Luigi Paganetto *Editor*

Yearning for Inclusive Growth and Development, Good Jobs and Sustainability

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Solving the Problem in Italy and Much of Western Europe

Edmund S. Phelps

Abstract What are the deep, structural problems in Italy—the problems that preclude a "good economy"—even if everything else goes right? Much of the problems have to do with innovation, "indigenous" and "imported." Innovation is generally necessary if people are to have gratifying working lives and rising living standards, though some kinds of innovation create a problem. How has Italy fared in this dimension?

1 Innovation in Italy

Long ago, several nations enjoyed an *explosion* of *indigenous* innovation (innovation originating within the nation and not imported from abroad), a large part of it *capital-saving* more than *labor-saving*: America and Britain around 1820, France and Germany around 1870—and Italy around 1950. By my calculation, Italy in that year ranked in fourth place in the big country rankings—as Italy pulled up, Germany fell back. (That surprised me because I understood the magnificent history compiled by Gianni Toniolo as concluding that the Italian economy had yet to attain sustained innovation at a good rate[1]). With that hugely fruitful innovation going on, these nations enjoyed a "golden age" from 1950 to 1970: real wages streaked ahead of wealth, leading to increased labor force participation; and the passion for new

Edmund Phelps, the 2006 Nobel laureate in economics, is director of the Center on Capitalism and Society at Columbia University. His recent books are *Mass Flourishing* (Princeton Press, 2013) and *Rewarding Work* (Harvard Press, 1st ed. 1997, 2nd ed., 2007). See also his study for Italy's Consiglio delle Ricerche, *Enterprise and Inclusion in Italy* (Kluwer Academic, 2002).

[1]Gianni Toniolo, ed., *The Italian Economy since Unification* (Oxford, 2013).

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methods and products brought high job satisfaction and consumer satisfaction.[2] (As the song goes, "I remember it well." I remember the model-building we were all doing at the RAND Corporation, the Lamborghinis in a Wilshire showroom, the Beatles, the Boeing 707s—and much more).

But these good times were losing some of their shine. Estimates by Raicho Bojilov and me at the Center on Capitalism and Society show that indigenous innovation was *gradually slowing* in Italy as well as France over the postwar period; and it was much *slower* throughout the period in Germany than it had been in its heyday under Bismarck.

Since 1970, there has been tumultuous structural change in the West:

- *First*, indigenous innovating has been markedly *slower* over the period from 1970 to 2012 in the U.S.—aside from the years of the internet boom—and also in the U.K. and France. The sharp slowdown of "imported" innovation in Italy and Spain may be caused in large part by the contraction in the importable innovations that were available in this period—not just by similar internal developments. However, these slowdowns have brought a major slowdown of total factor productivity and labor compensation, which has caused social discontent. They have thrown events into reverse: wages lag behind wealth, leading to decreased labor force participation, decreased job satisfaction and boredom borne of stagnation.

I suspect you are wondering whether there is any factual basis for these conclusions. My book *Mass Flourishing* points to *evidence* drawn from the *World Values Surveys*.[3] It shows that in 1990–91 the mean level of reported *job satisfaction* was very low in the countries suffering low levels of indigenous innovation—Italy and France, for example—and relatively high in countries with relatively high indigenous innovation—notably Switzerland, Denmark and America. Now, the same research team has found evidence from 2008 data in the *European Values Surveys* that further supports this theory.[4] It shows that among 13 economically advanced western European countries, those ranking *lowest* in reporting "high" or "somewhat high" job satisfaction—Spain, France and Italy—ranked very low in indigenous innovation as well (9th, 11th and 13th respectively) and those ranking *highest* in job satisfaction—Switzerland and Denmark—ranked very high in indigenous innovation (in 2nd place and 4th place, respectively).

- *Second*, and perhaps more serious over the near term, the *losses* of this innovation, made so fruitful because it was predominantly capital-saving, are now

[2] I came across this characterization in an op-ed suggesting that "[t]he period after the two world wars was in many ways a Golden Age." See Antar Haldar, 'Is there a future for capitalism? It doesn't have to become an uncontrollable monster,' The Independent, May 18, 2018.

[3] The data are from the *World Values Survey*. See *Mass Flourishing* (Princeton: Princeton University Press, 2013), pages 196 and 197.

[4] Data in the *European Values Surveys* are usually found in *World Values Surveys* but not in cases where American data to accompany them are not available.

accompanied by *gains* of innovation coming from the "digital economy"—in the U.S. and many other countries too. And this new innovation is much more labor-saving. (Amazon and Microsoft are good examples; I think; perhaps Google is an example of capital-saving.) It has caused major job losses in the affected factories. In regions with many such job losses, there has been a wholesale withdrawal from the labor force: America's Rust Belt in Appalachia and adjacent regions, Britain's West Midlands and France's Lorraine region.

It is interesting that the countries which have always been regarded—historically, at any rate—as "innovation nations"—are the ones that have these distressed regions, while the countries that have always been regarded as "trading nations"—Germany and Holland, for example—have not been afflicted with such regions. I have to leave it up to you to decide whether Italy fits in the first group or the second.

If Italy is suffering from the same rust belt phenomenon, the country is in a double bind: There is less of the unambiguously good innovation and more of the problematic.

You may be interested in knowing what I believe Italy and other countries must try to do to reverse the decline of the good innovation. I have written some pages suggesting measures that state and society could take. The most thorough presentation is in the 8½ pages at the close of my book *Mass Flourishing*—pages 316–324. Society must cultivate in students and young people an eagerness and capability to innovate.

Further, society must stop vested interests and corrupt officials from blocking or discouraging new product or methods—at least those not judged against the public interest.

It is clear now that such a revitalization of the economy might have the "side effect" of giving a boost to the problematic innovation—the innovation that drives down wages to a lower growth path. As a Chinese proverb says: "Beware that you get your wishes!" Is there a way out of this conundrum? It appears so, once we understand the dynamics of labor-saving innovation.

In a couple of theoretical models that Hian Teck Hoon and I built over the past year or more, a single, purely labor-saving innovation—more precisely, a single innovation that adds a bunch of robots to workforces in the way a wave of immigration adds workers to workforces—would drive down the wage rate. But the resulting increase in the capital stock would pull the wage rate back up to where it had been before the robots came.

And the bulge of profits on private capital and the rise of tax revenues appear to be enough to compensate for the dip in wage rates. Perhaps the lesson to draw is that the nation's safest strategy is to take measures to slow the procession of robots that arrive to do the kind of work done by the humans.

My conclusion from all this is that Italy as well as America, Britain and France must take all reasonable measures to boost the dynamism of their economies while they also take steps to ensure that the influx of technologies proceeds sufficiently slowly so that wage rates and employment of the affected workers can be cushioned through government compensation paid for out of the rising tax revenues.

The euro, growth and employment I do think from time to time about other issues in the West. We have all been hearing for a very long time the contention that Italy has a serious problem with the euro—whether or not there is also a problem of deficient innovation that is independent of any currency problem.

I think we should be skeptical about these claims. (My friend Stefano Micossi once congratulated me for being skeptical about everything.) But it is impossible for the proponents—all of them highly reputable economists—to prove their claims *beyond any doubt.* So we should take seriously their arguments.

There is the *slow recovery* claim and the *slow growth* claim. The former claim is that Italy could depreciate its currency in pre-euro times and now it can't. Of course, one of the arguments *for* the institution of a common currency was that it would put an end to devaluations and resulting inflations. (I heard other arguments from Robert Mundell and Tommaso Padoa Schioppa. I also had conversations with Dominick Salvatore.) One might wonder why the Italians are not grateful that the euro has averted the need for a catastrophic depreciation.

The complaint against the euro that we hear is that the *lack* of a devaluation has been a drag on the speed of recovery in Italy after it hit bottom following the global financial crisis. The recent book by Mario Baldassarri, *The European Roots of the Eurozone Crisis*, is perhaps a definitive source.[5] The data in FRED, a standard source of G7 data, show that Italy's so-called employment rate, seasonally adjusted, climbed from its low in July 2010 of 56.6–58.2 % in October 2017. That is a slow speed of recovery, to be sure. But if the euro is at fault, we should expect to see a poor result also in France and Spain. In France, the same employment rate climbed from its low of 63.9% in October 2010 to 65.2% in October 2017. The speed of recovery there is also poor. But in Spain, the employment rate climbed from its low of 56.0% in April 2012 to 61.6% in October 2017. This is a much faster speed of recovery. Some other countries in the Eurozone also show a relatively speedy recovery: Holland climbed fast from its low of 64.5–67.2% and Portugal—bless its heart—has exploded from its bottom of 59.3–68.9%.

Denmark also sprinted back to normal. Tentatively, I would lay all or most of Italy's poor performance to structural causes. We do not know how Italy would have performed had it chosen to operate with a flexible exchange rate.

There is also a theoretical point to be made: although Keynesian theory has a well-deserved place in understanding the initial employment effects of a contractionary shock, it is implausible to attribute a weakness of employment to a decrease of aggregate demand more than a dozen years ago. Nominal wages and prices ultimately adjust. Start-ups find openings.

The slow growth claim is that the overvaluation of Italy's currency has brought *slower growth* in Italy since the advent of the euro in 1999. I wonder: Is the euro the cause of that deceleration? My great colleague and dear friend, Joseph Stiglitz, points out that from 2000 to 2016 the eurozone GDP has shrunk noticeably relative to the US GDP—if my arithmetic is right, from 88.5 to 80.0%. But until 2005 or so,

[5]Mario Baldassarri, *The European Roots of the Eurozone Crisis,* (Palgrave, 2017).

the US was enjoying the extraordinary rapid growth brought by the buildout of the internet. Furthermore, this relative shrinkage of the eurozone countries ought to be compared with what happened to the relative size from, say, 1985–2000. We need to recall that in the 1980s there was the deep "slump in Europe," which Jean-Paul Fitoussi wrote about in our book *The Slump in Europe*[6]*:* The European slump was deeper and longer than the slump in the U.S., so Europe was losing ground in the '80s—long before the euro. And it lost still more ground in the 1990s when, as I noted, the US began to develop the internet. We called it the second Great Depression!

However, the heart of the matter is whether the euro is the cause of still slower *productivity growth* in Italy—and, by the same logic, France and Spain too. I would note that the estimates by Bojilov and me show gradual *slowing of indigenous innovation* in Italy in the '50s, again in the '70s and again in the mid- '90s—with no further slowing whatsoever after 1999 till the last year, 2011.

I would interpret these very preliminary findings as suggesting that real, not monetary forces, are at work in the West. I feel that future data will show even slower indigenous innovation in the U.S., the U.K. and France leading to a *further* slowdown of productivity and investment throughout the West. Certainly, the increased weakness in investment and real wage rates is apparent.

If that is so, the West must address the need not for a new monetary system but for a revival of the spirit of innovation. That is needed if the West is to regain the prospering and flourishing of its Golden Age.

[6]Jean-Paul Fitoussi and Edmund Phelps, *The Slump in Europe: Reconstructing Open Economy Theory*, (Basil Blackwell, 1988).

Trump's Challenge to the World's Liberal Economic and Trade System

Dominick Salvatore

Abstract The unexpected election of Donald Trump to the Presidency of the United States in 2006 has led to major changes in U.S. economic and trade policies in the first 2 years of the new administration in Washington. Some of these policies, both domestic and international, are very controversial and represent a major break with the past, and they have already had a major impact on the U.S. and on world economies.

This paper examines the reasons for the slow recovery and growth in the United States after the recent global financial crisis and "great recession", the domestic and international policies actually adopted by the Trump administration to stimulate U.S. growth, and the effect of those policies, on the United States and the rest of the world.

1 Policy Proposals by Candidate Trump

At different points during the course of the presidential campaign, Trump promised a reduction in the U.S. corporate tax rate from 35 to 15%; a reduction in the number of personal income tax brackets from seven to three of 10, 25, and 35% (with the top rate down from 39.6%); and increase infrastructure investments (of about $1 trillion), as well as a major increase in military expenditures.

Trump also promised to reduce and change domestic regulations by rolling back of parts of the Dodd-Frank Act of 2010 (aimed at preventing future banking crises), repealing of the Affordable Care Act or Obamacare, and rolling back many of the regulations introduced during previous administrations.

On the international front, Trump promised to reform or drop out of international trade agreements and increase trade protection. Specifically, Trump promised to renegotiate NAFTA, which he called "the worst trade deal in history", drop out of the Trans-Pacific Partnership (TPP), put the Transatlantic Trade and Investment

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Partnership (TTIP) on hold, impose import tariffs to reduce the huge U.S. trade deficits, drop out of the Paris Climate Accord, restrict illegal immigration, and expel or repatriate illegal immigrants who committed serious crimes while in the United States.

Trump expected his policies to accelerate U.S. growth from the anemic yearly average rate of 2.1% since crisis to 3.0–4.0% per year in the future, and to significantly increase U.S. manufacturing output and employment by sharply cutting U.S. huge bilateral trade deficits by imposing import tariffs, especially on China. Most economists, however, anticipated a growth rate more likely in the range of 2.3–2.5% because the United States was close to full employment and the growth of the labor force was not likely to increase very much. Furthermore, the rising government debt resulting from tax cuts and the increase in infrastructure and military expenditures would lead to inflationary pressure and higher policy rates, which would discourage private investments and lead to capital inflows and a dollar appreciation dollar—all of which would dampen U.S. growth.

The future U.S. growth could also be slower than anticipated by Trump because of the slower growth of emerging markets because higher U.S. interest rates would slow or reverse capital inflows to these countries and could also lead to a debt crisis in the many emerging market economies that are highly indebted in dollars. More U.S. trade protectionism could also lead to a trade war with China, which would slow down its growth and, as a result, dampen the growth rate of other countries. Slower growth in China and other emerging market economies would then lower U.S. and world growth in the highly interdependent and globalized world of today. The inherently slower growth in Europe would also dampen U.S. and world growth.

2 Domestic Economic Policies Adopted by the New Administration and Their Effects on U.S. Growth

During 2017 and 2018, Trump was able to adopt many of the policies that he had promised on the campaign trail, but not all. On the taxation front, the Trump administration passed a tax reform bill that lowered the federal corporate rate from 35 to 21% (rather than to 15% that he had originally sought). At the same time, personal income tax brackets were reduced from 7 to 4 of 10, 25, 35, and 37% (instead of the three brackets of 10, 25 and 35% that he had promised). Trump was also able to obtain funding for more infrastructure investments and the military, but not as much as he promised because of the very large increase in budget deficits and national debt that they would entail.

On the domestic *regulatory* front, the Trump administration rolled back parts of the Dodd-Frank Act of 2010, reduced many regulations imposed during the 8 years of the Obama and of previous administrations, and repealed the individual mandate that required every employee to have health care, but he did not succeed in repealing the Affordable Care Act or Obamacare as a whole (as he promised to do during the presidential campaign). Trump was also prevented (for the most part) by the courts

from taking measures to stop illegal immigration and to expel and repatriate illegal immigrants who had committed serious crimes while living in the United States. Also, Trump was able to get only partial financing to build his wall on the Mexican border to stop illegal migration.

At this point, it should be safe to say that most of the policies advocated by candidate Trump, and those actually passed or promised by the Trump administration in its first 2 years of operation, are aimed at increasing the growth of the U.S. economy ("putting America first") and bring it back to the higher growth trend that prevailed prior to the 2008–2009 global financial crisis and "great recession".

Despite the policies adopted so far and promised for the future by new administration, many economists and the markets expected the U.S. potential and actual growth rate to rise only to 2.3% (at most to 2.5%) per year in the near and medium term, which would not be much higher than the 2.1% rate that the United States averaged from 2009 to 2016. Several reasons were advanced for this.

First, the $1.5 trillion Trump tax cut is likely to contribute to an increase in the U.S. budget deficit to above $1 trillion in a few years. This would lead to higher market rates, which would discourage private investments and thus U.S. growth. Secondly, the higher corporate profits resulting corporate tax cuts is likely to be used by American corporations more for stock buybacks and for higher savings by high-income individual than for higher investments. Thirdly, higher U.S growth cannot be achieved because the United States is or seems to be already at or near full employment. Fourthly, and as pointed out by many economists during the presidential campaign, the rise in U.S. rates are also likely to lead to more capital inflows to the United States, a stronger dollar, and to less capital flows to emerging markets, and possibly to even lead to a new financial crisis in those emerging market economies that are highly indebted in dollars. All of this is likely to cut growth in emerging market economies and, as a consequence, to also dampen the growth of the rest of the world, including the United States.

In fact, according to the International Monetary Fund (IMF), real U.S. growth was actually 2.2% in 2017 (see Table 1) which, on average, was not higher than for the other G-7 countries. Table 1 also shows that U.S. growth was substantially higher in

Table 1 Growth (%) of real GDP in G-7 countries, 2009–2018 and projections for 2019–2020

	Yearly average					
Area/Nation	2009	2010–2016	2017	2018	2019	2020
United States	−2.8	2.1	2.2	2.9	2.6	2.2
Japan	−5.4	1.5	1.9	0.7	0.8	0.7
Germany	−5.6	2.0	2.5	1.4	0.7	1.1
United Kingdom	−4.3	2.0	1.8	1.4	0.8	0.9
France	−2.9	1.2	2.3	1.5	1.3	1.3
Italy	−5.5	0.0	1.6	0.8	−0.2	0.5
Canada	−2.9	2.2	3.0	2.1	1.9	1.9

Source: IMF, January 2019 and OECD, March 2019

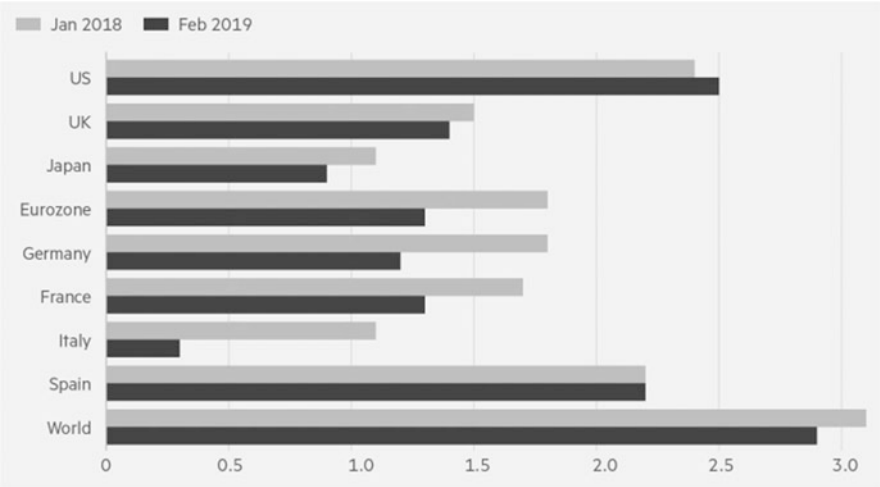

Fig. 1 Revised Growth Projections for G-7, Eurozone, Spain, and World in February 2019 with Respect to January 2018. Source: "The ECB Must Reconsider Its Plan to Tighten," *FT*, March 6, 2019, p. 11

2018 than the U.S. growth in the previous decade and much higher than growth in the other G-7 countries. OECD for projections for 2019 and 2020 show that growth will slow down in all G-7 countries, but with the slowdown being less for the United States than for the other G-7 countries. Furthermore, during 2017 and 2018 the number of new jobs created in the United States has been much higher in proportion to its labor force and the U.S. rate of unemployment of 4% was less than half of that in the other G-7 countries (except for Germany). Thus, we can conclude that the new administration in Washington was able to stimulate the growth of the U.S. economy, increase job creation and reduce the unemployment rate in relation to the previous administration and to the other G-7 countries, but not by as much as Trump had predicted. Figure 1 shows the sharply reduced growth rates projected by the OECD for the G-7 countries (other than the United States) and the Eurozone from January 2018 to February 2019.

