraordinarily difficult for the ECB to meet its inflationary mandate. As in Japan in the 1990s, occasionally erratic fiscal policy and a prolonged banking sector clean-up process didn’t help in the euro area either. The accelerating downward demographic trend that the euro area will witness in the coming decades will ensure that the ECB is likely to continue to face perhaps insurmountable obstacles to meeting its inflation target.

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<sup>1</sup> Probably the most cited example of the prolonged-slumps-occur-after-financial-crises thesis is Reinhart and Rogoff (2009).

<sup>2</sup> Japanese average annual consumer price change data are from the IMF WEO database April 2019.

<sup>3</sup> Japan’s economic performance after 1991 is often unfairly maligned. On crucially important parameters like real GDP/capita growth or unemployment levels, Japan has since the early 1990s performed on par with or exceeded trends in both the euro area and the United States.



In emphasizing the long-term and broadly deflationary impact of population ageing and declining working age populations, it is furthermore important to recognize the multifaceted nature hereof on the traditional drivers of economic growth and potential inflationary pressures in advanced economies. Countries' long-term economic, or potential<sup>4</sup>, growth rates (i.e. GDP) simplified consist of the contributions of three main components; the growth rate of the potential workforce<sup>5</sup>, capital<sup>6</sup>, and total factor productivity growth<sup>7</sup>. Self-evidently, demographics and population ageing affect the size of a country's workforce, but demographics and ageing similarly have an impact on the level of capital and even productivity levels. This paper will argue that the latter two effects are also powerfully negative and help explain today's depressed inflation dynamics.

The economic forces pushing down advanced economies' inflation pressures are powerful and being dominated by long-term demographic factors likely to persist for decades into the future. Accordingly, this paper will argue that the traditional framework and tools available to central banks to combat low inflation, or outright deflation are now inadequate. Simply relying on the ECB finding ways to further lower short and long-term real interest rates and ensuring banks have ample liquidity will not suffice. The euro area will instead have to innovate and create a new synchronized, if not outright coordinated, fiscal and monetary policy strategy involving both governments and the ECB. The overarching need for Europe to combat climate change will offer the best platform on which to do so.

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<sup>4</sup> Potential growth rates are usually defined as the level of GDP growth consistent with stable inflation at the desired level (in the euro area, close to but below 2 percent). In the standard New Keynesian macroeconomic framework, actual GDP growth rates may be above or below potential growth rates, giving rise to positive or negative output gaps. These deviations occur as wages and prices adjust only slowly to economic shocks. The alignment of actual and potential growth rates is hence only gradual and requires active policy support from central bankers (monetary policy) and finance ministers (fiscal policy) to minimize the negative economic effects of shocks.

<sup>5</sup> In practice, usually the economics concept of "potential employment" is utilized in model estimations. Potential employment is a more detailed description of the actual additional number of people in an economy that may become gainfully employed than just the entire working age population. It typically, in addition to the working age population growth rate, incorporates the effects of a country's structural level of unemployment (i.e. the non-accelerating inflation rate of unemployment, or NAIRU), and trend labor force participation. The latter refers to the age and gender profile of a country's workforce, which affects the aggregate labor force participation through gender effects as women typically has lower participation rates, and the fact that participation tends to decline steeply beyond certain age thresholds. An increased share of older workers will lower the average labor force participation and potential employment. A wide variety of government policies – availability of unemployment benefits, access to early retirement, access to education, retirement ages – hence affect a country's potential employment level.

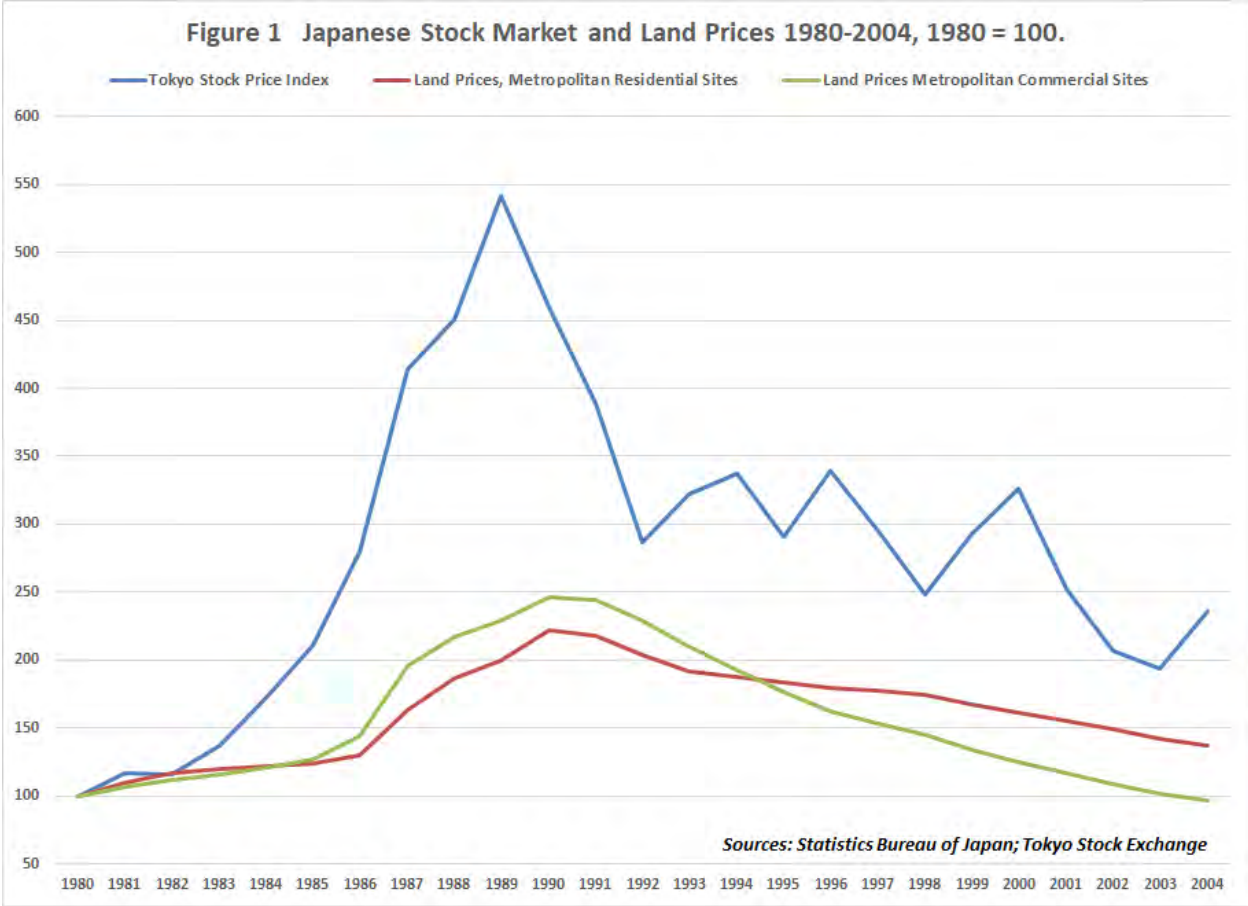
<sup>6</sup> Estimates of countries' "capital stock" often exclude housing to focus on "productive capital".

<sup>7</sup> Total factor productivity includes human capital and is measured as the residual from the production model function.

## 2. ET TU, EURO AREA? A SYSTEMIC CRISIS PLUS A DEMOGRAPHIC TURNING POINT EQUALS TROUBLE

The Japanese economy in the late 1980s entered a dramatic economic bubble causing rapid asset price appreciation and economic overheating. Stock market and real estate prices peaked in 1989-1990, before entering a prolonged downward slide during Japan’s (first) “lost decade” in the 1990s (Figure 1)<sup>8</sup>.