We must also keep in mind that the projected growth rates for 2019 and 2020 shown in Table 1 are based on the implicit assumption that the trade policies of President Trump will not trigger an all-out world trade war. Also, to the extent that the higher growth rate of the United States in 2018 and projected higher growth rate for 2019 (even if lower than in 2018) was due primarily to the reduction in U.S. taxes in regulations by the new administration—these are liberal rather illiberal national economic policies, which are likely to stimulate U.S. growth even in subsequent years.

3 International Policies Adopted by the New Administration and Their Effects on the U.S. and the World

More dramatic and momentous are the international (trade) policies promised and actually adopted by Trump administration. On the presidential campaign trail in 2016, candidate Trump promised that as President he would renegotiate international trade agreements and negotiate directly with major U.S. trade partners bilaterally in order to force them to eliminate foreign protection against U.S. exports and provide as equal access to their markets as they have in the U.S. market.

As President, Trump dropped out of the Trans-Pacific Partnership (TPP), put the Transatlantic Trade and Investment Partnership (TTIP) on hold, forced the renegotiation of NAFTA, and imposed hundreds of billion of dollars of tariffs on U.S. imports of steel, aluminum and other products on most its major trade partners, and threatened to impose a 25% tariff on automobile imports from Europe, Japan, China and other nations if they did not eliminate their restrictions on U.S. exports. Trump even threatened to drop out of the World Trade Organization (WTO) if it continued to fail to enforce the rules of the liberal world trading system, created after World War II under U.S. leadership.

The most dangerous U.S. trade dispute, however, is with China, which came to a head in 2018 when the United States imposed tariffs on hundreds of billions of dollars on U.S. imports from China because of the alleged (1) systematic stealing of U.S. technology on a grand scale by Chinese companies, (2) illegal subsidies given by the Chinese government to some its large companies, (3) requirement that U.S. and other foreign firms enter into joint ventures and transfer their technology to Chinese companies as a condition for allowing U.S. and foreign firms to operate in China, and (4) China's over-expansion of its production capacity of many products (such as steel and aluminum) and then dumping the excess production on the U.S. and world market.

After China did not heed U.S. demands to eliminate its unfair trade practices against U.S. firms and trade, the United States imposed initial import tariffs on $50 billion of Chinese exports to the United States in June 2018. When China retaliated by imposing tariffs of its own on an equal amount of U.S. exports, the United States "double up" in July by imposing a 10% import tariffs on an additional $200 billion of Chinese exports (and threatened to increase the tariff rate to 25% if China did not change its ways). Since China imported less than $190 billion of goods and services from the United States in 2017 (as compared with over $520 billion of its exports to the United States), China could not possibly retaliate in kind, but China threatened to retaliate with other form of protection against the United States. Thus, there was the making of a trade war at the end of 2018, which would be very damaging and costly not only for the warring parties but for the world as a whole.

Trump claimed that its initial tariffs on Chinese exports to the United States were essentially "countervailing duties" or a defense against Chinese protectionism and therefore did not justify China's retaliation—and that is why Trump "doubled up"

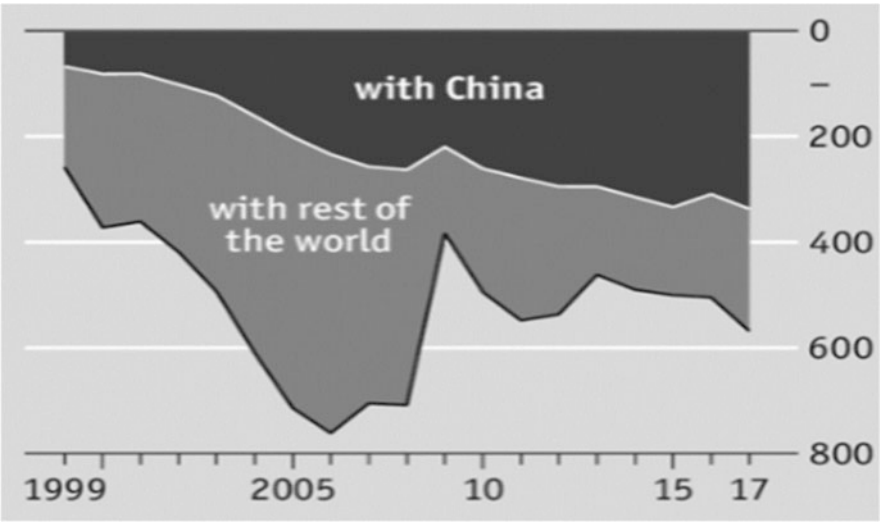

Fig. 2 U.S. Trade Deficits in Goods and Services with China and the World, 1999–2017. Source: U.S. Bureau of Economic Analysis, 2018

when China retaliated. Also, Trump did not use the WTO to force China to drop its trade restrictions against U.S. firms and exports or authorize the United States to impose countervailing duties on Chinese exports because the WTO seemed unable or unwilling to enforce the rule of the trade system over the years. Thus, the U.S. "defensive" protectionistic trade policies under Trump undermined the WTO and risked a very damaging trade war. At this writing (February 2019), the United States and China have resumed trade talks in the hope of avoiding a full-fledged trade war. Although this is not the first challenge to the liberal postwar world trade system (see Salvatore 2009), it does represent the by far the greatest challenge and danger to actually lead to its collapse.

4 Is the World Trading System Biased Against the United States? Are U.S. Trade Policies Justified?

As Fig. 2 shows, the United States has had large and unsustainable trade deficits for more than a decade and more than half of U.S. trade deficits are now with China. While the United States has trade deficits with many countries, the fact remains that a single country (China) is now responsible for more than half of U.S. trade deficits. Also to be pointed out is that China's trade surplus with the European Union is much smaller in relation to the EU's GDP than with the U.S.

Figure 3 then shows that the United States has lower tariff rates than its principal trade partners, especially China and South Korea. This means that other nations are

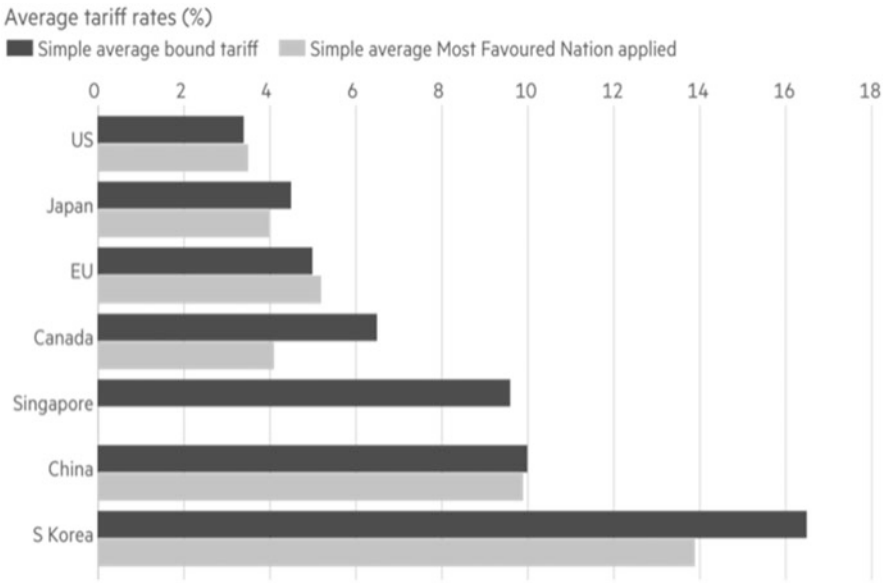

Fig. 3 U.S. Average Tariff Rates (%) Were Lower than in Other Trading Nations in 2017. Source: World Trade Organization, 2018

more protectionistic than the United States, but (as we discuss later) the higher tariffs of most U.S. trade partners are not the cause of U.S. trade deficits (as some U.S. government officials believe).

In addition to China, President Trump also singled out Germany for its unfair trade practice of having an excessive total trade surplus of nearly $300 billion in 2018, which is of similar in magnitude to that of China, a much larger country. In fact, Germany's trade surplus is 8–10% of its GDP (as compared to China's less than 3% of its GDP). And therein lies the problem since according to the (soft) rule of the International Monetary Fund (IMF), nations should not generally have a trade surplus in excess of 3% of GDP. The reason is that an excessive trade surplus by one nation may mean some other nation(s) may have an excessive and unsustainable trade deficit and, according to IMF rules, the burden of adjustment must be symmetrical and fall on both nations, and not only on the deficit nation(s). Since Germany is one of the largest exporter of automobiles to the United States, President Trump is threatening to impose a 25% duty on all automobiles exported to the United States.

The greatest complaint of unfair trade practices is, of course, directed at China. In June 2018, the *White House Office of Trade and Manufacturing Policy* published a study providing evidence on "How China's Economic Aggression Threatens the Technologies and Intellectual Properties of the United States and the World" by China engaging in: (1) systematic stealing U.S. technology on a grand scale sponsored by the Chinese government, (2) providing illegal subsidies to some its large companies to overcome foreign competition, (3) requiring U.S. and other foreign

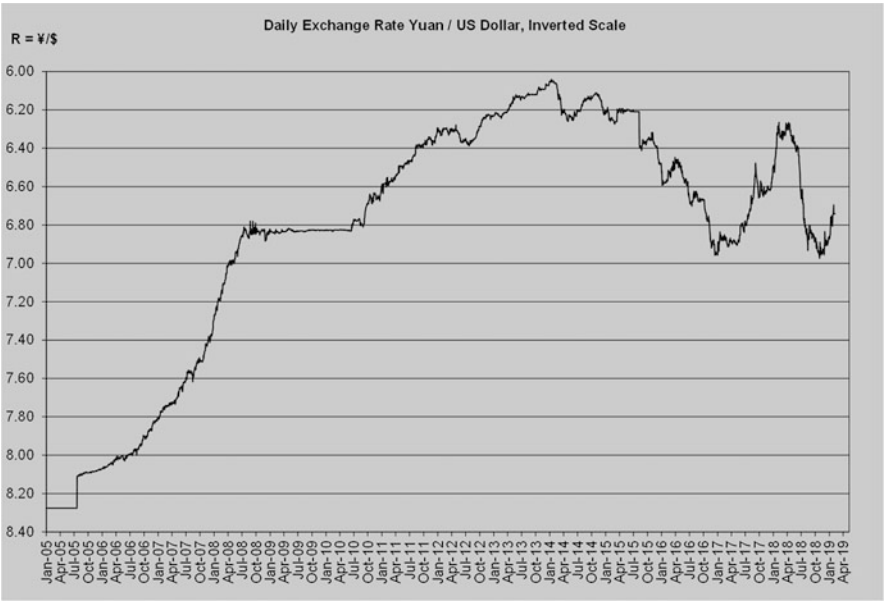

Fig. 4 Daily exchange rate of the Yuan/Dollar from January 2005 to January 2019. Source: Calculated by the Author from IMF data

firms to enter into joint ventures and transfer their technology to Chinese companies as a condition for allowing them to operate in China, and (4) engaging in the over-expansion of its production capacity of many products (such as steel and aluminum) and then dumping the excess production on the U.S. and other world markets.

An additional argument is that China deliberately keeps its currency (the RMB or Yuan) undervalued with respect to the dollar in order to stimulate its exports and discourage its imports from the Unites States. However, since 2005, the yuan's exchange rate has, more or less, reflected market forces rather than being determined by the Chinese government and central bank as previously done. As Fig. 4 shows, the yuan actually appreciated with respect to the dollar from October 2010 to January 2014 when China was still growing very fast, but then it depreciated afterwards when China's growth sharply declined. If anything, there is evidence that China's central bank intervened in the foreign exchange markets to prevent a further depreciation of the yuan so as not give an additional reason for the United States to accuse China of trade protectionism. In fact, the United States has recently stopped accusing China of "exchange rate protectionism".

The U.S. trade problem with China came to the forefront in 2002 when China was admitted to the World Trade Organization (WTO) on the condition that it would gradually move toward a market economy over time and follow WTO's trade rules. This did not happen. China took full advantage of the opportunities of, more or less, free access to other countries' markets but it did not allow equal trade to foreign companies in the Chinese market. In other words, China "gamed the system". Over

the years, China did promise several times to change its ways, but it never did (nor does it seem willing to do). This set the stage for President Trump imposing higher and higher import tariffs on more and more Chinese exports to the United States. The purpose was (and is) to pry open the Chinese market to U.S., try to end Chinese steeling of foreign technology, and ending all the other unfair trade practices, so as to establish a level-playing field in international trade and economic relations.

5 Are U.S. Trade Policies Justified? What Trade Policies Should the United States Have Adopted?

The U.S. accusation that China is not following WTO rules that it had agreed to follow upon joining the WTO and this is harming (taking advantage of) its trade partners, especially the United States, seems to be mostly true. One result is that (as we have seen) China is now responsible for more than half of the U.S. trade deficit. Of course, there is no theory that postulates that a nation needs to balance trade bilaterally. But when one nation (in this case China) is responsible for more than half of the total trade of the very large and unsustainable trade deficit of the biggest (and very competitive) economy in the world (the United States)—clearly something is wrong.

Thus, it would be fair and appropriate for the United States to protect itself by imposing "countervailing duties" on China's exports to the United States, as allowed and prescribed by the WTO rules, and this would not allow China to retaliate and respond in kind with duties of its own on U.S. exports (as it occurred when the United States imposed a 25% import tariff on $50 billion of Chine exports to the United States in June of 2018). But the United States chose to act unilaterally by not bringing China to the WTO (as required by WTO rules) for adjudication and very likely authorize the United States to impose calibrated countervailing duties on Chinese exports to the United States. Thus, the United States, itself, also did not follow WTO rules, and this allowed China to soon retaliate with import tariff on an equivalent amount of U.S. exports to China. When the United States then "doubled up" by imposing a tariff of 10% on another $200 billion of Chinese exports to the United States (with the threat of increasing that tariff to 25% if China did not change its ways), the stage was set for a full-fledged trade war between the United States and China, which would probably involve other nations, as they would be forced to chose sides.

But, as we have seen earlier, this was not the only unilateral protectionistic trade action taken or promised by the United States in 2017 and 2018. The United States also threatened protectionist trade action against many other U.S. trade partners. As we have seen, the United States dropped out of the TPP, put the TTIP on hold, forced the renegotiation of NAFTA on Canada and Mexico, and imposed hundreds of billion of dollars of tariffs on U.S. imports of steel, aluminum and other products on most its major trade partners and threatened to impose a 25% tariff on automobile

imports from Europe, Japan, China and other nations if they did not eliminate their restrictions on U.S. exports. Trump even threatened to drop out of the World Trade Organization (WTO). Trump acted unilaterally because of his strong belief that the WTO was unable and unwilling to impose that its trade rules be respected. But by doing so, Trump seriously undermined the WTO and is risking a world trade war, which would seriously damage the entire world.

Thus, the United States unilaterally imposed import tariffs on most of its major trade partners in order to induce them to change their ways and provide as open trade access to U.S. goods and services as they enjoy in the United States. Of course, Trump was told that import tariffs on Chinese and other nations' exports to the United States would not reduce the U.S. trade deficit because trade deficits are caused (result) from gross *domestic* macro imbalances, specifically from the fact that the United States spends much more that it saves, and this excess is reflected in its trade deficit. Specifically, U.S. invests much more than it saves, and this excess becomes the U.S. then in a trade deficit. Trump, thus, used import tariffs primarily as a weapon to force its trade partners to open their markers reduce their protectionism against the United States.

The correct U.S. trade policy, however, would have been and should be to convince the other major trading nations that China's non-market trading harms them all, not just the United States, and convince them to jointly bring China to the WTO, where legal proof of China's transgressions would be presented, which, if proved true, would lead the WTO to sanction the joint legal imposition of countervailing duties on China. This policy would have a greater chance of China's accepting to change its ways in international competition and trade, and avoiding a trade war.

Figure 5 provides an OECD simulation scenario that shows the effect of an increase in trade protection by the United States, Europe, and China that increased trade costs by 10%, and the resulting percentage deviation in the GDP, imports, and

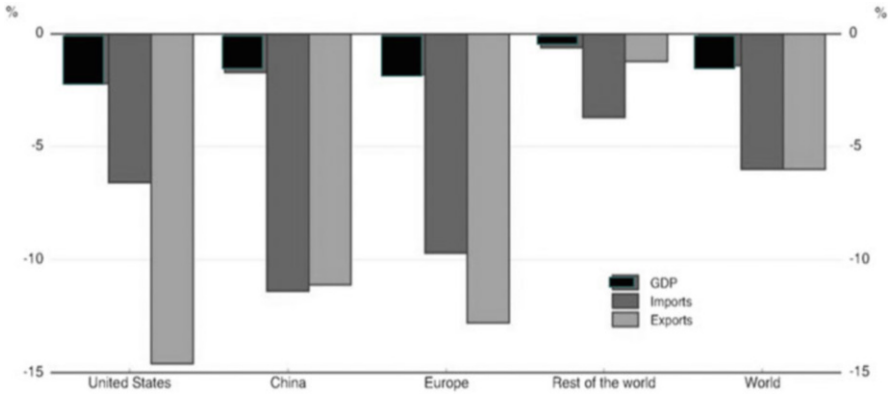

Fig. 5 Effect on GDP, imports, and exports of an increase in trade protection by the United States, Europe and China that raises trade costs by 10%. Source: *OECD Economic Outlook*, No. 2, 2016

exports of the United States, China, Europe, the rest of the world. The simulation exercise shows that GDP, imports, and exports would fall by various percentages with respect to the baseline in all countries and areas or groups of countries. Figure 5 also shows that the U.S. GDP would fall more than in other nations and areas. The reduction in imports and exports would be much greater than the reduction in GDPs, especially for the United States, Europe and China. Of course, an all-out trade war would very likely be much more economically damaging (see Salvatore and Campano 2018).

The United States and China are now (February 2019) engaged in intensive negotiations to avoid an escalation in trade protectionism and a possible trade war, but even if an accord were reached, strong international trade controversies are likely to recur, especially between the United States and China, unless the WTO were reformed and strengthened and the world returned to the rule of law in international economic and trade relations and to a liberal economic and trade system.

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Populism and European Integration: Diagnosis and Policy Response

Marco Buti and Karl Pichelmann

Abstract This paper offers a perspective on how to address the current populist charge against European economic integration. The first section provides a back mirror view on the economic and political issues that have marked the last few decades. While some of these issues, such as the intensification of global economic interaction were expected, few foresaw the extent to which the forces of "globalisation" would widen economic and political divisions within Europe and globally. The second section looks ahead, attempts to distil the defining challenges that we face, and sets out a perspective for EU economic policy over the next 5 years. In terms of economic policy priorities, the EU's ability to support the resilience of its economy and convergence in living standards will depend on its ability to deliver in three main areas: (i) growth and productivity, (ii) deepening the Economic and Monetary Union and (iii) ensuring that it acts as a Union that provides opportunities, empowers and protects.

1 Scrolling Back: The Big Picture

Over the last decade, the EU has well maintained its strong role in the international economy, weathering major global shifts. Despite (i) the rise of the BRICS, particularly China (ii) the impact of technological change greatly enhancing interconnectivity and (iii) its internal crisis in the euro area following the great recession, Europe remains an important player in the world economy. Although small in population, the EU remains rich per capita, with an open market, competitive firms, highly educated work force, investment-friendly environment and a stable currency. The EU has negotiated comprehensive trade deals with important partners and the Single

The views expressed in the paper are those of the authors and do not necessarily represent any official position of the European Commission.

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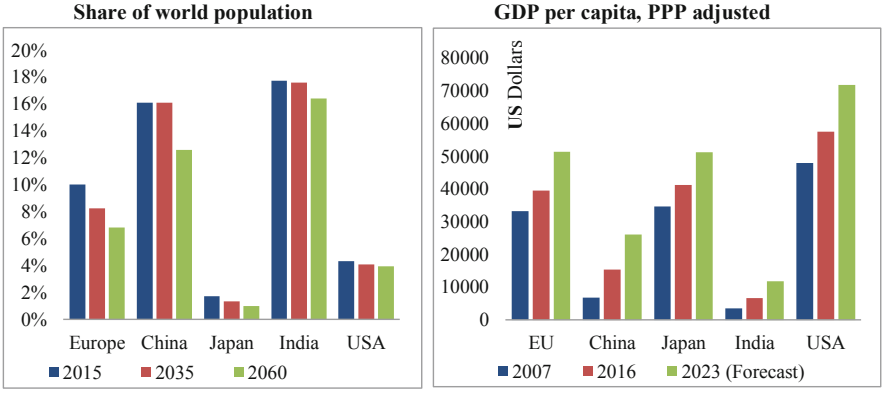

Fig. 1 The economic weight of the EU—small in population, but rich per capita. Source: UN World Population Prospects (right Fig.) and IMF WEO (left Fig.)

Market with its 500 million people is the most highly integrated economic area in the world and a major destination for foreign investment. Europeans enjoy overall standards of living that are among the highest in the world with prosperity broadly shared among its people as inequality, albeit higher than 30 years ago, is still relatively low by international standards (Fig. 1).

Despite this positive picture, the benign view of the benefits of globalisation has underestimated some related side effects. "Globalisation" as a catch-all for increasing trade, global supply chains, financial integration and capital market liberalisation has been economically beneficial. At the same time, it should be acknowledged that critics of globalisation do have a point. Concerns about the negative impact on inequality and claims that it adversely affects fundamental socio-political values, such as national identity and sovereignty, should not be casually dismissed. Indeed, the post-1990 wave of globalisation and market integration has differed in many respects from previous episodes. First, it extended well beyond the traditional spheres of trade in goods to services, in particular unbridled liberalisation in finance, and to harmonisation of regulations behind the border such as investment rules, product standards, patents and copyrights etc. Secondly, it strongly interacted with skill-biased technological progress raising interconnectivity, thereby supporting off-shoring, relocation and outsourcing of economic activity and the build-up of integrated value-added chains. Thirdly, dynamic agglomeration and network effects have accentuated the spatial divide in the location of economic activities, with laggard regions increasingly at risk of falling in stagnation traps. And, obviously, the emergence of the BRIICS, in particular China, has been a game-changer in the world economy. Increased trade has been a by-product of these developments, but the main defining features have been financial globalisation and the creation of flexible mobile international production networks configured according to international cost arbitrage, including taxation and other aspects of national regulatory autonomy.

As a consequence, the balance of gains and pains from globalisation in advanced economies has undergone significant shifts. The gains have been strongly tilted to the multi-national firms, international finance and skilled labour. The positive pay-offs for mobile factors and the high skilled has enhanced dynamic agglomeration effects, but increased regional and income disparities, resulting in the convergence process slowing and a stagnation in median incomes due to "winner-takes-it all" dynamics. Increased competitive pressures have improved market flexibility but have sometimes also had a negative effect on fair working conditions in the market. Before the crisis, an undiscerning perception of risks helped fuel large capital flows to emerging markets and the euro area periphery while systemic risks from unbridled financial markets went unaddressed. These evolutions introduced new fault lines in the economic and political order, with a perceived and real loss of control vis-à-vis big business and the financial sector. At local and even national level, exercising enforcement and discriminatory power has become more difficult and has limited the room for re-distributional manoeuvre. Reinforced by the legacies of the economic and financial crisis and the challenges associated with migration, a decades-long process where national economies became more and more entangled and interdependent at both the international and regional level faces increasing strains (Rodrik 2018). An integration process that has been the bedrock of a half-century of peace and economic development can no longer be taken for granted.

European economic integration has resembled many features of a "globalisation at the regional level". Geopolitical shifts following the fall of the iron curtain furthered the European integration process eventually bringing about two main developments: (i) the sharing of monetary sovereignty and creation of the euro; (ii) the enlargement of the EU towards Central and Eastern Europe. The cheerleaders' view was that it would bring Europe closer together—economically and politically. Economically, it has held true to some extent, but in the euro area, hopes for an endogenous move closer to an optimal currency area have yet to be fulfilled (Buti and Sapir 1998). Allocation and agglomeration effects have resulted in structural divergences and imbalances rooted in traditional national preferences. When the global financial crisis exposed underlying imbalances and design gaps in the construction of the EMU, the ensuing crisis extorted a heavy toll of political, economic and social costs. At the same time, the possible political tensions and dividing lines have been underestimated or treated with benign neglect, leading to a loss of trust between Member States (North-South creditor/debtor divide) and vis-à-vis the EU institutions (Fig. 2).

The enlargement of the EU towards Central and Eastern Europe has been the second defining element of European political and economic integration over the past few decades. In an economic sense, the EU has indeed worked well as "a great convergence machine", with enlargement triggering substantial productivity gains in Central and Eastern Europe and income convergence of the poorer new Member States closer towards average EU levels (Ridao-Cano and Bodewig 2018). The rapid integration process of economies with fairly different income levels has been significant, extending into tensions related to labour mobility and the hotly debated deficiencies in governance and unfinished institution-building. Together with the

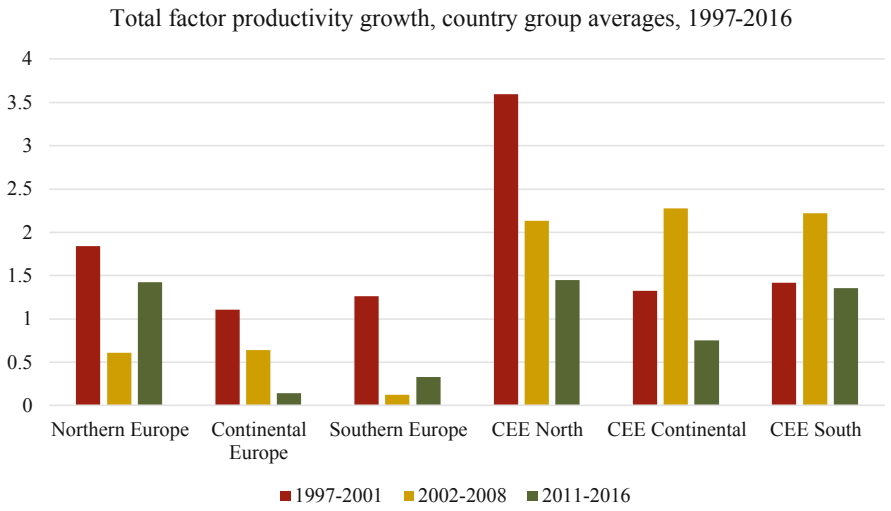

Fig. 2 Enlargement—the great convergence machine. Source: Based on data from the AMECO database of the European Commission

transfer of national autonomy and decision rights to EU institutions, nationalist-identity driven sentiments have been fuelled in both some "new" and "old" Member States, opening up an East-West political divide.

Migration and the influx of refugees and asylum-seekers have been economically manageable but the political impact has been deep. Net immigration has become more important for population change than the natural change. While in the past immigration was primarily driven by economic motives and family reunification, Europe has experienced a surge of asylum seekers in the last few years, with many new arrivals coming from war-torn countries. In addition, some EU countries have seen significant inflows of EU citizens taking advantage of their freedom of movement rights, while emigration away from Central and Eastern Europe has created labour shortages and affected its demographics. The difficulties of managing these developments at the domestic and European level has strengthened populist movements and propelled migration flows into one of the most divisive policy topics in today's Europe, confirming for many a view of centrist elites detached from the concerns of ordinary citizens. Thus, under the catchy slogan of "taking back control" a powerful narrative against further deepening of integration has developed. The most visible marker has been the UK's decision to leave the EU, which has made EU integration to go into reverse for the first time in the history of the EU (Fig. 3).

Frictions have also started to appear at the global level, where the multilateral rules-based order that the EU has played an integral role in forging since the end of the second world war, has shown signs of fragmenting. Multilateralism should be seen as a tool to deliver global public goods and internalise spillovers. In the aftermath of the crisis that began in 2008, the concerted actions of G20 members to stimulate their economies and refrain from protectionist measures were crucial in

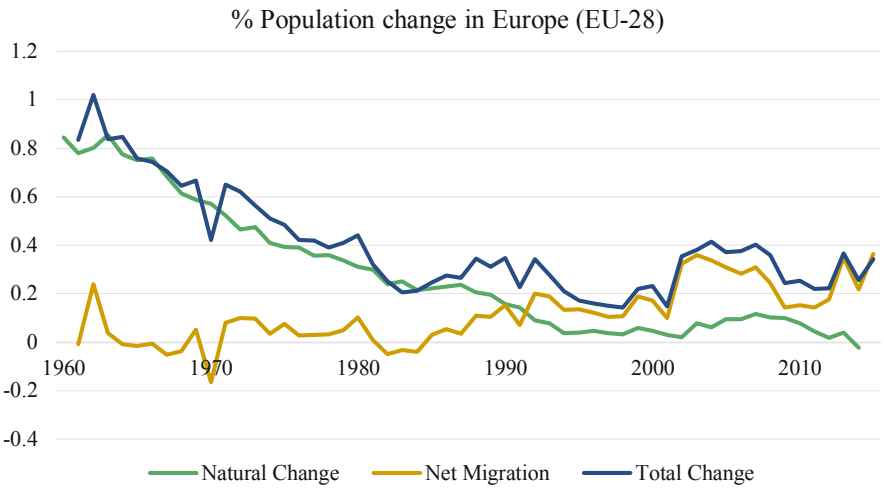

Fig. 3 Composition of population change. Source: Eurostat

avoiding another Great Depression. The global economy returned to growth as early as 2010. However, since 2010, economic conditions have been increasingly divergent and governments have had different views on the challenges ahead and on the policies needed, which has led to a suboptimal policy mix at the global level. As a consequence, the growth of the global economy and global trade since 2010 has remained constantly below pre-crisis trends. Between 2011 and 2015, the value of international trade grew less than 3% per year, considerably below its long-term trend. Trade growth in 2017 became robust again, but recent trade tensions mean that trade growth is now increasingly dependent on policy choices, particularly those of the US. Moreover, considerable external imbalances have appeared at the global level, with advanced economies and emerging economies having swapped places. Emerging countries now have, on aggregate, current account deficits. Large current account imbalances can be found among advanced economies, with the Euro area running a large trade surplus on one hand and the US running a persistent current account deficit on the other. These developments imply fragilities for emerging economies and are fuelling rising trade tensions between advanced countries (Fig. 4).

In the global arena, the economic and financial crisis led to institutional, financial and social fragmentation. In the years that followed the crisis, a multiplication of institutions with overlapping mandates and no clear roadmap for cooperation have emerged. For example, new multilateral development banks have been created in Asia (the Asia Infrastructure Investments Bank) and the New Development Bank, created by the BRICS. Regional financing arrangements have also played a more prominent role in solving crisis situations alongside the IMF. The international financial system has also shown signs of financial fragmentation as cross-border banks claims fell. This process was more pronounced in Europe than elsewhere with

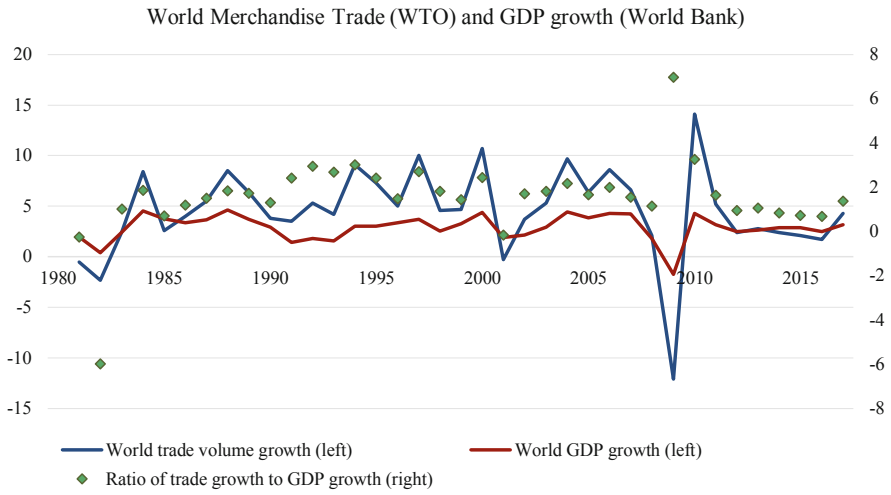

Fig. 4 World Merchandise Trade. Source: WTO Secretariat for trade, consensus estimates for GDP

a significant reduction of cross-border financial flows after the crisis in the Euro area. This fragmentation has now been reversed in terms of prices (bond yields) but not yet in terms of quantities (capital flows). Intra-euro area financial flows have decreased considerably after the crisis and the trend has not yet fully reversed, in spite of the ongoing economic recovery. Under President Trump, the US has been hardening its positions and shown signs of disengagement in the G7, G20 and the WTO. The US has also abandoned the UN Paris Agreement on Climate Change and embraced protectionist trade measures that do not tackle the root causes of the market distortions. The increase in income inequality at the global level points to what some call global social fragmentation, but hides important differences across countries. In emerging economies, inequalities are higher but they have slowly been reduced over the past 30 years. Conversely, income inequality has increased in advanced EU economies and the US (Fig. 5).

In summary, twenty years into the existence of the euro, three decades after the fall of the iron curtain, and with a six decades long perspective on the Treaty of Rome, the EU has achieved an unprecedented degree of political and economic integration establishing an area of peace and prosperity for its citizens. From a bird's eye perspective, the EU came together in a Europe broken beyond description by war; and despite its fair share of set-backs and shortcomings, it has shaped the continent, contributing to more human flourishing, and more social care than at any time in European history. With its institutions that enable Europeans to work together and understand both its differences and its communalities, the EU should be well-equipped to live up to the challenges ahead in a positive manner. However, the EU is presently facing a strong undercurrent opposing further integration, a creeping tendency towards disintegration, and a growing inclination towards zero-sum policies that run the risk of self-fulfilling outcomes, economic stagnation and,

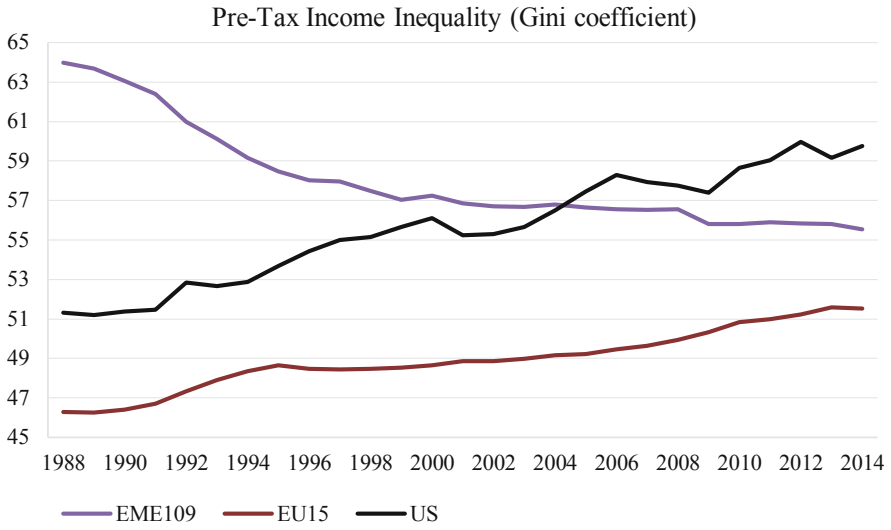

Fig. 5 Income inequality. Source: World Income Database and Bruegel Database

perhaps most importantly, the erosion of liberal democracy. It will require the joint efforts and political determination of all those who desire an open, liberal, and inclusive order to shape a Europe that picks the high road into the future.

2 Charting the Future Challenges and Policy Responses

2.1 The Defining Challenges Ahead

The medium-term structural challenges facing our societies, which were already visible before the crisis, have not gone away. Now that the immediate urgency of the crisis has passed, it is time to prepare for medium-term challenges. These include both the continuation of those shifts that are already underway in the interconnected world economy; and whatever new technological, societal, geo-economic and demographic shifts that will arise over the next decade. The challenges are numerous. External and internal security is clearly essential for overall peace and stability and is clearly a common public good for Europe's citizens. Preserving a rules-based international economic order is therefore of paramount importance and is indeed the only way to effectively address the fundamental challenges posed by climate change and migration. Macroeconomic stability is an obvious precondition for sustainable growth, safeguarding against the risk of systemic crises through sound policies and stabilisation instruments that are compatible with long-term sustainability. Achieving a more inclusive pattern of growth by better matching efficiency with fairness is indispensable as well, because the growth process cannot enjoy sustained democratic

support if its benefits—including those arising from rapid technological progress—are not shared widely enough, including between generations. In the same vein, the EU's internal convergence in living standards and regional cohesion need to be reignited to address the undercurrent of slow-burning disintegration.

It is more than likely that the international economic order will see new threats of fragmentation over the coming years. International economic governance is increasingly fractioned, marked by the gradual disengagement of the US, which is turning into a case-by-case disruptor with respect to e.g. trade protectionism, climate change negation, financial regulation and other isolationist policy choices. On the other hand, new global players are emerging. An increasingly knowledge-powered China is rapidly moving up the value-added scale but without a clear commitment to a liberal and rules-based order. Emerging economies are rising fast and could become important EU allies in the future. New institutions such as multilateral development banks and the emergence of stronger regional financing arrangements are moving to the centre of the global stage. For all of these reasons, preservation of the current status quo in the international global order is not on the cards and an evolution of the international geometry to re-anchor global stability seems inevitable in the years to come. A multilateral, rules-based system is a global public good and simply putting international cooperation in reverse would imply a foregoing of its beneficial sides and entry into dangerous zero-sum terrain. Common economic policy challenges remain, such as demographics and migration, climate change, the protracted slowdown of productivity in advanced economies and widening inequalities that nourish disenchantment with the international division of labour. While these challenges have deep economic implications, they intersect strongly with identitarian concerns and populist forces, making it harder to provide the answers with traditional economic policy steps.

The effectiveness of the international order will also determine how the fundamental challenge of climate change, pollution and environmental degradation is tackled. The impact of man-made climate change is very fundamental and affects the basis of our life and economy. Research on future scenarios predict climate change will have a dramatic effect with knock-on effects for many communities and sectors that depend on natural resources, including agriculture, fisheries, energy, tourism and water, and could lead to migratory pressures. Addressing climate change and environmental degradation will be pressing work both internationally and at home. Fighting climate change requires action from all countries across the world. Transition to a low-carbon society is feasible, but requires innovation and investment. To make the transition, the EU would need to invest an additional €270 billion (or on average 1.5% of its GDP annually) over the next four decades, but derived benefits for Europe's economy would accrue thanks to the development of clean technologies and low- or zero-carbon energy, spurring growth and jobs (European Commission 2011). It will make the EU less dependent on expensive imports of oil and gas, and it will bring other benefits, e.g. to health through reduced air pollution and to the drag on scarce resources like energy, raw materials, land and water.

Managing migration flows from outside the EU and the economic and societal integration of people with diverse backgrounds is likely to remain a major challenge.

The economic policy strategy at national and EU level should face up to the challenges that continued migration flows are likely to pose. The short-term economic and fiscal impacts of migration are not unmanageable. However, the strategic challenge lies elsewhere. Migration flows are likely to pose longer-term challenges to labour market policies and social and education systems. Public finances will be in the receiving end: putting in place policies that lead to labour market integration will determine the impact on the long-term sustainability of public finances. Moreover, poisonous dynamics have eaten into the political trust among Member States and imply a tangible risk of a gradual disintegration of the free movement of people within the Schengen area, which is an economic cornerstone of the internal market. And arguably, better managing migration will be a prerequisite for the necessary political consensus and citizens' acceptance of carrying forward difficult reforms that are needed to modernise our economies.