Figure 1: Japanese Stock Market and Land Prices



As a consequence of the bursting of the Japanese economic bubble in 1989-1991, Japan’s consumer price index fell steadily and dipping for the first time into outright deflation in late 1995. Inflation picked up briefly in 1997-98, before falling back into deflation until shortly before the global financial crisis. Following 2008-09, Japan’s economy suffered deep deflation, before a brief commodity-price fuelled recovery of inflation in 2014-15 saw the price level exceed 2 percent for the first and only time since 1992. This is illustrated in Figure 2.

<sup>8</sup> The Japanese boom-bust has been extensively analyzed in the economic literature. Some of the most important papers include Ito and Iwasako (1995); Posen (1998, 2002); Hoshi and Kashyap (1999); Posen and Mikitani (2000); Nakaso (2001); and Ito, Patrick and Weinstein (2005).

Figure 2: Japanese Gen. Gov. Net Lending, Gross Debt, Interest Rates and Inflation

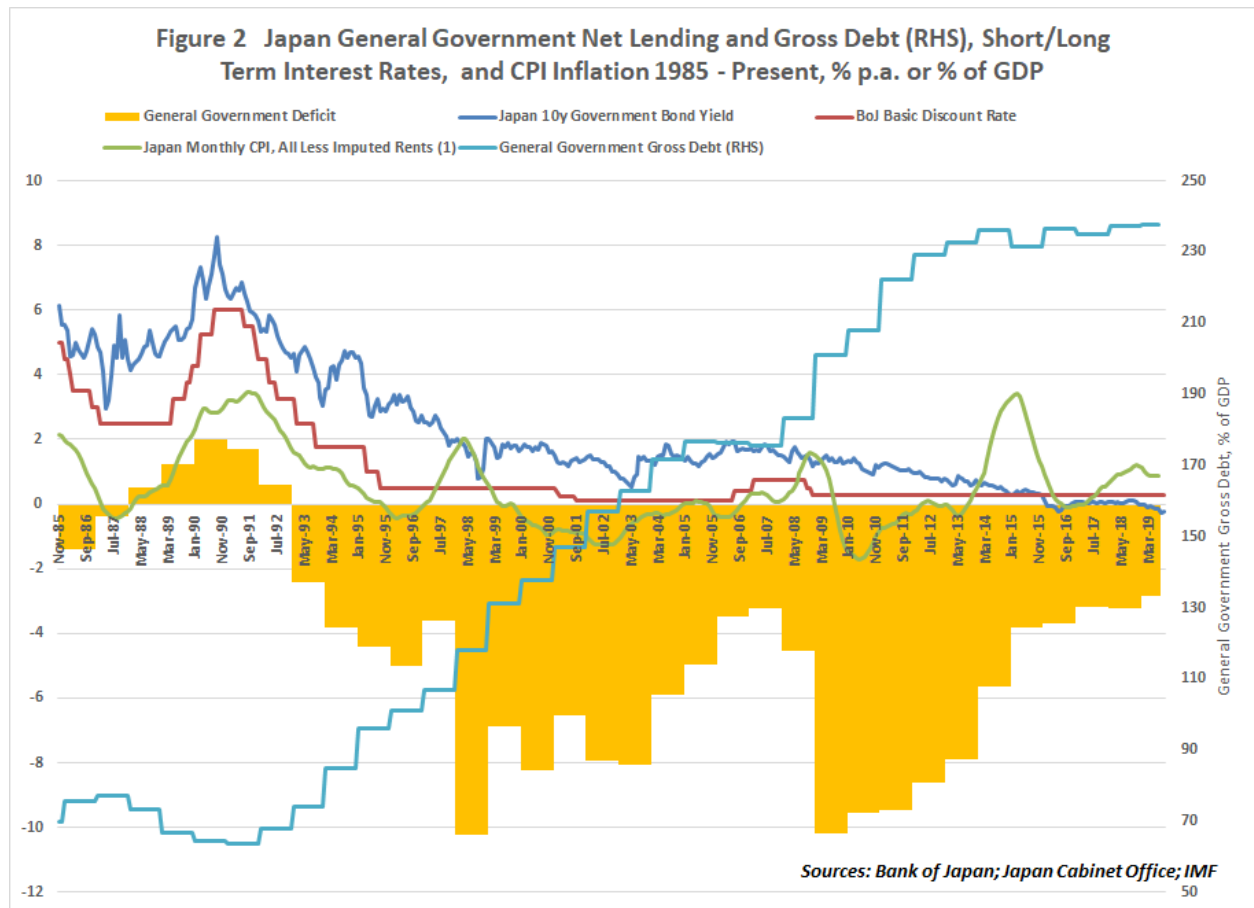


Figure 2 further highlights how Japanese government and central bank from the early 1990s onwards launched prolonged fiscal and monetary policy stimuli in the attempt to pull Japan out of deflation<sup>9</sup> and restore sustained nominal GDP growth. Figure 2 shows how Japanese short-term interest rates reached 0.5 percent (i.e. de facto a zero-interest-rate-policy) almost 25 years ago and Japanese long-term interest rates dropped below 2 percent for good in 1998. Even very aggressive traditional monetary policy stimulus over decades and the initial quantitative easing measures adopted by the Bank of Japan as early as 2001<sup>10</sup> have in other words in Japan failed to restore inflation to above 2 percent.

This failure of monetary policy is particularly striking in Japan, as it coincided with what was also after 1993 an unprecedented fiscal stimulus in Japan, as successive governments began to run persistently very large deficits.

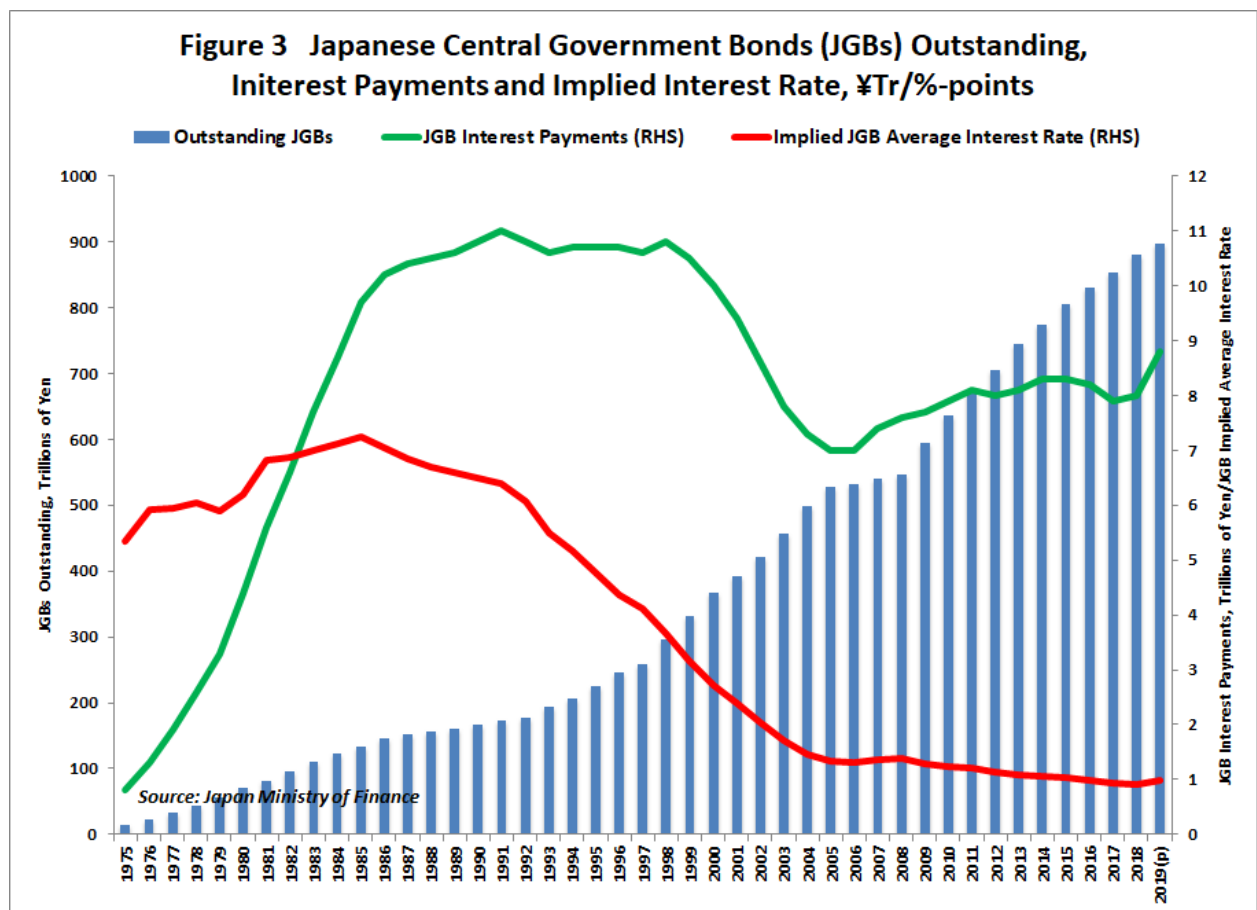
Few remember it today, but at the time the EU Maastricht Treaty was being negotiated Japan could, with just 63 percent of GDP in general government debt in 1991, almost have qualified under the Treaty's debt criteria. Two decades of on-off deflation and continued deficits by 2013 instead saw Japanese general government gross debt stabilize at just over 230 percent of GDP. Crucially,

<sup>9</sup> Figure 2 depicts headline CPI inflation, as this is the metric used also in the ECB's inflation target. Other inflation measures, such as core CPI measured excluding fresh food/energy or the GDP deflator shows Japan with more persistent deflation after 1994.

<sup>10</sup> In March 2001, the Bank of Japan began their first quantitative easing phase including flooding Japanese banks with excess liquidity to spur lending (akin to the ECB's later LTRO/TLTRO programs) and initiated purchases of long-term government bonds. See Ito (2004) for details. <https://www.nber.org/papers/w10818.pdf>.

however, Japan’s record low interest rates as a result of the aggressive market interventions of the Bank of Japan has meant that the Japanese government’s interest rate burden has continued to decline in recent years to now an implied interest rate of less than one percent on outstanding central government bonds (Figure 3)<sup>11</sup>. Japan in other words (like Greece in the euro area in recent years) highlights how a focus on outstanding gross government debt, when considering debt sustainability, is misguided. What matters is the interest rate on the debt and the associated debt service burden faced by the government.

Figure 3 Japanese Central Gov. Bonds Outstanding, Interest Payments and Implied Interest Rates



Political instability (Japan has had 13 prime ministers since 1993<sup>12</sup>), erratic implementation of fiscal stimulus<sup>13</sup>, the extraordinarily long time it took for Japan to finally restore its banking system to financial health after the bust<sup>14</sup>, and the initially hesitant adoption of non-traditional monetary

<sup>11</sup> Figure 3 includes data for central government bonds (JGBs) only and does not correspond to the debt data presented in Figure 2, which includes debt from the entire Japanese general government sector. The focus on JGBs in Figure 3 is due to that this is by far the largest single Japanese government debt class and the asset class targeted for Bank of Japan market interventions.

<sup>12</sup> 14 if you count the two times current incumbent Shinzo Abe has been prime minister.

<sup>13</sup> The tightening of the Japanese fiscal stance in 1996-97 (visible in the form of the decline in the deficit in Figure 2) is perhaps the most notorious example of pre-mature Japanese fiscal tightening after the bubble burst.

<sup>14</sup> The notorious inefficiencies of the early Japanese “convoy system” crisis response, which saw larger and (initially) healthier Japanese banks leaned on to takeover struggling smaller institutions until the entire banking system became weighed down, is laid out in Spiegel (2000) and Nakaso (2001).

stimulus by the Bank of Japan<sup>15</sup> were all undoubtedly aggravating factors in Japan's prolonged economic slump and failure to sustainably restore inflation back to around the 2 percent<sup>16</sup> after the bubble burst. However, the extraordinary amount of fiscal and monetary stimulus expended without effect in the decades after 1991 suggests that powerful previously unknown deflationary factors affected the Japanese around the same time.

The undoubtedly most powerful novel economic factor to – in a case of unfortunate timing – hit Japan around the time of the bubble burst was the unprecedented demographic turning point experienced by Japan in 1995. At this time, as the first advanced economy in the world, the Japanese working age population began to decline. The growth trend of Japan's CPI and working age population after the late 1980s is illustrated in Figure 4.