Europe will need to nurture the development and diffusion of new technologies in an inclusive manner. The important task for Europe, as for all advanced economies, is to create useful new ideas and innovation. Achieving this will require not just a flourishing environment for bright people, but also well-designed property rights and government support for fundamental science and breakthrough technologies. They will reshape the way we live and, in particular, the way we work. Indeed, developed countries may be on the verge of very disruptive technological change. Robotics and machine learning have improved productivity and artificial intelligence is advancing into finance, transportation, defence, and energy management. The Internet of Things is facilitated by high-speed networks and remote sensors to connect people and businesses. In all of this, there is a possibility of a new era that could improve the lives of many people.

Yet amid these promises, rapidly changing technology will have an impact on the world of work, as skill-biased technological change and a widening digital-robotic divide create challenges for work force participation. Further increasing the varieties of work and careers offer clear upsides for the individual and society, but more choices could also result in greater job insecurity/economic precariat for individuals, and put strains on existing welfare systems. Researchers at the OECD focused on "tasks" as opposed to "jobs" and estimated that 14% of jobs are highly automatable and another 32 have a significant risk of automation. Although these job loss estimates are below those of other experts, the OECD concluded that "low qualified workers are likely to bear the brunt of the adjustment costs as the automatibility of their jobs is higher compared to highly qualified workers" (OECD 2018). While some dispute the dire predictions by arguing that new positions will be created that offset the job losses, the risk of significant workforce disruptions should be taken seriously. This includes the risk of job polarisation, where technology could lead to higher demand in well-paid skilled jobs and low-paid less-skilled jobs, but lower demand in medium-pay, medium skilled jobs. This 'hollowing out' of typical middle-class jobs could narrow the basis for financing the welfare state.

Reigniting sustained convergence of economic and social performance across the EU requires greater emphasis on investment in people and ideas as a key element to achieve a more inclusive pattern of growth. This requires structural reforms to

modernise our economies, break the trend of a protracted decline in productivity and make them more resilient. Numerous reforms have been carried through to boost long-term growth and job creation and to protect our citizens and businesses from new economic setbacks. In the light of demographic and technological changes, the agenda is both well diagnosed and unfinished (Pathways for Prosperity Commission 2018). A proper structural reform agenda includes paying attention to the social impact of reforms. This will be no less demanding in the years ahead, since the welfare state is set to remain under pressure. Reforms so far are not sufficient to ensure the sustainability of health care and pension systems in view of the impact of demographic ageing and in a number of Member States, earlier reforms are being called into question. Sharing the benefits of growth is at the heart of Europe's economic model, and a stronger capacity to grow goes hand-in-hand with a Europe that provides opportunity and protects by investing in people and ideas and adapting markets and institutions in a way that secures inclusive growth. Promoting growth-enhancing structural reforms remains a major priority. There is a continued need to facilitate high quality investment in physical and human capital. Investment also needs to be supported by reforms that improve the business environment, strengthen the quality of public administration, address sector-specific bottlenecks (e.g. in relation to financing), and that address obstacles specific to investment in intangible assets. But the role of the state in how it funds investment should also be rethought. The dominant model of private sector ingenuity funded through market mechanisms—with the help of subsidies where deemed desirable—neglects the important benefit that a new long-term industrial policy could yield in terms of creating lasting conditions for the development of strong innovative industries and products. A long-term perspective, with active state participation, would also mean benefits as well as costs coming back to the public sector, and social issues replacing short-term economic benefit as a critical decider in what is funded. In parallel, developing the capacity to grow means fostering investment in human capital and ideas, prioritising education and training, fostering innovation systems, strengthening activation and inclusion policies, and rethinking tax-benefit systems. Future technological progress underscores the need for determined policy action in time, both to equip the younger cohorts to take advantage of new opportunities and to mitigate the risks of a stronger stratification along social and demographic characteristics.

The international and European political outlook has become more uncertain, and policy space appears reduced. For the sake of the present analysis, we stake out the political environment with a number of assumptions. Among the policy forces set to shape the next few years are the implementation of Brexit and the prevalence of inward-looking policies. (1) We assume that Brexit will be non-disruptive. It is set to have costs as the existing economic integration between the UK and the EU27 is partly unwound, but the process is assumed to be managed in a smooth way. (2) It is likely that at least one further Member State will adopt the euro within the mandate of the next Commission. (3) In light of economic, demographic and political trends in Europe's neighbourhood, we assume migration pressure to remain constantly high. (4) We assume inward-looking and myopic ('populist') policies to maintain their attraction over the coming years in the EU and internationally. The domestic

and short-term orientation of policies is assumed to weaken world trade, the multilateral structure of global economic governance as well as policy-makers' will and ability to invest political capital into cooperative solutions in the EU (e.g. on migration policy, EMU deepening, the EU's long-term budget or even the implementation of the Stability and Growth Pact).

2.2 An Economic Policy Perspective for the Next 5 Years

On current trends, the central economic policy scenario for the coming years is less glowing than one would hope. Although a revitalisation of the Franco-German alliance gives hope, it is unlikely that this will be sufficient to overcome deeply entrenched differences. In terms of the institutional architecture, the "carrying on" scenario as outlined in the Commission's White Paper may well apply in 2025 (European Commission 2017a). This would mean largely incremental improvements in the functioning of the Single Market and of the Euro area, with a capacity to deliver that does not match expectations, and decision-making processes that remain complex to grasp. While Member States have committed to taking important institutional steps such as completing the Banking Union, there is strong resistance to follow through. Moreover, even an ambitious Franco-German agreement may not be enough to break the "identitarian" divide between West and East and the responsibility/solidarity divide between North and South. Without a decisive breakthrough Europe's economic policy making would remain trapped in the "ultima ratio" syndrome, postponing critical choices until they become inescapable under the pressure of the markets.

In setting out its vision for 2025, the Union needs to provide a coherent answer to its raison d'être: *what is the Union for?* Where in previous decades the European policy agenda has been propelled along by big projects, such as the Single Market, the adoption of the euro or enlargement to Central and Eastern Europe, there is no comparable engine of momentum at present. It is also not likely that another such top-down project can or should emerge: the days when leaders forged ahead with grand plans, aiming to pull the electorate behind, are not in vogue. Instead, the EU leaders have given preference to an approach that aims to forge progress through tangible projects in policy areas that address the real concerns of citizens and that makes clear the distinctions between what the EU can do, and what Member States should do, in order to make sure that promises are delivered. This vision—seen by some as pragmatic and by others as lacking in ambition—develops around the core principle that 27 Member States can deliver more together for their citizens than separately when addressing challenges that affect all Member States in a globalised world. This is the way in which sovereignty—economic and political—can be exercised today at the European level and in a global context.

Together with the nation state, the EU is accountable to citizens for creating the conditions that enable them to live meaningful lives, to protect them from threats and to provide their children with the opportunities to make the most of their abilities. In

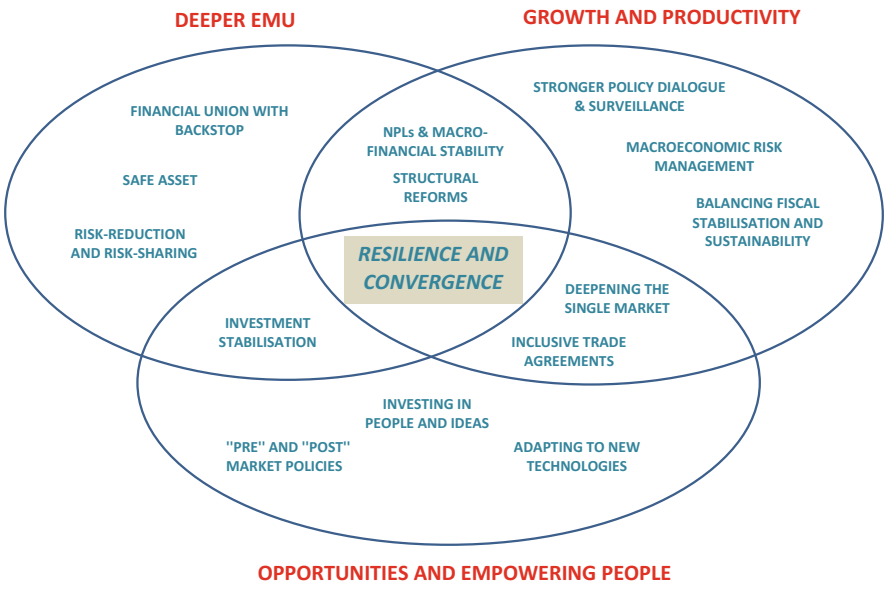

Fig. 6 What is the Union for—an economic policy perspective

order for the EU to do this, it should be willing to focus on areas that have a direct (as opposed to indirect) impact on people's lives, and approach policies holistically. For example, it is no longer sufficient to simply promote 'open trade' or 'technological progress' and treat the attendant downsides for some groups and regions as none of the Union's business. For this reason, charting a way forward for a Union that provides opportunities and empowers people is a key priority. By the same token, the Union should continue to centre its policy agenda until 2025 on addressing citizens' concerns about their future economic prosperity, what type of jobs and remuneration they will have, and how to maintain economic stability at times of rapid change. Furthermore, in designing and executing the necessary policies, it should be clear why common action at the Union level is considered, for example making it tangible why and in what ways a deeper EMU is indispensable to make the economy resilient. It is on the basis of these three axes of economic policy priorities that the EU's ability to support the resilience of its economy and the convergence in living standards will be determined (Fig. 6).

The fact that the world is more interconnected than it has ever been is an essential framework condition for the EU's economic policy priorities. It is neither possible to address important global challenges in an isolated manner nor to rely on the status quo of international economic governance. Globalisation and integration across borders has led to great overall benefits in terms of economic growth, and has also led to increased spillovers between countries and regions. The rise of technology has added to this effect—we are now closer and more interdependent than ever before. The effects of this new proximity are not just economic. An increasing number of

Fig. 7 Reconstructing global governance

policy challenges require solutions across borders, if they are to be effective. With further rapid changes ahead—from robotisation and the application of new technologies—it will be important that the EU provides the means and tools for its Member States to confront common challenges together. Institutionally speaking, this means making global institutions work more effectively together. In particular, the Bretton Woods Institutions need to update their business models. For example, the multilateral development banks need to work together more as a system. There is a need to integrate the new institutions that have been created since the crisis and more concrete cooperation is necessary between MDBs. The G20 should provide leadership and strategic direction to the system of MDBs (Fig. 7).

The rising appeal of populism is testament to many citizens' feeling that the topics that are important to them are not reflected in the mainstream political discourse. Focusing on the topics that drive these political movements should be a priority. Actions by this Commission show that, by addressing the source of popular frustration, the EU can not only make a difference but can turn populist energies into positive political momentum, e.g. LuxLeaks and tax avoidance by multinational technology groups contributing to a renewed drive in tax cooperation. Over the next

few years, the EU should develop strong economic policies to deal with areas where corporate or elite interests may not have been sufficiently subject to checks and balances, and where joint action is needed for meaningful breakthroughs. The Commission should also not shy away from addressing the more challenging issues associated with anti-establishment movements, difficult though they may be. The thorniest issue going forward may be the challenge posed by migratory pressures from third countries. The challenge of delivering a single migration policy should not be neglected out of fear of rocking the boat because policy action at national and EU will shape the longer-term economic repercussions. This includes protecting the EU's borders, fighting illegal immigration and continuing to build partnerships with neighbourhood countries, which can help to contain refugee and immigration inflows into the EU. At the same time, developing a better system of controlled immigration inflows, not least to attract bright talents from abroad, and combatting educational and spatial segregation of those that have come to Europe is likely to be a defining challenge.

In order to regain its legitimacy the EU can no longer content itself with policies solely concerning the market; it must stand ready to address "pre" and "post" market policies. Member States have traditionally been seen bearing the sole responsibility for policies relating to inequality and the welfare state. The EU is identified with the market dimension of policymaking and rarely with providing opportunities (pre-market) or evening out inequalities (post-market). It is untenable for the EU to be seen purely as an agent of globalisation and there are cases when it is demonstrably more effective to act at the Union level, e.g. in areas of labour market and social policies that have a direct bearing on the functioning of the Single Market. Taking a stronger role in the pre-market and post-market dimensions requires a clearer voice in identifying the policies that are needed, in tandem with taking the debate about which level of policymaking should be empowered to act and the means that are commensurate with the role that Europe can play. The EU should no longer shy away from taking a role in tackling inequality and addressing the completeness of the protection offered by welfare state. These are issues that matter to people at their core, and that are needed to support ongoing economic success (Buti and Pichelmann 2017) (Fig. 8).

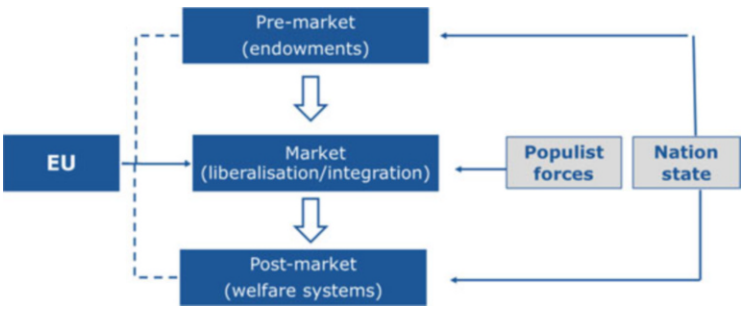

Fig. 8 Pre-market, market and post-market policies in the EU and Member States

PRIORITY AREA	SETS OF ACTION
Fostering investment in people and ideas	• Strengthen activation and inclusion policies offering lifelong training and re-employment services • Prioritise education and training, including early childhood intervention; reduce drop-outs • Foster innovation systems, R&D and the smooth diffusion of technological progress • Ensure universal and fair access to health care
Adjustment and adaptability for inclusive growth	• Strengthen industrial relations and collective bargaining structures internalising negative external effects and promoting work-place productivity • Embrace open markets and the reallocation of factors of production towards its most productive use • Support adaptation and address displacement costs related to globalisations and technological change • Tackle labour market segmentation, establish better social protection for non-standard employment
More efficient and inclusive tax-benefit system	• Establish/optimise inclusive minimum income schemes • Use tax policy to impact market income distribution : shift taxation away from labour, broaden tax bases, increase the progressivity of taxation structures • Optimise tax incentives for labour market participation and productivity growth • Ensure fair and sustainable person systems in view of a changing world of work

Fig. 9 Inclusive growth—reloading Europe's prosperity model

Far-reaching change will be required in the pre-market, the market, and the post-market to ensure fair opportunities for all. Fostering investment in people and ideas, ensuring adjustment and adaptability for inclusive growth, and making EU social models future-proof by moving towards more efficient and inclusive taxation structures and benefit systems will be essential. In particular, given new spending requirements in a number of areas, such as environmental protection and security and defence, a re-think of the way public revenues are generated may be required. An indicative list of possible sets of actions is given in Fig. 9. The EU has a potential role in the various areas, including in some cases by developing direct delivery modes to the citizens.

The economic context is now one of growth, but it will be necessary to set the right conditions for growth to be sustained over the medium term. Economic growth is currently strong, but the good times may only last longer, their benefits spread wider and the trend lines improve, if measures to sustain them are put in place in time. This will require the tackling of long-standing challenges, which are well-diagnosed in the European Semester both for the EU as a whole, the euro area and individual Member States. Some of these economic priorities were clear before the crisis, such as population ageing, which is weighing on growth and social security systems. Others have emerged in the last 10 years, not least the intertwined priorities of reigniting a sustained convergence of economic and social performances across countries and enhancing the resilience of Member States and the EU economy.

Structural reforms to strengthen economic resilience act on the institutional and economic environment to make it better able to weather economic shocks. Economic resilience refers to the ability of an economy to withstand a shock and recover quickly after it falls into an economic downturn. There are three main aspects of resilience: vulnerability (whether and how strongly a given shock hits the economy); absorption capacity (the ability of an economy to cushion the direct impact of a shock, minimizing immediate output and job losses); and recovery (the ability to return to the previous status or to ensure the reallocation of productive resources). Depending on their nature, *vulnerabilities* can be tackled by dedicated actions or they may need to be tackled by a more comprehensive change in the way the economy functions through structural reforms. For example, an imbalance requiring a structural reform is wage distortions (reform of the labour market). The *absorption capacity* of an economy is determined by short-term market as well as public actions. An economy will absorb shocks better if, for example, its financial markets are diversified enough to automatically spread risks or if its labour market automatically adjusts labour costs. They are, however, possible only if the right structural reforms were undertaken early enough. If an economy has in place the right structures and policies to tackle its sources of vulnerability, it would be able to absorb a shock relatively smoothly. However, it may still not be able to return to *recover* to its previous status quo in terms of productivity, employment and general welfare. If an economic shock structurally changes the characteristics of markets, the economy may need to readjust its productive resources in a different way from its previous status quo in order to be able to recover (Fig. 10).

As a matter of macroeconomic risk management, steps to reduce the likelihood and impact of bad events should be seen as precautionary. It is very unlikely that the current expansion will endure for the entire length of the next Commission without at least a cyclical downturn. Another euro area crisis or a crisis of the EU can also not be excluded. Reducing the potential impact of such events requires—in addition to structural reforms—a range of actions including the early restoration of fiscal and monetary room for manoeuvre. At first glance, the situation of public finances in the EU and the euro area appears favourable. In aggregate terms, public deficits decreased by around half a percentage point of GDP in 2017, to 1.0% of GDP compared to a peak of 6.6% of GDP in 2009. That said, the continuing reduction of public deficits in 2017 is largely attributable to the improvement of cyclical

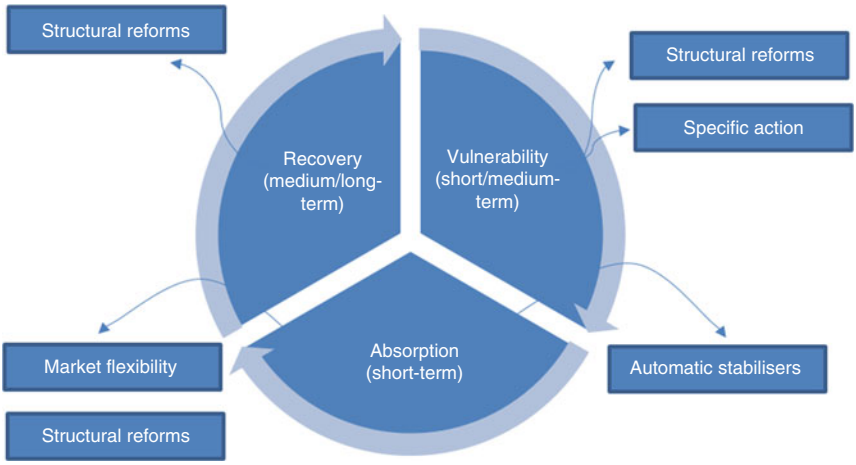

Fig. 10 Economic resilience and structural reforms

conditions and lower interest rates and the picture varies significantly across Member States. On the one hand, a majority of Member States posted an improvement in their structural balances. On the other hand, a number of Member States saw a non-negligible deterioration of their structural positions. Over the medium term, fiscal sustainability risks remain elevated in a number of Member States. Based on the Commission's debt sustainability analysis, high sustainability risks were identified in seven countries, and medium sustainability risks were found in another five. Medium-term debt projections show that if Member States' fiscal plans are fully implemented, additional fiscal consolidation measures totalling close to 0.3 percentage points of GDP in the EU would still be needed over the next 5 years to bring the debt-to-GDP ratio down to 60% by 2032. However, in a number of Member States, the additional measures needed would be much more significant and the current economic expansion is an opportunity to reduce excessive levels of debt and re-build fiscal buffers to be able to tackle possible future shocks. This notably concerns some large euro area Member States that face sustainability challenges due to their excessive levels of public debt or implicit liabilities related to population ageing.