Figure 4: Japan CPI and Working Age Population Growth

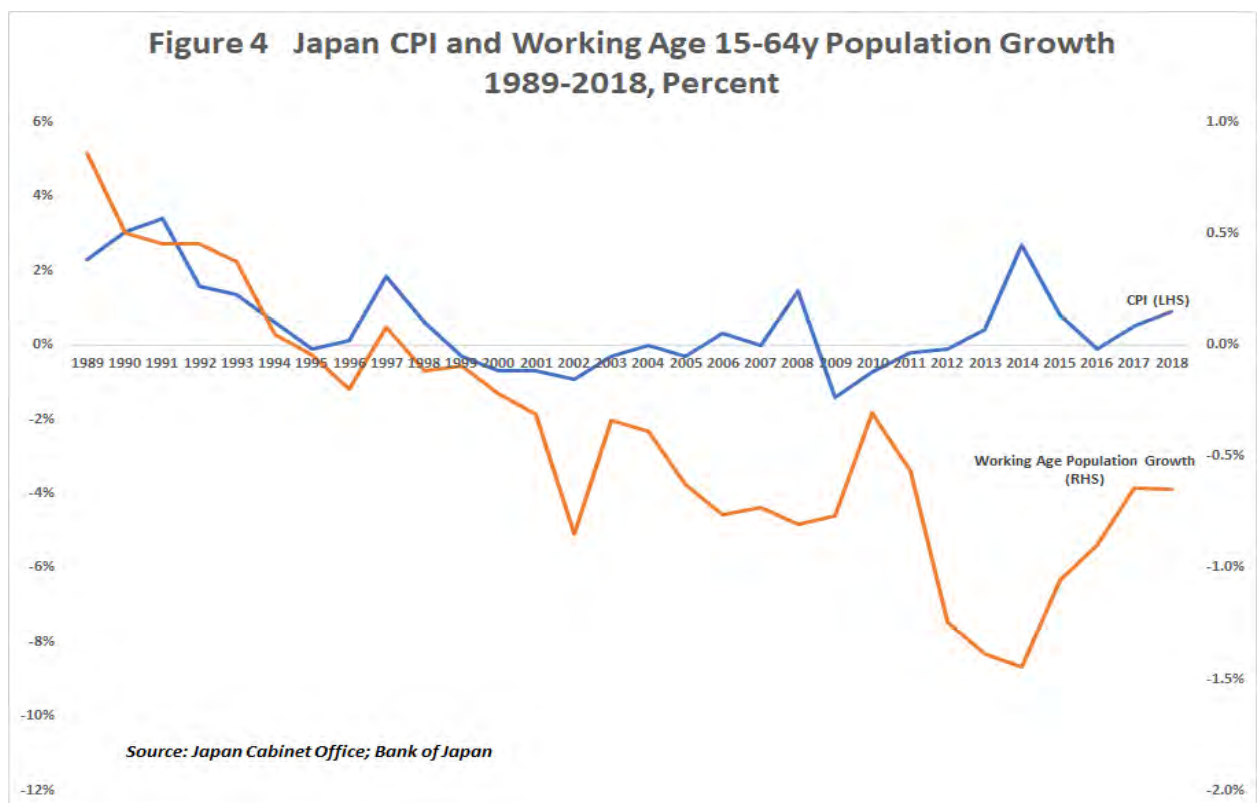


Figure 4 highlights the remarkable coincident of persistent deflationary pressures beginning in Japan in 1995 at essentially the same time as Japan's working age population began to lastingly decline. This suggests at a minimum that demographic decline and a rapidly ageing population makes the task of escaping deflation after a large economic and financial crisis much harder for central banks (see section III for an in-depth discussion of the relevant economic and financial channels)<sup>17</sup>.

<sup>15</sup> See Ito (2004).

<sup>16</sup> The Bank of Japan only adopted an outright inflation target of 2 percent in 2013 ([https://www.boj.or.jp/en/announcements/release\\_2013/k130122b.pdf](https://www.boj.or.jp/en/announcements/release_2013/k130122b.pdf)), but had as early as 1999 committed to maintaining its "zero interest rate policy" until deflationary concerns are dispelled". Ito (2004).

<sup>17</sup> See Kuroda (2018 and 2019).

The difficulties experienced by Japan in escaping deflation following their deep economic and financial crisis, despite heroic fiscal and traditional and non-standard monetary policy stimulus for more than 20 years, should be sobering for euro area policy makers. The fact is that the euro area after 2010 has shared an unsettling number of Japan’s key characteristics from the late 1980s and early 1990s. The euro area of course had its own asset price boom(s) during the first decade after the introduction of the common currency in 1999. It then suffered the twin blows of the global financial crisis and the euro area sovereign debt crisis, followed by a prolonged (at least compared to the United States) process to restore adequate capital levels in its banking system after 2010 and a relatively tight post-crisis fiscal policy stance, too. In response hereto, ECB has (as the Bank of Japan after 1995) gradually after 2012 adopted more aggressive traditional and non-standard monetary stimulus.

Perhaps most ominously, however, the euro area’s key demographic turnaround and the commencement of its working age population decline started in 2009. As in Japan, worryingly close to the time of the common currency’s deepest economic crisis. This is illustrated in Figure 5.

Figure 5: Potential Labour Force: US, EA, Japan

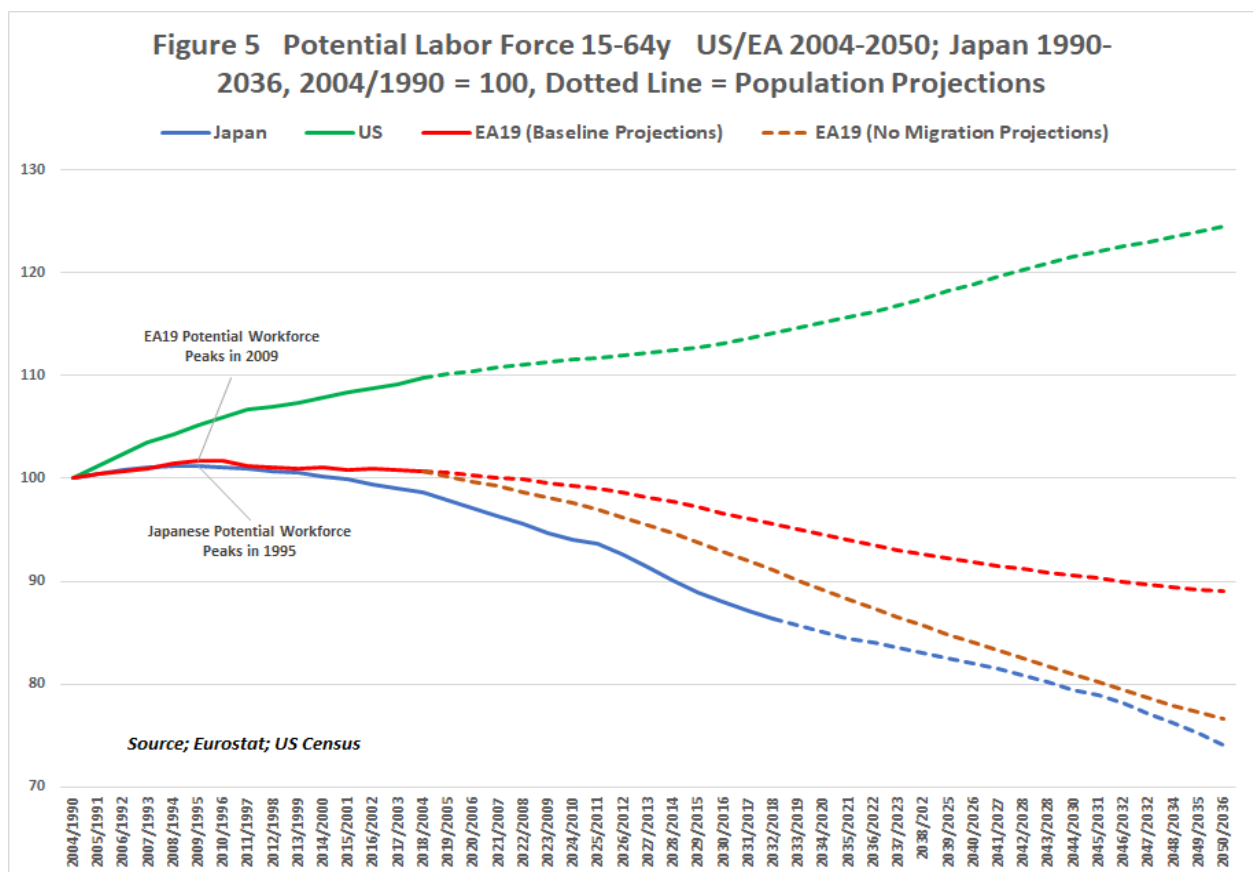


Figure 5 shows the working age population trends from 5 years before its peak in Japan in 1995 and euro area in 2004 and the projected next four decades. The United States is also included to highlight that it, while also experiencing an ageing population, is not and will not on current projected be affected by the same declining workforce found in Japan and the euro area.

Figure 5 illustrates how the euro area working age population trend since 2009 has fallen less rapidly than in Japan after 1995, but that the decline will now (after 2018) accelerate and approach the speed

of the Japanese decline. Figure 5 also highlights the impact on the euro area potential workforce growth of adopting a “Japanese style zero (or at least very, very low level) immigration policy”. Were the euro area to adopt such policies in the future, the decline in its working age would be more rapid than experienced in Japan after 1995, and the euro area would almost certainly face sustained deflationary pressures of at least the same magnitude as Japan after 1995.

The “around the same time as its big crisis” timing of the euro area demographic turnaround and future downward working age population trend highlights the acute risks for the euro area of – if macroeconomic and other economic reform policies fail to adapt accordingly - experiencing Japan-style subdued inflation dynamics for the foreseeable future.