We should draw the lesson of how weak resilience has had significant and persistent effects on income and employment and have hampered the convergence process. Real convergence of living standards and income levels is central to achieving the Union's objectives of economic and social cohesion and full employment. In the first 10 years of the EMU, significant growth in real income occurred and euro area members that initially had lower living standards caught up in terms of GDP per capita. This was adversely affected by the crisis that started in 2008. The situation has improved in the recent years, though only very moderately. Unemployment rates also became more even across the euro area before the crisis hit, but showed stronger differences after the crisis. Since 2013, unemployment rates have again started to become more similar but they still vary far more than they did before

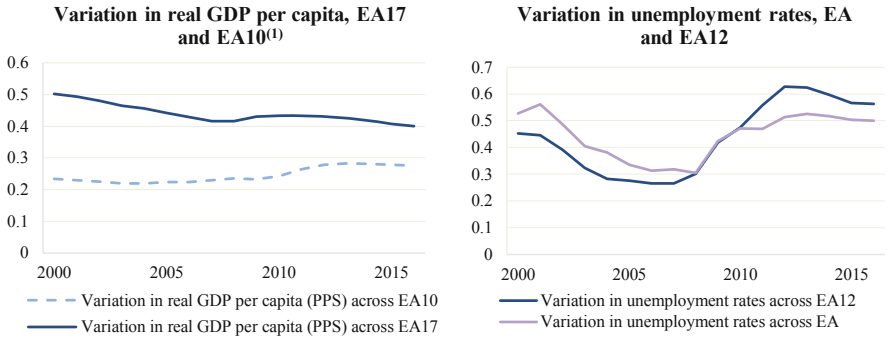

Fig. 11 Variation in real income and unemployment (degree of convergence). *Notes* (1) Figures excluding IE and LU. Source Based on data from the AMECO database of the European Commission

the crisis. The differences in economic structures help to explain these developments in real convergence. Those parts of the euro area with more efficient product and labour markets fared better throughout the crisis. Convergence towards resilient economic structures is needed to support real convergence and make it sustainable over time. The concept of social resilience is also particularly important to strengthen the resilience of an economy. Structural reforms are also crucial in this respect, e.g. those related to human capital, education, skills, but also to the development of innovative employment and social protection systems that combine flexibility and security (Fig. 11).

The promotion of sound policies does not lessen the need to complete the architecture of the EMU, which is overdue and necessary to secure its coherence and stability (European Commission 2017b). As part of a strategy compounding risk sharing and risk reduction (e.g. NPLs), the restoration of fiscal policy buffers at Member State level should be complemented by the set-up of a central fiscal stabilisation capacity aimed at absorbing large shocks. The persistent divide over the completion of the banking union—hopefully now in the process of attenuating with the joint declaration of France and Germany—shows that 20 years after irrevocably fixing national exchange rates, euro area countries still hold radically different views on the basic conditions for a well-functioning EMU. Many of the flagship achievements of previous decades, from the Single Market, to the common currency, to border policy have been left incomplete, leaving them vulnerable to crises.

Restoring the stability of the EMU requires, as a first order priority, the establishment of a backstop for the Single Resolution Fund and a meaningful stabilisation function. The proposals presented for the EU's next long-term budget, based on a vision of how budgetary functions essential for the euro area and the EU could be developed within the framework of the EU's public finances, and the ongoing work on a backstop for the Banking Union through the EMF/ESM, are key to the success of EMU. As further priorities, the development of an EU 'treasury' in the broad

Table 1 Completing the banking union

COMPLETING THE BANKING UNION

MEASURE	DESCRIPTION	European Commission	European Parliament	Council of the European Union
European Deposit Insurance Scheme (EDIS)	The proposal would further strengthen the protection of bank depositors across the Banking Union	●	●	●
November 2016 Banking Package	Reinforcing the banking Single Rulebook with further risk-reducing measures and rules to foster banks' infrastructure investment	●	●	●
A backstop for the Banking Union	Making the agreed backstop for the Single Resolution Fund part of the future European Monetary Fund	●	●	●
Further **reduction of non-performing loans** on EU banks' balance sheets	Package of initiatives to further reduce non-performing loans, complementing previous actions	●	●	●

● PRESENTED/AGREED
● AGREEMENT POSSIBLE BY MAY 2019 IF THERE IS STRONG POLITICAL COMMITMENT FROM ALL EU INSTITUTIONS

sense, a safe asset, and a European Deposit Insurance Scheme are central. Many of these initiatives have governance and institutional ramifications, which are important to consider in reshaping the EU's economic and budgetary surveillance. Reviewing the system of economic and budgetary surveillance, including the interaction between various surveillance instruments and the effectiveness of their application, naturally complement the process of deepening the EMU (Table 1).

3 Concluding Remarks

In summary, the EU has the potential to become a more dynamic and resilient economy by 2025. As depicted, big challenges will have to be navigated over the coming years during which the economic outlook appears uncertain. Failure to address the issues face on and in a co-operative manner at multilateral, regional or bilateral level could give rise to zero-sum policies and nourish a dystopian vision of a fragmented and stagnating Europe. Such a Europe would be plagued by external and internal conflict, featuring walls at its external borders and tightly secured internal borders, and with stratified populations living back-to-back and vulnerable to prejudice and populism. But a better Europe is possible. Its people and its institutions have what it takes to take the high road into the future, staying united in diversity, and charging the transformation towards a more inclusive, resilient and environmentally-friendly economic system. But such success will have to be earned, not least by putting in place the right policies with the main axes being those illustrated in Fig. 6, pointing to the key policy areas that the EU should prioritise. These are all closely interconnected. It is by facing up to the challenges in all areas—for some actions at the EU level and for others at the national level—that the pay-off

in terms of stronger resilience and convergence will materialise, restoring Europe's prosperity triangle comprised of stability, productivity and fairness.

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East Versus West on the European Populism Scale

Raicho Bojilov, Jonas A. Gunnarsson, and Gylfi Zoega

Abstract We study a sample of individuals in 24 European countries that includes nine Eastern European countries in order to identify whether these countries differ from their Western counterparts as regards popularity of populist right-wing parties once we have controlled for personal attributes. The results show that there is variation among the Eastern European countries but that, as a whole, they are not distinct from Western Europe. However, there is greater support of populist right-wing parties in Hungary and Poland once account is taken of personal attributes and we discuss some possible reasons for this observation. When it comes to personal identities, we find that a right-wing identity, a negative view of immigrants, dissatisfaction with democracy, a negative view of homosexuality, and mistrust in both national and European parliaments seem to correlate heavily with voting for a populist right-wing party in Europe. Moreover, men are more likely to vote for a populist right-wing party, as are the old and the less educated.

Keywords Populist right-wing parties · Values · Country effects

JEL Classification P16 · Z18

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1 Introduction

The aim of this paper is to use individual-level survey data to describe broad patterns and regularities in political attitudes towards right-wing populism, defined as the electoral success of populist right-wing (*PRW*) parties in the European Economic Area (*EEA*) between 2002 and 2016.[1] We focus on personal values, economic factors, and country of residence. We include nine Eastern European countries and explore whether they differ fundamentally from the Western European ones. Our main empirical question is whether, because of their communist heritage, the Eastern European nations are distinct as regards voting for populist right-wing parties.

We control for several individual characteristics. We focus on trust in domestic and EU institutions because lack of trust has been found to be correlated with voting for populist parties (see Dustmann et al. 2016), placement on the left/right scale, and satisfaction with democracy as representing confidence in the political establishment. Attitudes towards homosexuals and immigrants and religiosity measure traditional values. We include two economic factors: placement in the income distribution and whether the individual has ever been unemployed for 3 months or more. Finally, we include belonging to a minority group, level of education, gender, and age. Country dummy variables capture factors that remain to be explained. The main objective of the paper is to compare the country dummy variables between individual Eastern European nations, on the one hand, and between Eastern European nations and Western European ones, on the other hand, in order to determine whether there are significant differences between Eastern and Western Europe.

The main innovation of the paper over those surveyed in the following section is the inclusion of Eastern European nations—nations that turn out to be quite diverse in their propensity to vote for populist parties. The attitudes and voting patterns of these nations are important for decision-making within the European Union (EU), and it is of some interest to see whether they share a populist sentiment that could disrupt the operations of the EU. These nations share the experience of having had communist societies involving central planning, absence of democracy, and limited human rights in the form of freedom of expression and freedom of movement. They may also have enjoyed more economic security because unemployment did not exist and education and health care were free of charge in the communist states. This shared history may make these nations more or less prone to vote for populist right-wing parties, which then affects collective decision making at the EU level.

[1]The European Economic Area includes the member states of the European Union, as well as Norway, Iceland, and Lichtenstein. The latter must abide by the rules of the single market but cannot participate in making these rules. Moreover, they are not a part of the monetary union or the Common Agricultural Policy.

2 Literature

The Brexit referendum in the UK in June 2016 and the election of Donald Trump as president of the US have generated intense interest in the reasons for the success of populist politicians and parties. Below we give a brief overview of some recent contributions.

2.1 Populism and Its Causes

According to the political scientist Cas Mudde (see Mudde 2016), populist parties tend to challenge prevailing elites and institutions such as the media, universities, mainstream political parties, and international organisations.[2] Populists also tend to share a tendency to claim to represent the "people" against the prevailing authorities and institutions and "outsiders"—such as foreign countries, immigrants, or minority groups—and to be led by charismatic leaders. They share nativist policies directed at different outside groups, such as illegal Mexican immigrants in the US, Americans in Venezuela, or immigrants from Europe in the UK.

We are interested in exploring to what extent economic and cultural factors may fuel the emergence of populist parties, particularly to include the lingering effects of a communist past. Inglehart and Norris (2016) propose two explanations for the rise of populism. The first is based on economic factors that create insecurity, such as international trade. The other is based on opposition to progressive or socio-liberal values, such as feminism and environmentalism. They use the 2014 Chapel Hill Expert Survey to identify the ideological location of 268 political parties in 31 countries—the EU member states and Norway, Switzerland, and Turkey—and use the *European Social Survey* (ESS) from 2002 to 2014 to test whether it is economic insecurity or cultural factors that predict voting for populist parties. They control for gender, age and education, experience of unemployment, measures of feeling of income security, and values that were meant to separate populist and liberal values. Their regression model pools responses to the ESS conducted between 2002 and 2014 in order to test the two hypotheses, and it finds more evidence for the cultural hypothesis. This leads us to believe that past economic systems may have a long-lasting effect on values and attitudes in a country.[3]

[2]For a review of the literature on populism, see Mudde and Katwesser (2017).

[3]However, in a more recent paper, Guiso et al. (2017) argue that Ingelhart and Norris fail to take into account the decision by voters to abstain from voting rather than voting for populist parties. They find that governments' inability to guarantee security has shaken confidence in traditional political parties and institutions, increasing fear beyond that already created by trade and migration.

2.2 Values and Trust as a State Variable

Inglehart and Baker (2000) use data from three waves of the *World Values Survey*, including 65 countries and 75% of the world's population. They find evidence for economic development as a factor affecting cultural values, as well as some persistence of distinctive cultural traditions. Economic development is found to be associated with shifts from absolute norms and values to values that are more rational, tolerant, trusting, and participatory. This supports what in sociology is called the modernization theory.[4] Not only do cultural values respond to economic development, however; they are persistent, so that the cultural heritage of a society—be it in the form of a religion or an economic system—leaves an imprint on values, which endure in spite of increased economic development. These cross-country differences—that is, cross-cultural differences—are transmitted from one generation to the next through schools and the media. Voigtländer and Voth (2015) demonstrated that stronger anti-Semitic beliefs among Germans who grew up with racial propaganda under the Nazi regime were still prevalent more than 50 years after the end of the Second World War. Inglehart and Baker mention the emergence of fundamentalist Islam as an example of the persistence of cultural heritage in spite of economic development. Another example is given by Fukuyama (1995), who argued that societies suffering from low levels of trust are at a competitive disadvantage in global markets because of difficulties in developing large, complex institutions such as corporations.

2.3 The Lingering Effects of Communism

Communism may have a lingering effect on values and attitudes. According to Inglehart and Baker (2000), the former communist societies have more traditional values than protestant European Union nations, with the latter leaning away from traditional values and towards self-expression values. They also find that the Catholic societies of Eastern Europe form a sub-cluster of the Catholic world between Western European Catholic societies and Orthodox societies. The collapse of communism in the early 1990s brought about changes. Following German unification and the fall of the Soviet Union, both the former West Germany and the former East Germany experienced a shift towards rational values and an emphasis on self-expression and away from traditional values. Another example mentioned by Inglehart and Baker is that East Germany is much closer to the ex-communist countries of the Czech Republic and the Baltic States than West Germany in terms of "traditional/secular" versus "self-expression" values. Thus the cultural heritage of a country appears to matter—in this case, their communist past.

[4] See Bell (1973, 1976).

2.4 Populism and Trade

Economic shocks, trade, and crises have an effect on political developments. There is a rapidly growing literature on the effect of trade on values, particularly to include the vote for populist parties. Clearly, a populist party that is nativist and anti-establishment may oppose free trade, as recent examples show. The negative income and employment effects of trade may affect subgroups of the labour force, as is demonstrated in a rapidly growing literature that shows how international trade is having a negative effect on local economies. Pessoa (2014) finds that UK workers in industries that became exposed to Chinese import competition earned significantly less over the period 2000–2007 because of fewer years of employment and lower hourly earnings while employed. The economic effects of import competition can also have political effects by creating protectionist sentiments and can increase the share of voters who choose populist parties. Dippel et al. (2015) find that trade integration with China and Eastern Europe affected voting in Germany from 1987 to 2009. The share of voters who favoured extreme-right parties responds significantly to trade integration as measured by changes in manufacturing employment. Curtice (2016) studies public attitudes to the European Union in Britain and finds that voters are concerned about the cultural consequences of EU membership but are inclined to consider membership economically beneficial. In a study of voting patterns in Western Europe, Colantone and Stanig (2016) find that voters in areas more exposed to competition from Chinese imports tend to vote in a more protectionist and nationalist direction.

2.5 Populism and Economic Cycles

Yann et al. (2017) find a relationship between increases in unemployment and voting for populist parties. Moreover, they find a correlation between the increase in unemployment and a decline in trust in national and European political institutions. Overall, these authors find that crisis-driven economic insecurity is a driver of populism and political distrust. Frieden (2016) uses data from Eurobarometer surveys since 2004 to explore changes in attitudes before and after the recent crisis. He found that the crisis reduced trust in both national governments and the EU. He also found that less educated and less skilled citizens, along with the unemployed, are particularly lacking in trust and that those in the southern periphery—the debtor nations—are uniformly disappointed with their national political institutions. The UK is again an outlier in terms of lack of trust towards the EU. In another recent paper, Foster and Frieden (2017) analyse individuals' responses in Eurobarometer surveys conducted from 2004 to 2015 in order to study the reasons for changes in trust during the recent financial crisis. The authors confirm the results of previous studies: that the better educated have the highest levels of trust in both their national governments and the EU, while those with lower levels of skills and education have

less trust. Economic variables such as unemployment help explain the variation in trust among Europeans over time and across countries.

In a recent paper, Dustmann et al. (2017) find that growth in GDP per capita increases support for European integration and enhances trust in both European and national parliaments, while an increase in the unemployment rate has a negative effect on these same variables. The economic situation matters more in regions where people have traditional and autocratic values. If political populism is associated with less trust in parliamentary institutions and more Euroscepticism, then adverse macroeconomic shocks tend to increase the demand for populist political parties. The authors find that the effect of macroeconomic shocks is almost twice as large on trust towards national parliaments as it is on trust towards the European parliament. In essence, then, citizens mainly blame national politicians for adverse economic conditions. These authors conclude that anti-EU sentiment is more sensitive to national identity and personal attributes than to economic factors, so that economic growth will not fully restore support for the European Union. Once again, in this study the UK is clearly an outlier in terms of lack of trust towards the EU and diminishing trust in recent years.

2.6 Populism and Financial Crises

Financial crises tend to reduce trust in societies and have a stronger impact on voters than ordinary recessions. Hence it is possible that financial crises also erode trust in domestic institutions, political parties, and international institutions. Funke et al. (2016) study election data for 20 developed economies going back to 1870. They find that polarization rises following financial crises and that voters seem to move towards populist right-wing parties. Hernandez and Kriesi (2016) reach similar conclusions in their study of election outcomes in 30 European countries in three elections: two immediately preceding the latest crisis and one immediately following it. They find that falling output, increased unemployment, and increased debt resulted in losses for incumbent parties in Western Europe, but less so in Central and Eastern Europe. Moreover, Funke and Trebesch (2017) compared the 2008 financial crisis to other European financial crises in the late 1980s and early 1990s and found a similar pattern of a surge in populist right-wing party vote shares in national elections. Another study was done by Bartels (2014), who found, in a sample of 42 elections in 28 OECD countries before and after the Great Recession, that 1% growth of GDP increased the voting share of the incumbent party by 1.2%.

2.7 Populism and the Welfare State

The emergence of populism in the wake of economic recessions and financial crises may be prevented by the creation of a welfare state. Swank and Betz (2003) analysed

national elections in 16 European countries from 1981 to 1988 and found that a welfare state weakens the link between international trade and immigration, on the one hand, and support for the populist right, on the other hand. Mayda et al. (2007) found that in small countries with higher levels of government expenditures, the population tends to be less risk-averse with respect to international trade. Finally, Rodrik (1998) argued that, because governments can reduce aggregate risk through redistribution and stable provision of publicly provided goods and services, more open economies tended to have larger governments.

2.8 Populism and Immigration

Immigration seems to have a mixed effect on populist voting. According to Dustmann et al. (2016), most Danish municipalities in the period 1986–1998 experienced an increase in the vote share for parties with an anti-immigration agenda when their share of refugee immigrants increased. In urban municipalities, however, an increase in refugees had the opposite effect on nativist voting. Davis and Deole (2017) also found a mixed relationship between a country's immigrant share and the vote for far-right parties in 14 European countries in 2002–2014, when controlled for individual characteristics. In societies that the author classified as collectivist, a larger share of immigrants led to an increase in the vote share for far-right parties. An increased presence of immigrants had the opposite effect in societies that were classified as individualistic.

3 Populist Parties

We are interested in the propensity of individuals and nations to vote populist right-wing parties (PRW) into power. Table 1 lists the vote share of PRW parties found in 24 countries contained in the dataset.[5] The list of parties is given in Appendix 1. Their election results in the most recent parliamentary elections in 2002 and 2016 are also shown, showing an increase in support in 14 out of 20 countries.[6] Hungary tops the list in terms of both the share of votes in 2014 and the increase from 2002. There is also a PRW party in Greece that did not exist in 2002 but had a vote share of 20.5% in 2014. In third place is Finland, where the "True Finns" have around a fifth of the voting share. Perhaps surprisingly, Sweden comes next, with the Swedish

[5]The classification of the parties is based on Balcere (2011), Bakker et al. (2015), Bornschier (2010), Inglehart and Norris (2016), Minkenberg (2002), Minkenberg (2015), Mölder (2016), Melzer and Serafin (2013), Jungar and Jupskås (2014), Ingle (2008), and Wodak et al. (2013).

[6]We note that some countries – Spain, Iceland, and Ireland – do not have a right-wing populist party as we define it. These were omitted from our sample.

Table 1 Populist parties in different countries

Country	2002 (%)	2016 (%)	Change (%)	Country	2002 (%)	2016 (%)	Change (%)
Hungary	4.4	61.5	57.2	Lithuania	1.2	6.1	5.0
Poland	10.2	46.4	36.2	Switzerland	27.4	31.7	4.3
Slovenia	4.4	28.4	24.0	Estonia	–	2.3	2.3
Austria	10.0	29.8	19.8	Norway	15.3	16.3	1.0
Finland	1.0	19.1	18.1	Portugal	–	0.5	0.5
Bulgaria	–	17.7	17.7	Denmark	12.6	12.3	−0.3
Slovakia	3.7	16.6	12.9	France	12.2	9.3	−2.9
Greece	–	12.1	12.1	Croatia	5.3	0.7	−4.6
Sweden	1.4	12.9	11.5	Lux.	11.3	6.6	−4.7
UK	2.2	13.2	11.0	Belgium	11.3	5.2	−6.1
Germany	0.4	6.0	5.6	Netherland	18.7	10.1	−8.6
Czech Rep.	1.6	6.9	5.3	Italy	16.4	6.1	−10.3

Notes: The table shows the support for each party in the last parliamentary election in 2014 or before that year, compared to the last parliamentary election in 2002. Hence some of the results are from a year preceding 2014 or 2002. Source: European Election Database

Democrats carrying 12.9% of votes. After Poland are Bulgaria, Austria, and Lithuania. At the bottom of the list is Italy, where the Lega Nord lost many votes during this period.[7] Just above Italy are Belgium, the Netherlands, Slovenia, France, Estonia, and Denmark. Germany and the UK are close to the centre of the list.

4 Explanatory Variables

Our data come from the European Social Survey (*ESS*), which contains answers from individuals in 24 EEA member countries between 2002 and 2016, 15 Western European countries and nine Eastern European countries. The ESS, carried out every 2 years, measures the attitudes and behavioral patterns of more than 300,000 persons in various European countries. We use 268,513 observations from the survey.

Table 2 lists the names and definition of selected variables. The dependent variable, *pop,* takes the value 1 if an individual voted for a PRW party in the last election, but otherwise it is 0. Variables meant to capture cultural traits and trust in institutions are continuous variables taking a value between 0 and 1, except for those measuring religion. These are trust in the national parliament, trust in the EU Parliament, placement on the left/right scale of the political spectrum, satisfaction with democracy, attitude towards homosexuals, attitudes towards immigrants, and place in the income distribution. In addition, we have three dummy variables for

[7]This pattern reversed in the 2018 elections, with the strong showing from the Lega Nord.

Table 2 Definition of variables

Dependent variable	Variable takes value 1 for
Pop	Voted for a PRW party
Continuous (0–1) variables	**Meaning of variable's highest value**
Trust in national parliament	Complete trust
Trust in EU Parliament	Complete trust
Satisfaction with democracy	Very satisfied
Attitude towards homosexuals	Very negative
Attitude towards immigrants	Very positive
Age	Age the time of interview
Dummy variables	**Variable takes value 1 for:**
Low income	Belonging to the lowest 30% of the income distribution
Medium income	Belonging to the middle of the income distribution
High income	Belonging to the highest 30% of the income distribution
Centrist	Political views in the middle of the left/right political spectrum
Right-wing	Political views to the right on the left/right spectrum
Left-wing	Political views to the left on the left/right political spectrum
Low religiosity	Not very religious
Medium religiosity	Somewhat religious
High religiosity	Highly religious
Minority	Belonging to a minority group
Female	Being female
Low education	Having less than lower secondary education
Medium education	Having secondary or post-secondary non-tertiary education
High education	Having tertiary education
Long-term unemp.	Having at some time been unemployed for 3 months
Country	Country of interview
Round	Period of the interview

Source: European Social Survey

each of the four following features: the respondents' placement on the left/right scale, their education level, their placement in the country's income distribution, and their religiosity. Age is measured in the number of years at the time of the election and normalised to take values between 0 and 1, and a squared term for age is added to capture the possible non-linear effects of age on PRW voting.

There are several other dummy variables. They include belonging to a minority group, gender (1 denoting females), and a history of unemployment for 3 months or more.[8] Finally, there is a dummy variable for each country and each wave of the ESS, starting in 2002.

[8]The ESS changed its units of measurement for self-placement in the income distribution after the third survey in 2006. In order to account for that difference, the answers before and after the change were normalized.

5 Empirical Analysis

Pop is a dependent variable that only takes the values 0 and 1, so it does not follow a normal distribution. Therefore, a regression by least squares would produce the wrong standard errors. Running a logistic regression would counter this problem, but the interpretation of the coefficients would be more complicated. Therefore, we choose to use a least-squares regression in order to simplify the interpretation, even though the standard errors for the estimated coefficients might be wrong and the regression might produce probabilities outside the interval between 0 and 1. We try to account for this problem by running a generalised least-squares regression and using heteroscedasticity-consistent standard errors in the tables below.

As a robustness check, we computed the marginal effects obtained in a logit regression for the same statistical model and compared them to the coefficients of our generalised least-squares regression (see Appendix 2). Some discrepancies in marginal effects were found between the models in three variables. These are listed in Table 5. In order to account for unequal inclusion probabilities in the survey and differences in the countries' population size, post-stratification and population weights provided by the ESS are used. The weighted dataset is considered to be a random sample of the European population. The variance inflation factors (*VIF*) for each variable revealed that the model contained little multicollinearity.

The generic estimation equation is given by:

$$pop_{it} = \beta_0 + X'_{it}\beta_1 + Z'_{it}\beta_2 + T_t + C_i + u_{it},$$

where pop_{it} takes the value 1 if the individual voted for a PRW party, X is a matrix with the values and attitudes variables and religion listed in Table 2, Z has the demographic and economic variables (age, income distribution, education, gender, unemployment, minority group), T_t has the years of interview dummies, and C_i are country dummies.

Table 3 shows the regression results for the cultural and demographic variables along with their significance and heteroscedasticity-consistent standard errors. The coefficients of the country and time dummy variables are shown in Table 4. The analysis of the full model contains 223,794 observations, as 44,719 observations were dropped due to one or more missing variables.

The coefficients of the independent variables are mostly in line with previous results in the literature. A right-wing identity, a negative view of immigrants, dissatisfaction with democracy, a negative attitude towards homosexuality, and mistrust in the European parliament seem to be the factors heavily correlated with voting for a PRW party. Surprisingly, though, trust in a country's national parliament does not seem to have a significant effect on voting for a PRW party. In addition, women are less likely to vote for these parties, as are the young, while people with low- and mid-level education are more likely to vote for them than those with higher education. Having been unemployed for at least 3 months in the past does not seem to have a significant effect on voting for a PRW party. Moreover, age

Table 3 OLS Regression with sample weights. Dependent variable: *Pop*

Variables	Coef. Est.	Std. Error	T-value	
Intercept	0.061	0.005	13.21	***
Trust in national parliament	0.005	0.004	1.23	*N.S.*
Trust in EU parliament	−0.040	0.004	−10.74	***
Centrist views on the left/right scale	***Reference Dummy***			
Left-wing views on the left/right scale	−0.013	0.001	−10.43	***
Right-wing views on the left/right scale	0.077	0.002	33.12	***
Satisfaction with democracy	−0.025	0.004	−7.14	***
Attitude towards homosexuals	0.023	0.003	7.41	***
Attitude towards immigrants	−0.061	0.004	−17.27	***
In the lowest 30% of the income distribution	***Reference Dummy***			
In the middle of the income distribution	0.011	0.002	6.79	***
In the highest 30% of the income distribution	0.006	0.002	3.04	**
Low religiosity	***Reference Dummy***			
Medium religiosity	−0.0030	0.002	−1.91	.
High religiosity	0.0051	0.002	2.99	**
Belongs to a minority group	−0.0087	0.002	−3.71	***
Female	−0.0081	0.001	−6.03	***
Age	0.2560	0.014	18.92	***
Age, squared	−0.3836	0.022	−17.75	***
Low education	***Reference Dummy***			
Medium education	−0.0118	0.002	−5.49	***
High education	−0.0263	0.002	−10.89	***
Has ever been unemployed for 3 months	−0.0010	0.002	−0.64	*N.S.*

Note: * = significant at 5%, ** = significant at 1%, *** = significant at 0.5%

seems to have a positive but decreasing effect on the probability of voting for a PRW party. Quantitatively, being right-wing raises the probability of voting for a PRW party by 8%, being in favour of immigration reduces the probability by 6%, and being satisfied with democracy reduces the probability by more than 2%. Trusting the European Parliament fully lowers the probability of voting for a PRW party by 4%. Having a negative attitude towards homosexuals increases the probability by 2%, having a university education reduces it by 3%, and being female lowers it by 1%. Finally, being halfway through life (age = 0.5) increases the probability by 2%. Other variables, although statistically significant, are numerically less important. Thus, a typical PRW party voter will be someone who is male, against immigration, dissatisfied with democracy, right-wing, negative towards homosexuals, without a university education, and distrustful of the European Parliament.

The only result that is perhaps puzzling is that individuals are more likely to vote for these parties if they place themselves higher in the income distribution. There is also the question why people with "medium religiosity" are less likely to vote for a PRW party than the group of respondents with low and high values in this variable.

Table 4 OLS Regression with sample weights. Dependent variable: *Pop*

Dummy variables	Coef. Est.	Std. Error	T-value	
Austria	***Reference Dummy***			
Hungary	0.155	0.006	27.49	***
Poland	0.103	0.005	20.77	***
Switzerland	0.057	0.004	13.37	***
Norway	0.049	0.004	11.21	***
Denmark	0.029	0.004	6.55	***
Netherlands	0.014	0.004	3.42	***
Slovakia	0.000	0.006	0.00	*N.S*
Belgium	−0.012	0.004	−3.51	***
Italy	−0.017	0.005	−3.69	***
Luxembourg	−0.017	0.005	−3.49	***
France	−0.022	0.004	−6.03	***
Slovenia	−0.022	0.004	−5.42	***
Finland	−0.024	0.003	−7.09	***
Sweden	−0.024	0.004	−5.43	***
Bulgaria	−0.026	0.005	−5.46	***
Lithuania	−0.026	0.005	−5.05	***
Croatia	−0.047	0.005	−8.71	***
Germany	−0.047	0.003	−14.65	***
UK	−0.052	0.003	−16.21	***
Estonia	−0.060	0.003	−17.58	***
Czech Rep.	−0.066	0.004	−18.12	***
Greece	−0.068	0.004	−18.47	***
Portugal	−0.071	0.003	−23.36	***
Round 1: 2002	***Reference Dummy***			
Round 2: 2004	0.007	0.003	2.32	*
Round 3: 2006	0.004	0.003	1.35	*N.S*
Round 4: 2008	0.017	0.003	6.25	***
Round 5: 2010	0.025	0.003	8.56	***
Round 6: 2012	0.023	0.003	7.38	***
Round 7: 2014	0.040	0.003	12.65	***
Round 8: 2016	0.043	0.003	13.75	***
Degrees of freedom: 223,794	.	= significant at 10%		
(44,719 observations deleted due to missing variables)	*	= significant at 5%		
Residual standard error: 0.2049	**	= significant at 1%		
Multiple R-Squared: 0.1027	***	= significant at 0.5%		
Adjusted R-Squared: 0.1025				
F-Statistic: 216				

Note: Heteroskedasticity-consistent robust standard errors

Table 4 shows the coefficients of the country and ESS-round dummy variables. The time dummies show that support of PRW parties increased between 2008 and 2010 following the global financial crisis, and also between 2012 and 2016, which can possibly be attributed to the euro crisis as well as the increasing inflow of refugees.

Comparing the Eastern and Western European nations, the average value of the dummy variable for the 11 Western European nations is −0.017, while the average for the nine Eastern European nations is 0.01. Therefore, on average, the Eastern European nations have a slightly lower country effect in absolute terms. However, there is variation within the group. Hungary has the largest country dummy coefficient, followed by Norway and Poland, while the Czech Republic, Estonia, the UK, Greece, Slovakia, and Portugal have the smallest dummies. Both Hungary and Poland were in the top half of Table 1, but Finland, Greece, and Sweden, also at the top of that table, have negative coefficients in Table 4, which suggests that the explanatory variables account for the populist sentiments in these countries. In contrast, unexplained factors appear to make Hungary and Poland vote for PRW parties.

Note that two Eastern European countries—Hungary and Poland—rank high in Table 1 and also have large positive coefficients of the country dummies in Table 4, as is shown in Fig. 1 below. The other Eastern European countries—Bulgaria, Lithuania, the Czech Republic, Estonia, Croatia, Slovenia, and Slovakia—have negative country dummies, which indicates that time-constant country-specific factors are not pulling them in that direction. The average value for Eastern Europe

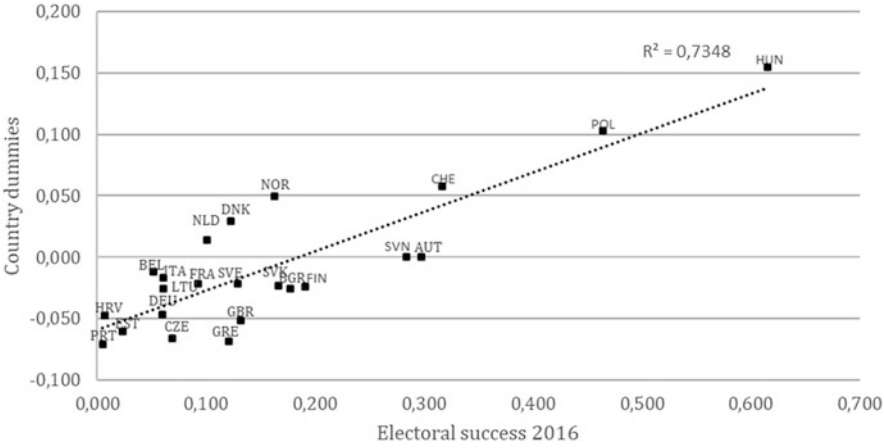

Fig. 1 Country fixed effects and voting for PRW parties. The sample includes observations for Croatia (HRV), Portugal (PRT), Estonia (EST), Germany (DEU), The Czech Republic (CZE), Greece (GRE), Lithuania (LTU), Italy (ITA), Belgium (BEL), France (FRA), Sweden (SVE), Great Britain (GBR), The Netherlands (NLD), Denmark (DNK), Norway (NOR), Slovakia (SVK), Bulgaria (BGR), Finland (FIN), Slovenia (SVN), Austria (AUT), Switzerland (CHE), Poland (POL) and Hungary (HUN). Sources for the shares of dominant ethnic groups: National statistical bureaus. We exclude Bulgaria from the figure since its values are very similar to those of Lithuania

Table 5 Discrepancies between ordinary least-squares estimates and estimated marginal effects in logit

Variables	GLS estimate	Marginal effects, logit	Significance, GLS	Significance, Logit
Trust in national parliament	0.005	−0.007		***
Medium education	−0.012	0.006	***	***
Unemployed	−0.001	0.003		***

excluding Hungary and Poland is −0.039; that is to say, more negative than the average for the Western European countries. The countries that are furthest from the fitted line are Norway, Denmark, and the Netherlands, which tend to lean more strongly towards PRW parties, once the personal attributes have been taken into account, than the electoral success of these parties in 2016 would lead us to expect.

Table 5 shows the largest differences in estimated marginal effects between a weighted logit regression—see Appendix 2—and our generalised least-squares regression. According to the logit regression, trust in the national parliament is a significant and negative variable, whereas the unemployment dummy is significant and positive. The medium education dummy is also significant in the logit regression, but its effect on voting for a PRW party are marginally positive, in contrast to the marginally negative effects in the GLS regression.

6 Specificities of Eastern Europe

Results in the existing literature would suggest that the socio-economic environment in Eastern European countries is conducive to the emergence and electoral success of populist political movements, right-wing parties in particular. For example, Inglehart and Norris (2016) suggest that countries that have been exposed to major economic displacement and change, along with countries whose culture is traditional and conservative, tend to have a larger electoral base for populist right-wing parties. Eastern Europe seems to qualify on both dimensions. Yet the reality happens to be very different.

Eastern European countries are small or medium-sized open economies that depend largely on international markets—European markets in particular—for both essential inputs and the sale of their final or intermediate products. Since the fall of the Soviet bloc, they have been the recipients of major foreign direct investment and in turn have experienced at least one major episode of capital flight in the wake of the financial crisis of 2008–2009. Moreover, the structure of their economies, dependent on traditional heavy and light industry, has exposed Eastern European countries to strong competitive pressures as a result of China's entry into the World Trade Organization. In combination, these factors have contributed to a

rise in inequality on a number of dimensions: rural vs. urban areas, declining vs. emerging or growing industries, young vs. old generations and so forth.

In addition, Eastern Europe also underwent a painful transition from central planning to market- and price-based economic coordination. Eastern European countries vary considerably in the speed, dynamics, and success of their transition, but there are several common features across the region. The economic changes have led to substantial growth in inequality and economic displacement. Another source of social tension and bitterness is that in all countries, abuse of political power and influence has often given rise to abuse of market power. For these reasons, it is still rare that incumbents are re-elected. Thus Eastern Europe has been exposed to economic pressures that are at least as severe as those facing old EU member states.

The conservative culture and prevailing social norms in Eastern European societies also suggest that the advance and popularisation of social-liberal ideas and policies would provoke a political backlash. Dustmann et al. (2017) show how traditional values magnify the effect of economic downturns on voters, making them distrust the European Union and national parliaments more and vote for populist parties. Due to the relatively late transition to modernity and the influence of the Soviet bloc, Eastern Europeans were subject to more traditional and conservative standards of behaviour in society and in the family. Furthermore, for somewhat complex reasons, education and the mass media before 1989 emphasized patriotism and even nationalism as opposed to internationalism. In addition, as is pointed out by Inglehart and Baker (2000), Eastern European cultures and social norms up to the 2000s are strikingly oriented towards social survival and cohesion rather than self-expression.

After the fall of the Berlin Wall, Eastern European countries have experienced major social and cultural changes: the elimination of national borders, a reduction in national sovereignty, the emigration and immigration of large numbers of people, an increase in the social acceptability of cohabitation without marriage, abortion, same-sex relations, and even same-sex marriage. In other words, these societies have experienced a convergence with beliefs and norms in Western Europe, with emphasis on the individual and self-expression rather than on some sort of collective identity. In such circumstances of major and rapid change, one would expect cultural friction and opposition that could foster the growth of right-wing parties.

Yet our results do not lend support to those hypotheses: They show that Eastern European countries are not more susceptible to right-wing populism than Western European countries. We believe that several factors may account for this. One of these factors is the turbulent history of the region and, in particular, its turbulent relationship with nationalism. On the one hand, the spread of nationalism from Western Europe to Eastern Europe is largely responsible for the creation of national identities in the region, which eventually led to the demise of the four great empires of the East: Ottoman, Russian, Habsburg, and German. The final result was the establishment of the modern nation states of the region by the end of WWI. The entire process proved particularly violent and destructive, however: Both WWI and WWII were much bloodier and more socially disruptive in the East than in the West. Moreover, the events of the twentieth century emphasize a key political feature of the

region: Namely, economic, political, and cultural life in the region is caught up in the interplay of Great Powers, specifically Germany and Russia, which cannot be opposed by any single regional nation state. For example, Germany became a major export market and creditor for most Eastern European countries in the 1930s. As a result, long before WWII, the Nazis used the resulting economic influence to promote their political agenda. Naturally, since their inception, all nation states in the region have been actively looking for allies and forms of international cooperation, with various degrees of success, in order to offset and limit the impact of foreign interference in their own affairs.

In this context, both the Cold War and WWII remain constant reminders of the consequences when chauvinism runs rampant and Eastern European countries fail to form strong international alliances. After the fall of the Berlin Wall, membership of NATO and the European Union have been the two pillars of the foreign policy of all Eastern European countries, and they have enjoyed wide public support precisely because of the traumatic memories of the past. It is important to point out that even the most extreme Eurosceptic in Hungary and Poland, for example, do not question the value of NATO or EU membership. Instead, they defend traditional social values, the preservation of the idea of a Europe of nations rather than a federal Europe.