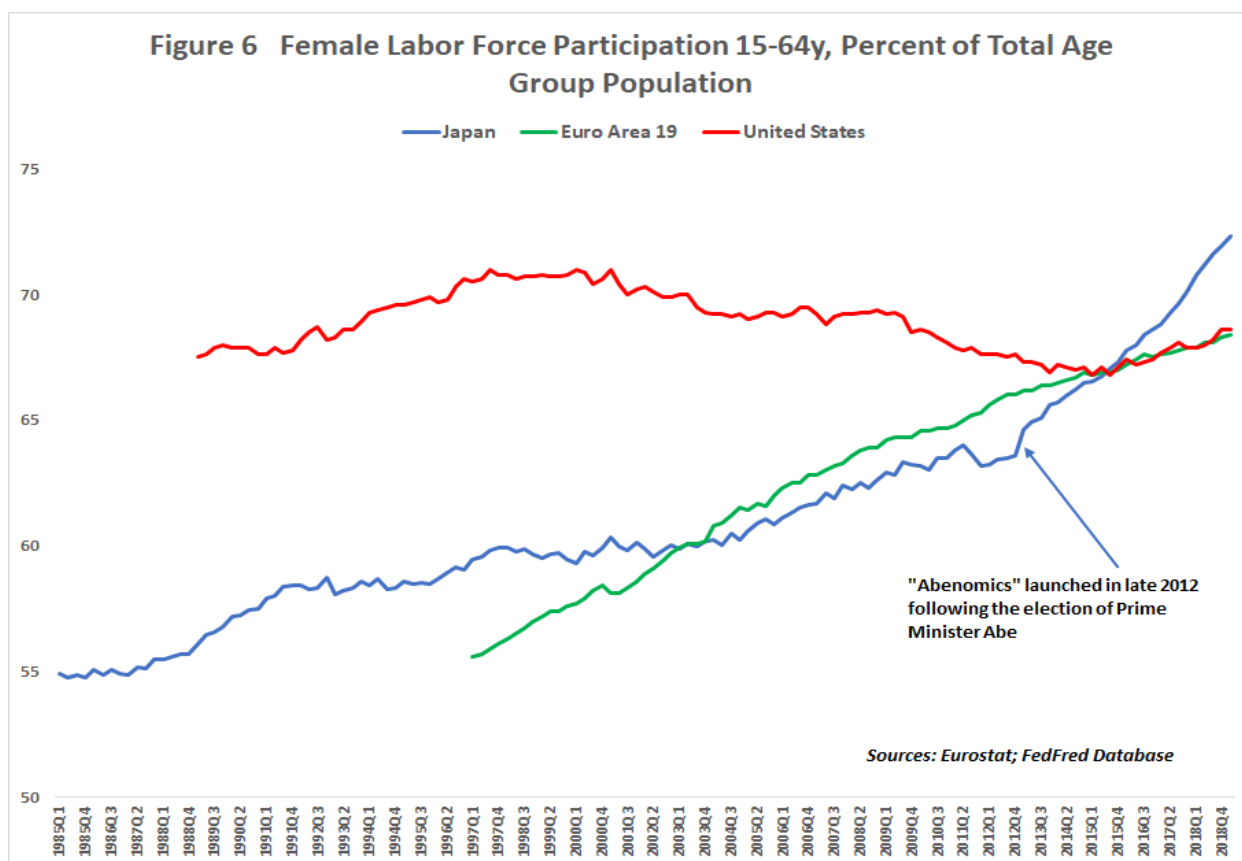
### 3. THE MULTIFACETED IMPACT OF A DEMOGRAPHIC TURNAROUND ON GROWTH AND INFLATION PROSPECTS

Economies like Japan in the mid-1990s and the euro area after 2010 experiencing the kind dramatic demographic turnaround that a shift from a rising to an outright declining in absolute numbers workforce represents are likely to see the detrimental effects on all three traditional components of long-term economic growth – the workforce, capital and productivity.

#### 3.1. Impact on the Workforce

Ageing and outright declining workforces will directly exert a powerfully negative push downward on future potential employment growth in an economy, which in turn will lower potential growth. Reform policies aimed at raising labor force participation among groups traditionally less attached to the labor market can mitigate this negative effect. Japan for instance, as an explicit part of Prime Minister Abe’s anti-deflationary “Abenomics” reform package implemented after 2011 aimed – with remarkable success as can be seen in Figure 6 – to raise the traditionally low labor force participation of Japanese women. Figure 6 also shows the still significant scope for such labor force boosting policies to temporarily alleviate deflationary pressures in the euro area.

Figure 6: Female Labour Force Participation: US, EA, Japan



An outright declining labor force, if combined with a still rising, but older, total population moreover is likely to also lower per-capita-growth rates, as reduced output from a shrinking workforce is to be shared with a higher proportion of retirees.



### 3.2. Impact on Capital Accumulation

A demographic turnaround and outright workforce shrinkage affect capital accumulation through several channels via downward pressure on the so-called natural rate of interest. This is defined as the real interest rates consistent with output matching its potential level and stable inflation<sup>18</sup>. As posited in the “secular stagnation” hypothesis originally formulated by Alvin Hansen in 1939<sup>19</sup> and revisited by Summers (2013) workforce shrinkage causes potential growth to decline (see previous section) and drives up the capital/labor ratio (by lowering the denominator), resulting in a declining marginal return on investment made in the domestic economy<sup>20</sup>. This reduces private investors’ incentive to invest (demand for capital goes down), and the price of capital (the rate of interest) declines. Lower levels of investments directly and negatively affect current economic growth and inflation dynamics.

Another relevant aspect of ageing comes in the form of increases in longevity at high ages that many advanced economies have experienced in recent decades through better medical treatments and preventive care<sup>21</sup>. As more retirees in many advanced economies, including Japan and the euro area, are now increasingly financially responsible for at least part of their income in retirement, this risk will generally cause workers to increase their savings in anticipation of a longer period in retirement. A higher propensity to save for retirement increases the supply of capital and again puts downward pressure on interest rates<sup>22</sup>. If interest rates reach the very low (or negative) levels witnessed in Japan and the euro area recently, there is moreover a risk that so-called “target saving behavior” begins, as savers stop assuming capital gains on their savings and instead increase their level of savings (and reduce consumption) until their target has been reached, irrespective of the level of interest rates.

Ageing, however, also causes an increase in the old-age dependency ratio, which should on the other hand put upward pressure on the natural interest rate, as older people draw down their savings to finance retirement. This reduces the level of savings available, putting upward pressure on interest rates. To date, however, essentially all econometric and model analyses suggest that the downward pressures from the demographic turnaround and ageing are the strongest force<sup>23</sup>.

### 3.3. Impact on Productivity

Productivity is measured as a residual in economic models, highlighting how the economics profession know relatively little about the drivers of this crucial but complex parameter<sup>24</sup>. However, most studies of long-term economic growth suggest that factors such as increasing educational attainment, competitive intensity to ensure rapid knowledge diffusion, high levels of R&D and capital investments, and the constant entry into the economy of new innovative business startups, are some of the key drivers of long-term total factor productivity growth in advanced economies<sup>25</sup>.

Ageing and a demographic turnaround have generally negative implications on a number of these channels. It is not the case, however, that an ageing workforce is generally associated with a decline in productivity simply related to the presence of more older workers in the labor force. This will be

<sup>18</sup> Lauback and Williams (2003).

<sup>19</sup> Hansen (1939).

<sup>20</sup> Expressed differently, this equals an incentive to invest abroad via FDI by private investors.

<sup>21</sup> This recent decline in old-age mortality stands in contrast to the increase in life expectancies that occurred in the early 20<sup>th</sup> century, as infant and early childhood mortality was dramatically reduced through vaccinations and improved maternal care.

<sup>22</sup> Carvalho *et al.* (2016).