Other factors that limit the susceptibility of Eastern Europeans to right-wing populism are socio-economic in origin. Many Eastern Europeans are aware that they have directly or indirectly benefited from the EU common market, mainly through inward FDI and the opening of Western European markets to Eastern European labour. In addition, opening the borders has meant an increase in travel and interaction with other Europeans, intermarriages, and much a greater awareness of 'the other.' In this context, the electoral map of Poland is revealing. Eastern Poland has been and remains the stronghold of right-wing populism, while Western Poland has been much less susceptible to right-wing ideas and much more prone to vote based on economic issues. This does not seem to be a coincidence, given the increasing cross-border integration of Western Poland with Germany, the large-scale reallocation of people, mainly Poles across the border, and the influx of FDI to the region.

Finally, yet importantly, while Eastern Europeans may exhibit fear and unwillingness to accept immigrants from non-European or non-Christian countries, they seem to take no issue with the immigration of Western Europeans to their countries for economic and family reasons. In addition, this acceptance of greater European social and economic integration can be traced back to a residual belief that some Western European countries—Germany and the Scandinavian countries in particular—remain role models that should be emulated. Finally, the Eastern European countries have a chequered state and institutional tradition. Thus the alternative to European integration appears much less attractive to the general public than it does in some of the old European great powers, such as the UK, France, or Germany. On a related note, political interests in Eastern Europe are not institutionalised through political parties, and political parties represent clusters around certain influential political leaders. Consequently, while authoritarian tendencies may very well be

present and even accepted by much of the electorate, right-wing populists in Eastern Europe simply do not have the institutional capacity to impose total control on political, economic, and cultural life.

7 What Makes Hungary and Poland Different?

On most dimensions, Hungary and Poland appear similar to most other Eastern European countries. In what follows, we explore possible explanations for the high susceptibility of Hungarians and Poles to right-wing populism. We believe that the observed patterns can be accounted for by a combination of traditional culture, strong nationalist tradition, and an extremely ethnically homogeneous population. We suggest that the Europeans in less ethnically homogeneous societies are less prone to support right-wing populism not only because exposure to immigrants and minorities somehow makes them more enlightened. Rather, we believe that ethnic diversity and migration makes everyone aware of economic, political, and social difficulties prior to the implementation of a right-wing nationalist agenda. In this sense, ethnic diversity undermines the credibility of right-wing policies.

Poland and Hungary experienced high rates of economic growth in the 2000s and the 2010s. Moreover, they did not perform worse than the rest of the Eastern or Western European countries during and after the Great Recession. In fact, Poland is the only European country that did not experience even a technical recession following the financial crisis of 2008–2009. Although the public finances of Hungary are still a cause for concern, the Hungarian economy has also performed reasonably well during the same period. In this context, it is all the more surprising that these two countries have turned strongly to the extreme right in the past decade or so.

Another puzzling factor is that the migrant crisis after 2013 did not affect either country. Poland has been completely isolated from the main channels of immigration from the Middle East and Africa to the EU, and Hungary was only briefly a transit destination in 2015–2016. Even during this period, the influx of temporary immigrants to Hungary pales in comparison with that in Greece and Italy. Consequently, unlike in the case of Germany, it does not appear likely that the rise of right-wing populism can be traced back to the increase in immigration to the EU after the Arab Spring.

In terms of standard explanations, Poland and Hungary stand out for their traditional culture and social norms. Inglehart and Baker (2000) show that Poland and Hungary, along with Romania, are the Eastern European countries with the most traditional and conservative social norms and attitudes. It comes as no surprise, then, that large sections of these societies have felt deeply uncomfortable with the rise of social liberalism. These developments have certainly contributed to the popularity of political parties that appear to defend the certainty of established institutions, such as the church and the state, or established social norms based on (patriarchal) hierarchy, order, and the value of the community as opposed to individual expression.

Nevertheless, one is bound to ask why other societies that score high on Inglehart and Baker (2000) index of traditionalism, such as Romania, have not experienced a similar rise in right-wing populism.

In this context, it is interesting to note that both Poland and Hungary have had a long historical tradition as regional powers. While it is true that by 1815 both countries had become parts of the multinational Russian and Habsburg empires, their intellectual and political elites largely survived intact and, in turn, they were the first Eastern European countries to develop a very strong sense of national identity. The strength and popular nature of Polish and Hungarian nationalism is evident, for example, from the Polish rebellions of 1830–1831, 1846, 1848–1849, and 1863–1864 and the Hungarian revolution of 1848–1849. The resistance to Soviet rule and interference after 1945 also bears a strong flavour of national resistance against the successors of the traditional imperial enemy.

There are also other 'old' Eastern European countries, but their historical tradition has either been interrupted by long foreign rule and socio-economic dominance, as in the case of Bulgaria, Croatia, Czechia, Lithuania, and Serbia, or current states that are the union of older states with a distinct historical tradition, as in the case of Romania. For example, among the other Eastern European countries, Czechia and Romania also have histories that can be traced back at least to the Middle Ages through the kingdom of Bohemia, in the former instance, and the principalities of Walachia and Moldova, in the latter. Still, the Czech lands experienced sustained Germanization after 1620, characterized by strong influence from the central government of the Habsburgs and from the local German aristocracy. Thus the Czech national revival only gathered pace in the nineteenth century. Similarly, historical differences between Walachia, Moldova, and Transylvania slowed down the formation of a Romanian identity during the nineteenth century.

The only dimension on which Hungary and Poland are completely different from the rest of the Eastern European countries, and in fact from most Western European countries, is their ethnic homogeneity. As regional powers, both Hungary and Poland ruled over other nations until the eighteenth and the nineteenth century, respectively. After WWI, however, Hungary lost all regions with mixed populations under the formal jurisdiction of Austria-Hungary. Although Poland after 1920 included sizeable Ukrainian, Lithuanian, and German minorities, the end of WWII saw the creation of a largely homogeneous nation state, albeit displaced to the West. The result is that by the early 1990s, ethnic Hungarians accounted for 98 percent of the population of Hungary and ethnic Poles for 97 percent of the population of Poland. In this respect, the only Western European countries with similar dominance by major ethnic groups are Norway and Finland, both of which also turn out in our statistical tests to be susceptible to right-wing nationalism.

We investigate further this issue in Fig. 2 by plotting the relationship between the estimated country-specific susceptibility to right-wing populism and the share of dominant ethnic groups in the population. A visual inspection of Fig. 1 confirms that the tendency to support right-wing populism does not increase with the ethnic diversity of a country. This finding contradicts the notion that ethnic differences on their own increase social tension and the probability of civil conflict. On the

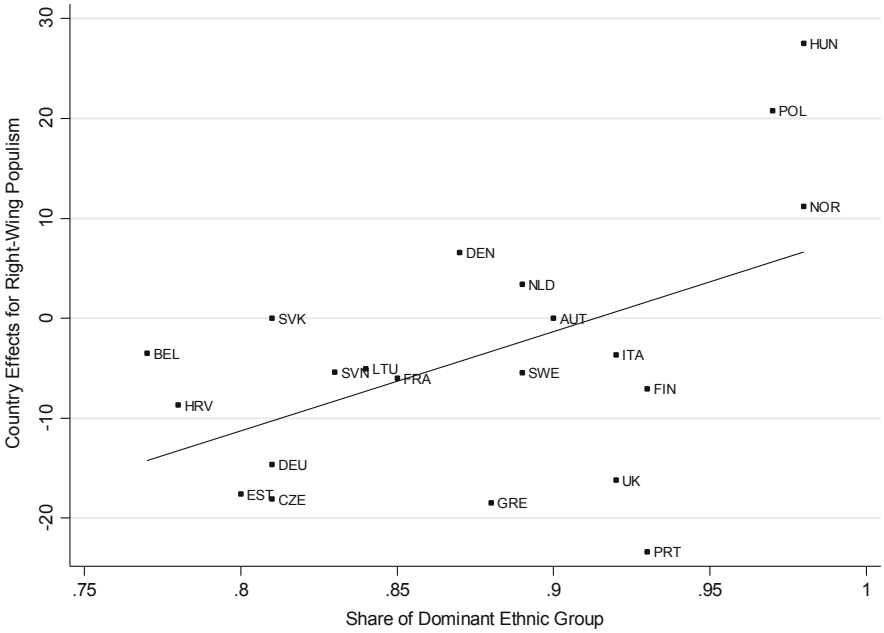

Fig. 2 Share of dominant group and the country-specific effect. Relationship between country-specific susceptibility to right-wing populism in Table 4 and the share of dominant ethnic groups in the population. Country-specific susceptibility is measured by the country effects reported in Table 4. The sample includes observations for Austria (AUT), Belgium (BEL), Croatia (HRV), Czech Republic (CZE), Denmark (DEN), Estonia (EST), Finland (FIN), France (FRA), Germany (DEU), Greece (GRE), Hungary (HUN), Italy (ITA), Lithuania (LTU), Netherlands (NLD), Norway (NOR), Poland (POL), Slovenia (SVN), Slovakia (SVK), Sweden (SWE), United Kingdom (UK), Portugal (PRT). Sources for the shares of dominant ethnic groups: national statistical bureaus. We exclude Bulgaria from the figure since its values are very similar to those of Lithuania

contrary: We find that the propensity to support right-wing populist parties increases with the ethnic homogeneity of the country. This applies to both Eastern and Western Europe. A linear regression of the susceptibility to right-wing populism on the share of the dominant ethnic groups shows a positive and statistically significant correlation between the two variables. Moreover, Fig. 1 suggests that support for right-wing populism may grow exponentially with the share of the dominant ethnic groups.

We suggest two hypotheses for the observed pattern. First, it may be that interacting with numerous people of diverse background in daily life makes it harder to demonize 'the other' as the source of all social evils. Thus ethnic diversity may actually promote the (liberal) notion of common human nature and, in turn, universal human rights. Along with this optimistic hypothesis, we also consider a second hypothesis: that ethnic diversity does not promote mutual understanding, but its existence increases the costs and dangers associated with promoting right-wing

policies. In ethnically diverse societies, potential sympathizers are aware from a practical standpoint that the implementation of right-wing nationalistic and populist policies is likely to increase social tension, cause social disruption, and lead to international isolation, if not intervention by more powerful neighbours. The practical difficulties in putting such policies in place in diverse societies may actually undermine the electoral credibility of right-wing populism. We leave it to future research to test which of these hypotheses holds, if either one does.

8 Conclusions

In this paper, we have focused on support for PRW parties and ignored the populist parties on the left of the political spectrum because the accepted wisdom has been that Eastern Europe is particularly fond of PRW parties and that these parties pose an existential threat to the European Union. Our results show that the Eastern European nations differ internally in their propensity to vote for a PRW party. They have a slightly higher average country effect but vary greatly internally. Thus Hungary and Poland have a greater affinity with such parties, while the Baltics, Bulgaria, Slovenia, Croatia, and Slovakia have much less. However, we can also find comparable countries in Western Europe, such as Norway and Denmark, which also are inclined to vote for a PRW party. Poland and Hungary are both former regional powers with homogeneous populations where power tends to lie in individual politicians rather than organised parties, as in the West. We argue that the diversity of the population of other Eastern European countries makes their culture more liberal; that is, more accepting of other ethnic group and less prone to vote for right-wing populists.

The coefficients of the personal attributes have a familiar pattern. A right-wing identity, a negative view of immigrants, dissatisfaction with democracy, a negative view of homosexuality, and mistrust in institutions seem to be the factors heavily correlated with voting for a PRW party. In addition, women are less likely to vote for these parties, as are the young, while people with low- and mid-level education are more likely to vote for them than the highly educated are. The only surprising result is that individuals are more likely to vote for these parties if they place themselves higher in the income distribution. There is also the question why people with "medium religiosity" are less likely to vote for a PRW party than the group of respondents with low and high religiosity.

One limitation of the study is that some political parties that are not considered PRW have adopted more radical policies in order to win votes from PRW parties. Therefore, overall support for populism could be underestimated. A good example is the UK, where the Conservative Party became more populist in response to the challenge presented by the UK Independence Party. In fact, in the recent study by Dustmann et al. (2017), the Conservative Party is counted among populist parties based on its manifesto.

In future work, we plan to study the determinants of support for left-wing populist parties in Europe and test whether they differ from the determinants of PRW parties.

Left-wing populist parties have been more popular in Southern Europe and less so in Eastern Europe; therefore, the focus of our research would shift from the latter to the former.

Acknowledgements The authors would like to thank Sebastian Otten for valuable comments on an earlier draft.

Appendix 1 List of Populist Parties

Country	Party
Hungary	Fidesz (F) after 2006, Jobbik (J), Magyar Igazság és Élet Pártja (MIÉP)
Poland	Prawo i Sprawiedliwość (PiS) after 2007 Samoobrona Rzeczpospolitej Polskiej (SRP) Polska Wspolnota Narodowa (PWN) Ruch Patriozinsky (RP), Narodowe Odrodzenie Polski (NOP), Polska Partia Narodowa (PPN), Kongres Nowej Prawicy (KNP) Kukiz '15
Slovenia	Slovenska Nacionalna Stranka (SNSi), Slovenska demokratska stranka (SDS) Lipa (L)
Austria	Freiheitliche Partei Österreichs (FPÖ), Bündnis Zukunft Österreich (BZÖ), Team Stronach für Österreich (TS)
Finland	Perussuomalaiset (PS), Suomen Kansan Sinivalkoiset (SKS), Sinivalkoinen Rintama (SR), Muutos 2011 (M)
Bulgaria	Ataka, Balgarski Natsionalen Saiuz, Natzionalen Front za Spasenie na Bulgaria (NFSB), Natzionalen Ideal za Edinstvo (NIU), Edinna narodna partia (ENP), Partia za horata ot naroda (PHN), Prezaredi Balgariya (PB)
Slovakia	Slovenská národná strana (SNSk), Ľudová strana—Naše Slovensko (L'SNS)
Greece	Laikós Orthódoxos Synagermós (LAOS), Anexartitoi Ellines (ANEL), Chrysí Avgí (C)
Sweden	Sverigedemokraterna
UK	The Democratic Unionist Party (DUP), United Kingdom Independence Party (UKIP)
Germany	Nationaldemokratische Partei Deutschlands (NPD), Alternative für Deutschland (AfD)
Czech Rep.	Sdružení pro republiku (SPR), Pravý blok (PB), Úsvit (U)
Lithuania	Partija tvarka ir teisingumas (PTT), Jaunoji Lietuva (JL)
Switzerland	Schweizerische Volkspartei (SVP), Schweizer Demokraten (SD), Eidgenössisch-Demokratische Union (EDU), Freiheits-Partei der Schweiz (FPS), Lega Dei Ticinesi (LT), Partei National Orientierter Schweizer (PNOS)
Estonia	Eesti Iseseisvuspartei (EIP), Eesti Konservatiivne Rahvaerakond (EKRE)
Norway	Fremskrittspartiet (FRPn)
Portugal	Partido Nacional Renovador (PNR), Partido da Nova Democracia (PND), Partido Democrático do Atlântico (PDA)
Denmark	Dansk Folkeparti (DF), Fremskridtspartiet (FRPd)
France	Mouvement National Républicain (MNR), Front National (FNf)

(continued)

Country	Party
Croatia	Hrvatski demokratski savez Slavonije i Baranje (HDSSB), Hrvatska stranka prava (HSP1)
Luxembourg	Alternative Demokratesch Reformpartei (ADR)
Belgium	Vlaams Blok (VB1), Vlaams Belang (VB2), Parti Populaire (PP), Front National (FNb)
Netherlands	Partij voor de Vrijheid (PVV), List Pim Fortuyn (PF), Staatkundig Gereformeerde Partij (SGP)
Italy	Allianza Nazionale (AN), Fratelli D'Italia (FI), Lega Nord (LN), Fiamma Tricolore (FT)

Appendix 2 GLS and a Marginal-Effects Logit Regression

	GLS	Logit	GLS	Logit
Variable name	Estimated values		Significance	
Intercept	0.061		***	
Trust in national parliament	0.005	−0.007		***
Trust in EU parliament	−0.040	−0.019	***	***
Left-wing views on the left/right scale	−0.013	−0.017	***	***
Right-wing views on the left/right scale	0.077	0.037	***	***
Satisfaction with democracy	−0.025	−0.013	***	***
Attitude towards homosexuals	0.023	0.006	***	***
Attitude towards immigrants	−0.061	−0.040	***	***
In middle of income distribution	0.011	0.006	***	***
In top 30% of income distribution	0.006	0.003	**	***
Medium religiosity	−0.003	0.000	.	
High religiosity	0.005	0.002	**	**
Belongs to a minority group	−0.009	−0.011	***	***
Female	−0.008	−0.007	***	***
Age	0.256	0.117	***	***
Age, squared	−0.384	−0.155	***	***
Medium education	−0.012	0.006	***	***
High education	−0.026	−0.007	***	***
Has ever been unemployed for 3 months	−0.001	0.003		***
Belgium	−0.012	−0.009	***	***
Bulgaria	−0.026	−0.015	***	***
Switzerland	0.057	0.026	***	***
Czech Rep.	−0.066	−0.024	***	***
Germany	−0.047	−0.027	***	***
Denmark	0.029	0.006	***	**
Estonia	−0.060	−0.024	***	***
Finland	−0.024	−0.009	***	***

(continued)

Variable name	GLS	Logit	GLS	Logit
	Estimated values		Significance	
France	−0.022	−0.013	***	***
UK	−0.052	−0.023	***	***
Greece	−0.068	−0.023	***	***
Croatia	−0.047	−0.020	***	***
Hungary	0.155	0.047	***	***
Italy	−0.017	−0.009	***	***
Lithuania	−0.026	−0.012	***	***
Luxembourg	−0.017	−0.011	***	***
Netherlands	0.014	0.001	***	
Norway	0.049	0.018	***	***
Poland	0.103	0.034	***	***
Portugal	−0.071	−0.031	***	***
Sweden	−0.024	−0.011	***	***
Slovenia	−0.022	−0.014	***	***
Slovakia	0.000	−0.007		***
Round 2: 2004	0.007	0.000	*	
Round 3: 2006	0.004	0.006		***
Round 4: 2008	0.017	0.013	***	***
Round 5: 2010	0.025	0.015	***	***
Round 6: 2012	0.023	0.015	***	***
Round 7: 2014	0.040	0.021	***	***
Round 8: 2016	0.043	0.016	***	***

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Artificial Intelligence, Labor Market Structure, or Hysteresis of Past Recessions? Why Prices in Japan Do Not Rise Despite Quantitative Easing

Koichi Hamada, Makoto Sakurai, and Masahiko Kataoka

Abstract Despite the recent strong economic recovery, growth in wages and prices has been sluggish across the globe. Japan has come to face this issue ahead of any others. The policy authorities of each economy could learn something from the case study of Japan. This paper will examine some factors that have restrained growth in wages and prices in Japan, and discuss the desired policy responses to address this issue.

In relation to the theme of this session—inequality, wages, and growth—factors responsible for this curb on growth in wages and prices can be divided primarily into two categories. One is "hysteresis" brought about by past serious economic downturns. Serious economic downturns have left persistent damage to the supply side of the economy through various channels, including an increase in the number of "discouraged workers" and "involuntary non-regular employees," a slowdown in (human) capital accumulation, and the inefficient business processes that took root under excessive competition. This damage has created the slack that is easing the upward pressure on prices that has come from an expansion in demand. Besides this hysteresis, the second category includes factors of a more structural nature that reduce upward pressure on wages amid an increase in labor demand. These factors include: an increase in labor participation of women and the elderly, whose wages are relatively low; firms' and households' anxiety for the future; and technological

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innovation in the IT industry, such as robotic process automation (RPA) and artificial intelligence (AI).