<sup>23</sup> See Ferrero *et al.* (2017) and Brand *et al.* (2018) and the literature cited in here.

<sup>24</sup> Estimation as a residual means that productivity, or improvements in technology, is the difference between measured total output of the economy and what can be accounted for by labor and capital inputs. Given the law of diminishing returns that affect both labor and capital inputs, this also means that productivity is by far the most important driver of economic growth in the long run, as neither capital nor labor input can be increased in perpetuity.

<sup>25</sup> See OECD (2015) and the literature cited herein.

true in some physically demanding occupations, but such occupations are generally small and in decline as a share of advanced economies' knowledge-driven economies. There is little evidence to suggest a general individual-level link between age and productivity<sup>26</sup>.

At the same time the ongoing retirement in many advanced economies of relatively well-educated baby-boomers removes a large number of highly skilled workers from the workforce. Unlike during the passage into retirement of earlier less educated generations during the 20<sup>th</sup> century, highly educated baby-boomers are often "only" replaced by younger workers with the same tertiary level of education. This implies a relative educational stagnation associated with current generational turnover and accordingly suggests a slower future rate of increase in educational attainment. This in turn will put downward pressure on future productivity growth.

The decline in the natural rate of interest associated with ageing and a demographic turnaround in the previous section would, as low interest rates allow more and more unproductive "zombie firms" (and easy central bank liquidity and ongoing government support "zombie banks") to remain in business, suggest a reduction in longer-term knowledge diffusion. The most productive firms would be unable to grow as fast, as low-productivity competitors could still manage to financially survive due to low interest rates. This phenomenon highlights the tension between on the one hand the short-term need to rescue struggling firms through lower interest rates in a recession to sustain and restore current economic growth. And on the other hand, the long-term stifling effects on the most productive firms and long-term productivity growth exercised by lastingly low interest rates, keeping the less productive competition in business.

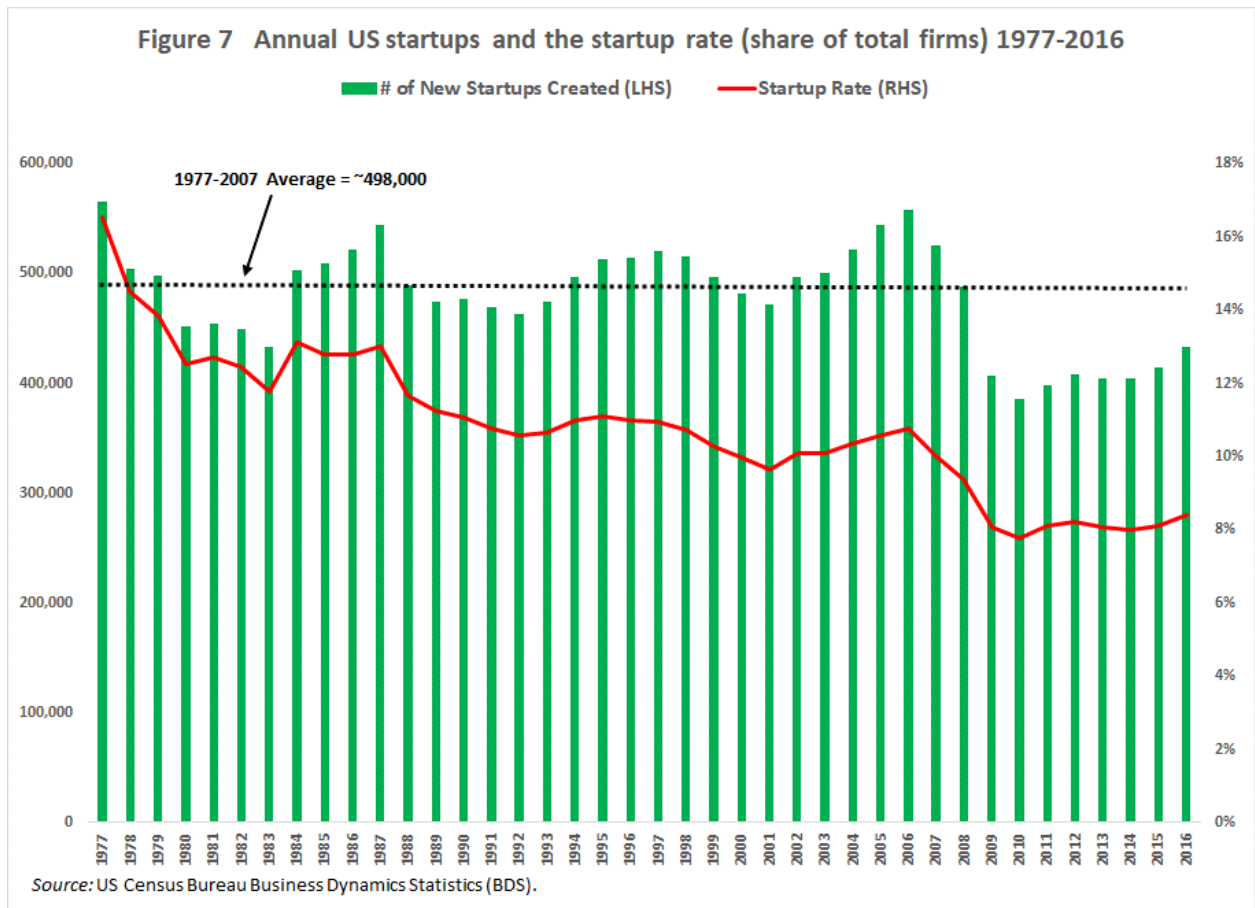
An important generator of productivity growth is entrepreneurship and the formation of new innovative firms, and the link between ageing populations and generally declining long-term business dynamism is a major concern. Karahan et al. (2019), using U.S. data<sup>27</sup>, shows how two-thirds of the decline in the share of US business startups in recent decades can be attributed to demographic factors and the (in the US) decline in labor force growth. Figure 7 shows the general drop in US entrepreneurial intensity (defined as the share of new upstart firms in the total population of firms), as it has declined by nearly half since the late 1970s.

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<sup>26</sup> Most value adding production in advanced economies is also today the outcome of complex processes involving teams of workers at many physical locations. As such teams will usually be comprised of workers of all ages, isolating and estimating an individual-level link between age and productivity is extremely difficult. See van Ours (2010) and Borsch-Supan and Weiss (2016).

<sup>27</sup> US data on business dynamics and entrepreneurship goes back to the 1960s. Eurostat's business demography data for almost all member states begin only in 2008 and it is therefore not possible to discern a longer-term trend across multiple business cycles relevant for the analysis of the impact of demographic factors. See Eurostat for details at [https://ec.europa.eu/eurostat/cache/metadata/en/bd\\_esms.htm](https://ec.europa.eu/eurostat/cache/metadata/en/bd_esms.htm).

Figure 7: US Startups



Labor forces are now in outright decline in both the euro area and Japan, but only grew less rapidly in the United States than in 1960s and early 1970s during the time period depicted in Figure 7. Consequently, it seems probable that the current and future negative effects of demographics on entrepreneurship and startup activity in the euro area and Japan are even larger than estimated for the United States.

In sum, demographic turnarounds of the magnitude suffered by Japan in the mid-1990s and the euro area after 2010 are likely to significantly negatively affect all three components of long-term potential growth – potential employment growth, capital accumulation and total factor productivity. This in turn will continue to depress inflationary dynamics in both economies and render the traditional role of monetary policy less relevant in the future.

## 4. HOW SHOULD THE ECB AND EURO AREA POLICYMAKERS REACT?

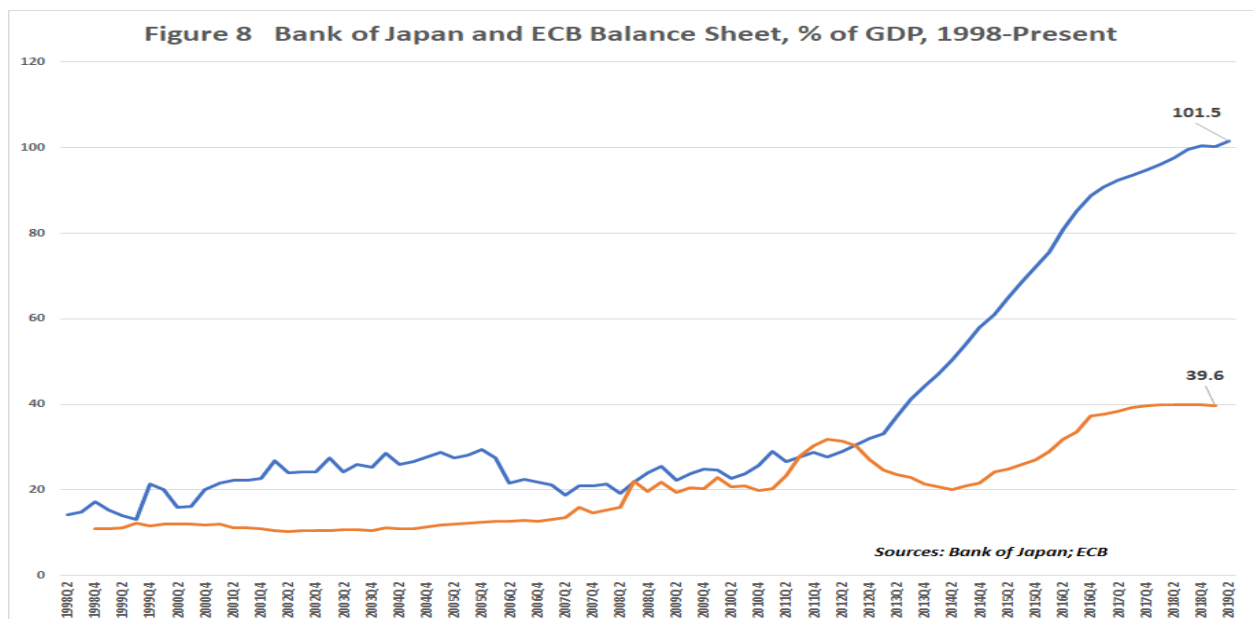
This paper argues that the euro area is and will continue to suffer from many of the same unfortunate circumstances that affected Japan from the early 1990s onwards. The same combination of systemic economic and financial crises occurring roughly simultaneously with an unprecedented demographic turnaround and the start of declining working age populations will continue to depress euro area potential growth rates and inflationary dynamics.

In light of over two decades of futile Bank of Japan interventions relying on both aggressive traditional measures (zero interest rates since mid-1990s) and non-standard asset purchases as far back as 2001 to try to restore Japanese inflation levels, it is probable that sustainably reaching its inflation target will not be possible for the ECB acting on its own.

Meanwhile, trying to change its current inflation target of “close to but below 2 percent over the medium term” towards a looser target of say “2 percent on average” is unlikely to be successful. After all, why should market participants believe the ECB when it says it wants to loosen its inflation target, given that it has patently failed to meet its existing target for now many years? It is consequently not likely that current inflation expectations for the future in the euro area will increase following a loosening of the ECB inflation target.

Next, long-term interest rates across the euro area are today at already historically low levels, suggesting that even new aggressive ECB purchases of sovereign bonds and other safe assets (far exceeding the newly announced €20billion/month<sup>28</sup>) will not inject much additional stimulus into the euro area economy. This is implied by the fact that even the truly extraordinary scale of asset purchases by the Bank of Japan after 2012 (Figure 8) has not worked.

Figure 8: Bank of Japan and ECB Balance Sheet



<sup>28</sup> ECB Introductory Statement, September 12<sup>th</sup> 2019 at <https://www.ecb.europa.eu/press/pressconf/2019/html/ecb.is190912~658eb51d68.en.html>.

Should the ECB instead of mostly sovereign bonds begin purchasing other private assets? It could for instance buy an index of euro area bank debt, one of the few private euro-denominated asset classes big enough for the ECB to potentially buy trillions of euros. This could help banking sector profitability and the euro area monetary transmission mechanism<sup>29</sup>, as euro area banks would be able to issue their own debt cheaper. Such purchases, however, would also directly expose the ECB to credit risks from the euro area banking sector and restore the sovereign-bank doom-loop, only this time to the ECB, not member state governments. At a minimum, large scale ECB purchases of euro area bank debts would require far firmer guidelines for how banks are run to control costs (end to bonuses, branch closures etc.) and limit ECB credit risk to acceptable levels. Such attempts, however, would de facto turn large parts of the euro area banking system into a “ward of the ECB”, a development unlikely to spur credit and ultimately restore economic growth and inflation. ECB euro equity purchases would result in even larger credit risks for the central bank and present many of the same problems of undue private business dependence on the central bank as with purchases of bank loans. There is in all probability therefore, whatever the asset, no realistic purchase program to expand the ECB balance sheet that is adequate to generate the desired increase in euro area inflation dynamics.

The case for further interest rate cuts in the euro area is similarly questionable in light of experiences from Switzerland, Denmark and Sweden, where policy rates even more negative than the euro area’s current -0.5 percent in recent years have not had the desired effect on bank lending, economic growth or inflation dynamics. Recent research findings in Brunnermeier and Koby (2019) even indicate that banks are subject to a “reversal interest rate”, below which further rate cuts causes bank lending to contract, and the monetary policy stance switches to becoming contractionary<sup>30</sup>. This research further indicates that prolonged period of low rates and central bank asset purchases (removing typically longer-dated maturity assets from bank balance sheets for a one-off capital gain) will over time cause to reversal rate to increase, as net interest income remains subdued.

In sum, given the euro area’s demographic outlook, it is unlikely that another looser inflation target, or further reductions in either short or long interest rates will successfully restore euro area economic growth and inflation back towards the current target. The euro area is most probably currently affected by secular stagnation rendering the ECB powerless on its own to restore inflationary dynamics. If euro area governments do not act to assist the ECB in endeavor, it seems probable that the euro area will enter into a prolonged “Japanese style” economic stagnation, and the medium-term risk of suffering outright deflation, as in Japan, is significant.

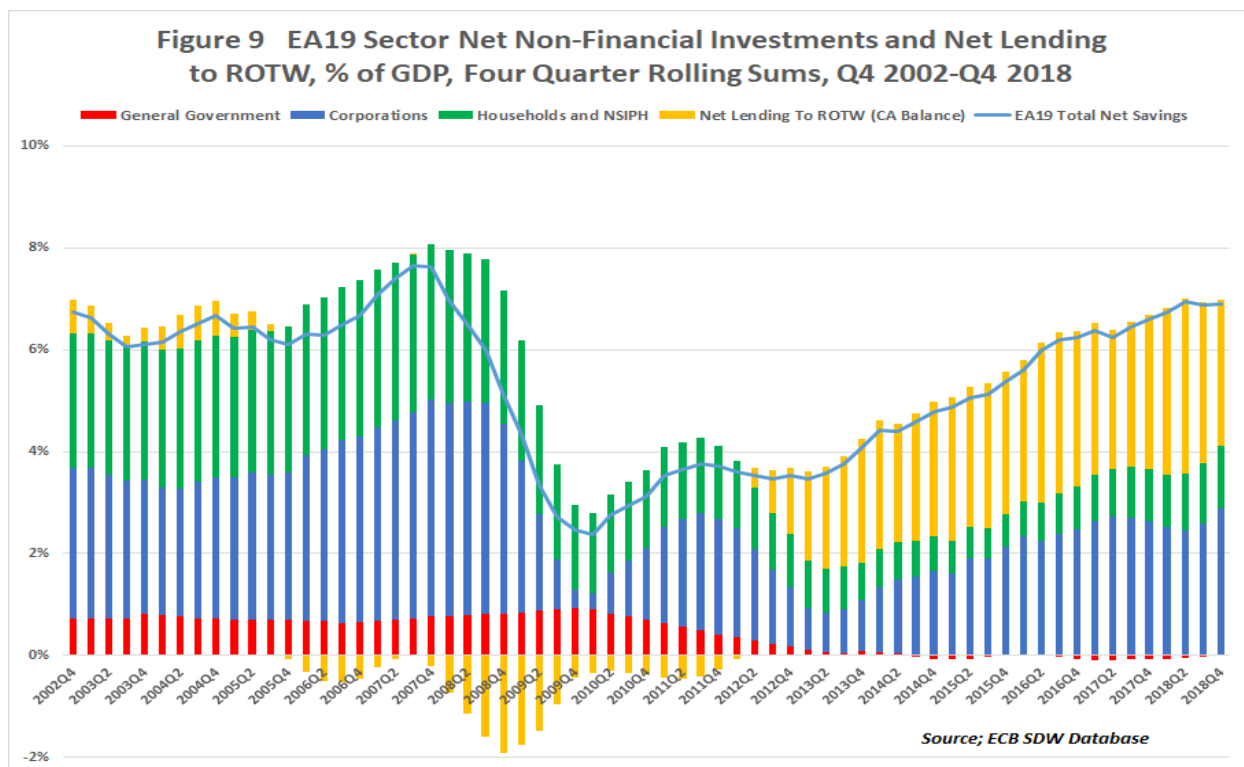
The onus is therefore increasingly on euro area governments to assist the ECB in restoring economic growth and inflationary dynamics. This governments can do in several straightforward ways. It is clear that with the euro area general government budget deficit at less than 1 percent of GDP in 2019<sup>31</sup> that fiscal space exists in the aggregate to stimulate the economy. It is also clear that euro area governments have since at least the last downturn in 2012 failed to invest adequately in the capital stock. This is illustrated in Figure 9.

<sup>29</sup> A more profitable bank is able to make more and riskier loans to private businesses, as it can better absorb credit losses from non-performing loans without reaching the lower regulatory capital limits.

<sup>30</sup> Brunnermeier and Koby (2019) relates the level of the reversal rate (which also in principle amounts to the effective lower bound for a central bank’s policy rate) to 1) banks’ initial fixed-income holdings; 2) the strictness of capital constraints; 3) the degree to which banks can passthrough negative rates to depositors; and 4) the initial capitalization and profitability of banks.

<sup>31</sup> EC (2019).

Figure 9: Euro Area Net Non-Financial Investment and Net Lending



The dwindling red bar in Figure 9 highlights how euro area general government net non-financial investments (i.e. after consumption of fixed capital through depreciation and acquisitions and disposals of non-produced assets) has been essentially zero since late 2012 and in recent years even turned negative. It is first and foremost this situation that euro area governments can individually and together address to help the ECB boost inflation.

To overcome the highly uneven geographical distribution of euro area member states' fiscal space and ensure adequate overall levels of additional public investments, it will be desirable to launch such stimulus through a centralized entity. Doing so, however, would invariably risk revisiting the poisoned debate about the creation of Eurobonds, and the lack of democratic legitimacy in doing so within the current euro area institutional framework.

Instead, what euro area (and other EU) governments must first do is to jointly identify the set of common tasks that they want "Europe to solve" in the coming years, and only then discuss how to jointly finance their solutions. On a lengthy list, the climate change challenge of achieving a carbon neutral Europe by 2050 recently endorsed by incoming Commission president Ursula von der Leyen<sup>32</sup> is probably the most physically urgent, politically salient and financially demanding task before Europe today.

Kickstarting an effective European-level response to climate change in the form of a comprehensive, much higher and legislated to continue to rise for decades price on carbon emissions in Europe would offer several benefits for the longer-term inflation outlook in the euro area.

<sup>32</sup> [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_19\\_5542](https://ec.europa.eu/commission/presscorner/detail/en/ip_19_5542).

First of all, it would obviously raise prices on carbon intensive products significantly (including necessarily on imported ones via carbon based border adjustment tariffs) and continuously in line with a long-term rising carbon price.

Secondly, it is overwhelmingly likely that for carbon neutrality to be feasible by 2050 substantial additional public investments must be made in new carbon neutral infrastructure across Europe. Incoming Commission president Ursula von der Leyen has mentioned €1trillion euros in the next decade<sup>33</sup>. Such additional green investments – a European Green New Deal – would raise economic growth in Europe and hereby stimulate inflation dynamics. This could be financed for instance through the issuance by a European level entity, such as the European Commission, European Investment Bank, or European Stability Mechanism, of European Green Investment Bonds, taking full advantage of the low costs of capital for such entities. It is not clear that relying on financial leverage to reach say a €1trillion target will lead to sufficiently timely and effective climate mitigation projects in Europe, as private investors may not be swayed to profitably join. Consequently, euro area governments should if required be ready to make a €1trillion investment commitment on their own and finance it directly with their own joint European Green Investment Bonds. These would be eligible for purchase by the ECB as part of already existing asset purchase programs, setting the stage for a new and EU Treaty compatible “green macroeconomic policy coordination” between the ECB and euro area governments.

And lastly, but perhaps most importantly, implementing a comprehensive and biting carbon price in Europe would – by design – destroy the value of the part of the region’s capital stock that is in the fossil fuel and related sectors. This would create both winners and losers. A large group of economic losers would, like the losers from international trade, need to be compensated by governments from the carbon derived revenue. At the same time, the EU faces a fortuitous set of macroeconomic circumstances for deliberately destroying parts of its existing capital stock right now. Interest rates are rock-bottom and European private businesses have been net savers of capital in recent years, despite these low interest rates. An effective carbon price would also create a host of private sector winners, now incentivized to invest in a carbon neutral European future, and in the process – side by side with governments – provide a powerful new economic stimulus to euro area growth and inflation dynamics.

The historical analogy for a post-carbon price hike public and private investment-led European growth spurt is the situation Europe faced after World War 2. Fighting had devastated large parts of Europe’s physical infrastructure and a huge investment drive in the following decades were required to rebuild and modernize it. An ambitious Green New Deal, including a biting carbon price and European Green Investment Bonds would – peacefully – achieve much of the same outcome as Europe’s postwar reconstruction, unleashing another long period of higher growth, pushing inflation towards targets and helping solve the climate challenge in the process.

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<sup>33</sup> Von der Leyen (2019).

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This paper argues that the euro area has in recent years shared the same unfortunate concurrent systemic economic/financial crisis and demographic turnaround to an outright declining working age population that Japan suffered in the early 1990s. This combination will continue to depress euro area inflation dynamics for the foreseeable future, making it imperative that new fiscal policy initiatives, including public climate related investments, complement the ECB's ongoing monetary policy stimulus.

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PE 638.425  
IP/A/ECON/2019-27

Print ISBN 978-92-846-5527-4 | doi:10.2861/480833 | QA-02-19-726-EN-C  
PDF ISBN 978-92-846-5526-7 | doi:10.2861/103184 | QA-02-19-726-EN-N