If the supply-demand conditions continue to tighten, the factors in the former category will eventually mitigate with hysteresis reversing. Moreover, the reversal of hysteresis is a desirable change, in that it can enrich people's lives. To bring this about, the Bank is expected to continue to maintain the adequate level of tightening of supply-demand conditions, thereby supporting the reversal of hysteresis. Given that it could take some time to reverse hysteresis, the Bank needs to conduct monetary policy while closely monitoring the economic and financial conditions so that no severe distortion will be created under the prolonged accommodative financial condition. Meanwhile, factors in the latter category need to be addressed in a more structural way. Monetary policy and structural policy must nonetheless address the issue interactively, since these factors are somewhat related to each other.

This article consists of two sections. Section 1, written by Makoto Sakurai, a Member of the Policy Board of the Bank of Japan, and Masahiko Kataoka, Director, Secretariat of the Policy Board, discusses the conduct of monetary policy amid the hysteresis. Section 2, by Koichi Hamada, Tuntex Emeritus Professor of Economics at Yale University, discusses the desired fiscal and structural policy response by focusing on the education system in Japan and its relation to technological innovation, especially advances in the IT field.

1 Hysteresis and Sluggish Growth in Wages and Prices: The Case Study of Japan[1]

1.1 Reversal of Hysteresis

Serious economic downturns create persistent damage to the economy.[2] Since the 1990s, the growth trend in Japan's economy marked a significant fall following each serious economic downturn. This is attributable to persistent damage to the supply side of the economy through various factors such as an increase in the number of "discouraged workers," who are deterred from seeking employment despite wanting to work, and "involuntary non-regular employees," who reluctantly accept employment as non-regular employees, together with a slowdown in (human) capital accumulation, and the inefficient business processes that took root under excessive

[1]This part consists of three sections. The first and second sections are assessments of the factors responsible for sluggish growth in wages and prices, jointly written by Makoto Sakurai and Masahiko Kataoka. The third section is a personal assessment by Makoto Sakurai of the current situation and what policy responses should be made.

[2]For example, Cerra and Saxena (2008) conducted an empirical analysis of past financial and political crises and found that, in many serious crises, the adverse impact on the growth rate persisted even after a decade.

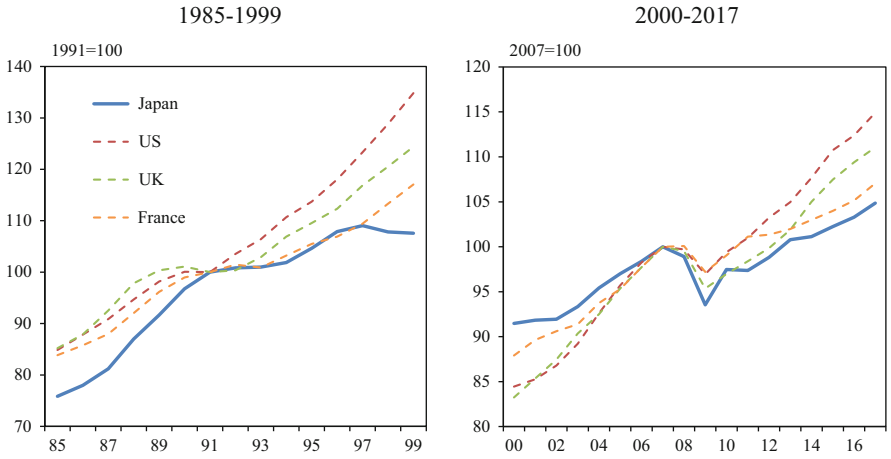

Chart 1 Real GDP growth. Source: OECD

competition. While an economic downturn is fundamentally assumed to be a cyclical, or demand-side, phenomenon, the mechanism by which it influences the medium- to long-term growth trend through damage to the supply capacity is referred to as "hysteresis."

It has also been pointed out that hysteresis that arose in earlier periods can be reversed to a certain degree amid robust aggregate demand.[3] In Japan, the uptrend in economic growth has been increasing recently in a situation where aggregate demand has continued to increase strongly, and the aforementioned damage to the supply side of the economy is also being mitigated. Under the circumstances, growth in wages and prices has been contained. Specifically, the expansion of the supply side of the economy due to the reversal of hysteresis eases the upward pressure on wages and prices that has come from an increase in aggregate demand. In other words, hysteresis that arose in earlier periods has created the slack that is easing the tightening of supply-demand conditions. Past economic downturns in Japan have been more serious, and even more frequent, than in other advanced economies. Against this background, the hysteresis in Japan might remain relatively deep-rooted (Chart 1).

In what follows, the changes that have taken place in Japan's supply capacity since the 1990s will be discussed by focusing on hysteresis associated with labor input and labor productivity.

[3]For example, Ball (2015) states that past damage to the supply capacity can be reversed under a "high-pressure economy"—that is, a continued expansion of the economy—and that the Federal Reserve might be justified in maintaining a low-interest rate environment for a longer period, as long as inflation expectations are anchored. Yellen (2016) argues that, although this point deserves consideration, the risk of an accumulation of financial imbalances and price instability warrants attention.

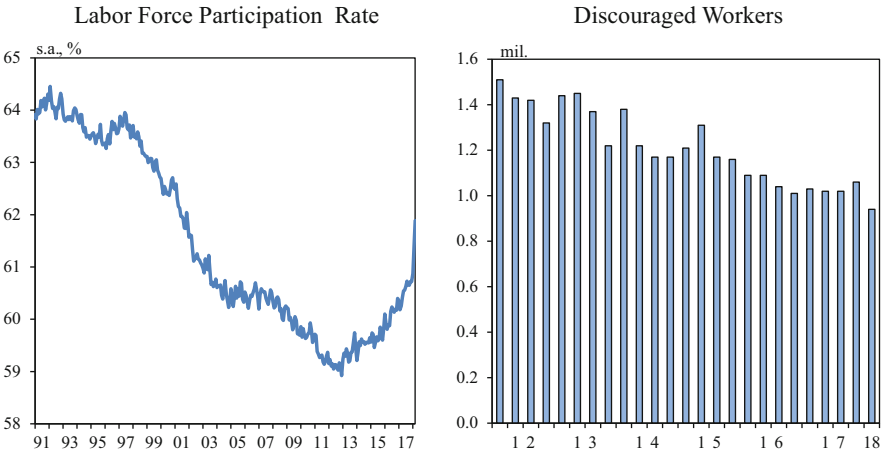

Chart 2 Labor force participation rate. Note: Discouraged workers are people who are not seeking employment because they feel that they have no prospect of finding a suitable job. Source: Ministry of Health, Labour and Welfare

1.1.1 Labor Input

A. Decline in the Labor Force Participation Rate

A decline in the labor force participation rate is one of the channels through which hysteresis associated with labor input occurs. There are a number of reasons why people find it increasingly difficult to get a job as their period of unemployment becomes longer: for example, their abilities diminish relatively since they are unable to enhance their practical skills through work experience, and prolonged unemployment becomes a stigma in their career.[4] Consequently, some of those who are unemployed for a prolonged period will give up seeking employment and become discouraged workers, who are regarded as being excluded from the labor force population. In fact, after the bursting of the asset bubble in the early 1990s, the labor force participation rate in Japan turned down sharply, and the labor force population also started to decline.

However, the labor force participation rate has recently turned to an uptrend amid the long period of continued economic expansion. As news reports about labor shortages increase and firms dig deeper into the labor market by, for example, relaxing their recruitment criteria, people who once gave up seeking employment have now started to participate in the labor market again. Reflecting these developments, the number of discouraged workers is declining (Chart 2). Along with the factors which have led to labor participation of women and the elderly as mentioned later, the size of labor force has increased by 2.21 million in the 6 years since the

[4]Referring to firms' reactions to job applicants' résumés Kroft et al. (2012) showed that, if unemployment exceeds a certain period of time, this will make it harder for the applicant to find employment because of stigmatization and other factors.

beginning of 2012, and this accounts for nearly two thirds of the 3.34 million increase in the number of employed persons.

B. Increase in Involuntary Non-regular Employees

Another channel through which hysteresis is generated is the increase in the number of involuntary non-regular employees, who, despite wanting to become regular employees, reluctantly accept employment as non-regular employees, due mainly to "the absence of firms that will employ them as regular employees." Job offers for regular employees decrease and the number of involuntary non-regular employees increases when firms shift to hiring non-regular employees to cut labor costs and secure employment flexibility in response to an economic downturn. It has been pointed out that if someone begins working as a non-regular employee upon graduation, they are subsequently less likely to be employed as a regular employee.[5] Since working hours for non-regular employees are relatively short, an increase in the number of involuntary non-regular employees leads to a decline in labor input. Since the 1990s, the number of involuntary non-regular employees has increased substantially in Japan, as firms have sought to benefit from employing non-regular employees.

That being said, the number of involuntary non-regular employees has recently begun to decline amid an increase in labor demand. With a view to securing additional labor force and retaining existing human resources, firms are increasing the recruitment of regular employees and converting non-regular employees into regular employees. While the number of involuntary non-regular employees has decreased by 0.85 million in the 5 years since early 2013, the number of regular employees has increased by 1.35 million (Chart 3).

1.1.2 Labor Productivity

A. Sluggishness in Business Fixed Investment

Sluggishness in business fixed investment can be cited as one of the channels through which hysteresis associated with labor productivity is generated. Such sluggishness leads to a deceleration in capital accumulation. An increase in aging capital stock and delays in the introduction of new technology contributes to a sluggish rise in total factor productivity (TFP).[6] Since the bursting of the asset bubble in the early 1990s, Japanese firms have reined in fixed investment as they have been burdened with excess production capacity and excess debt, with the

[5]Genda et al. (2010) examined changes in type of employment by analyzing the data of labor statistics. The results showed that the type of employment upon graduation, especially for those with lower education, has an effect on future employment prospects. The following were given as reasons: non-regular employees do not have adequate chance of being trained; and the lack of experience in being employed as a regular employee could be viewed in a negative light by recruiters.

[6]For example, see Haltmaier (2012).

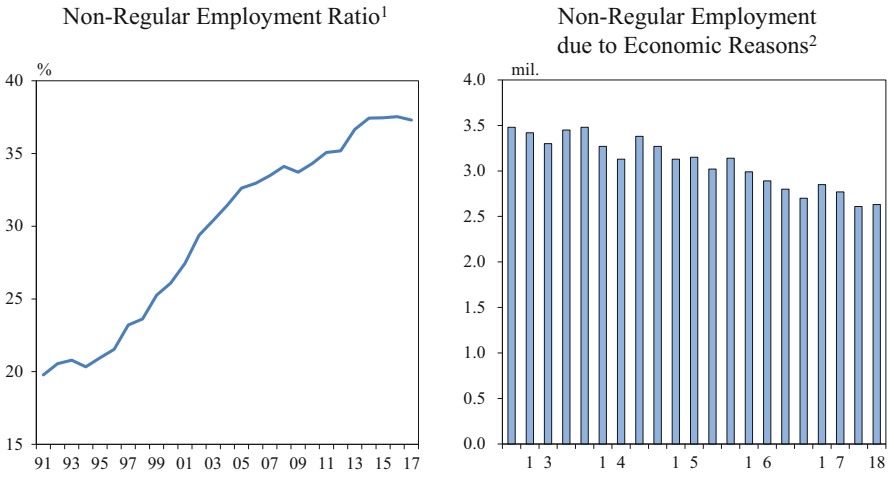

Chart 3 Non-regular employment. Notes: 1. The ratio of non-regular employment to total employment excluding executives of a company or corporation. 2. The number of those who work as non-regular employees due to the absence of firms that will employ them as regular employees. Source: Ministry of Health, Labour and Welfare

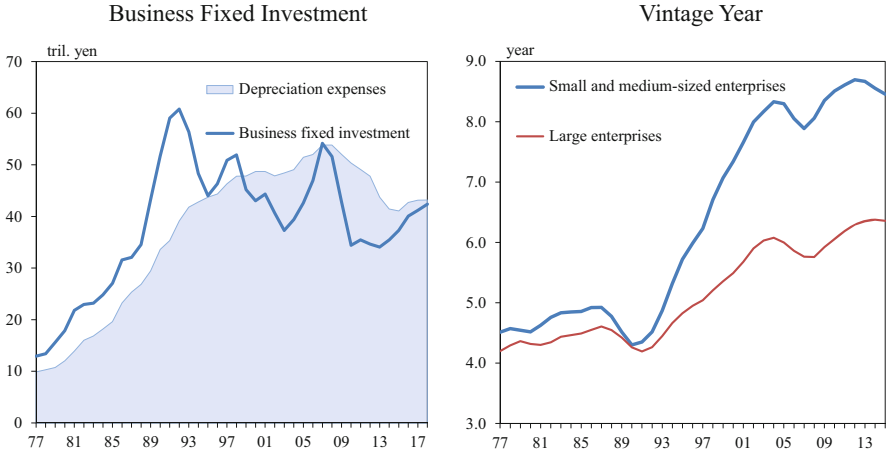

Chart 4 Business fixed investment. Sources: Ministry of Finance; The Small and Medium Enterprise Agency

banking sector tightening their lending attitudes. Since then, business fixed investment has been contained within the scope of depreciation expenses over the years. As a consequence, aging capital stock has increased and the introduction of new technology has tended to be delayed (Chart 4).

Chart 5 Education and training. Source: Ministry of Health, Labour and Welfare

B. Reduction in the Cost of Education and Training

Firms' attempts to cut costs by reducing spending on education and training leads to a deceleration in the accumulation of human capital and a sluggish rise in labor productivity. This is related to the aforementioned increase in the number of involuntary non-regular employees. While firms address skills development for regular employees through systematic on-the-job training (OJT) and other programs, both on-site and off-site, they tend to avoid proactive investment in the training of non-regular employees, who are not intended to be employed for a long period in the first place. Since the 1990s, Japanese firms have shifted to hiring temporary workers rather than regular employees and have endeavored to minimize the cost of education and training against the background of labor costs being a burden on corporate profits due to excessive employment (Chart 5).

C. Excessive Competition Among Firms

Excessive competition among firms stemming from protracted deficient demand may also have contributed to the decline in labor productivity. Since the 1990s, many Japanese firms have been drawn into fierce competition, cutting excessively the price of their products and providing extravagant services. As a result, inefficient work practices and the provision of excessively high-quality services for their prices have been seen in some industries. For example, the proportion of businesses in the wholesale and retail industries operating 24 h a day increased rapidly from 1.6% in 1994 to 5.5% in 2014. A questionnaire survey conducted on people who have resided in both Japan and the United States shows that a large number of services in Japan are regarded as lower in price for the quality (Chart 6).

Japan's labor productivity appears to have declined through the various channels mentioned earlier. It is often pointed out that labor productivity in Japan is lower than in other advanced economies. For example, Jorgenson et al. (2016) made a comparison between Japan and the United States in the levels of labor productivity,

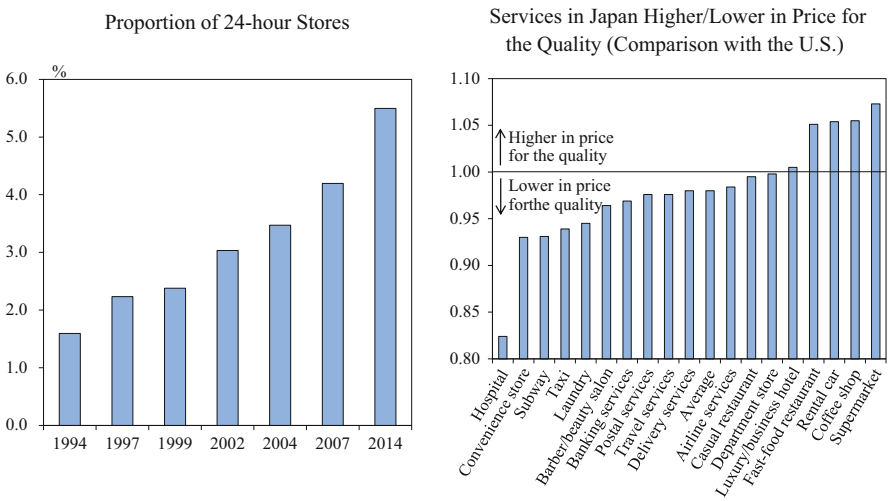

Chart 6 Extravagant services. Sources: Ministry of Economy, Trade and Industry; Japan Productivity Center

showing that productivity in Japan was around 40% lower than in the United States in 2012.

However, factors that had lowered labor productivity are now being addressed. As supply-side constraints materialize in tandem with labor shortages, firms are proactively making fixed investment aimed at saving labor and increasing production capacity as well as addressing the training of employees. Firms are also streamlining inefficient business processes such as unrequested re-delivery services and late-night services where sales are low. According to the OECD, Japan's labor productivity, though remaining at a low level, has recently been improving at a relatively fast pace by catching up with that of other economies (Chart 7).

1.2 Factors of a More Structural Nature

Sluggish growth in wages and prices is also attributable to factors of a more structural nature. The following section will consider some examples, since these factors are also important from the viewpoint of the theme of today's session.

1.2.1 Labor Force Participation of Women and the Elderly

In Japan, where the population is rapidly aging and the birthrate is dropping sharply, the government and firms have been promoting the active participation of women and the elderly in the labor market. For example, steady progress has been made in

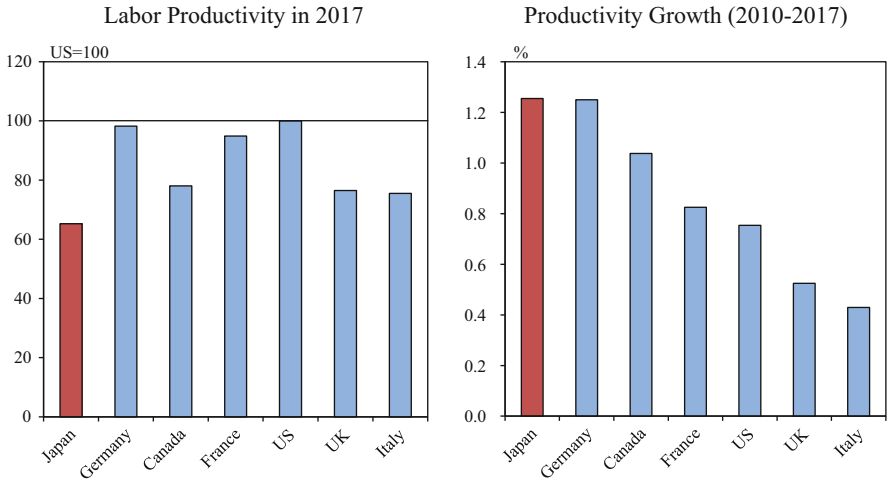

Chart 7 Labor productivity per hour worked. Source: OECD

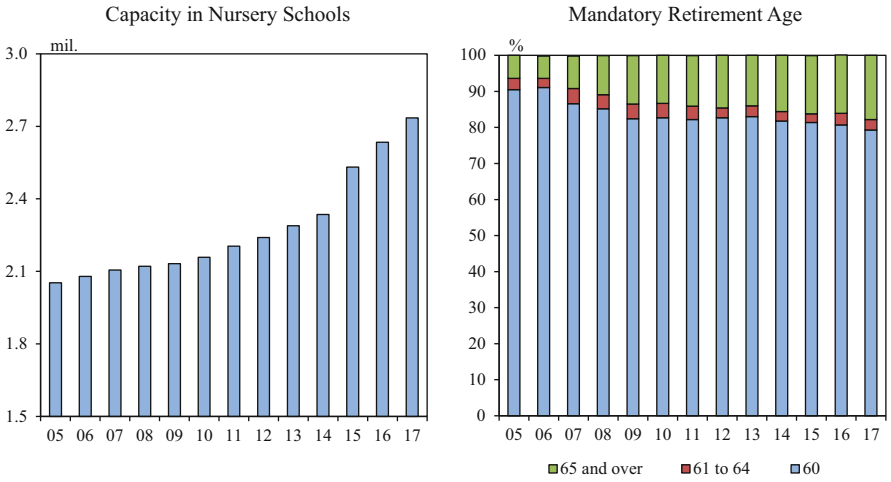

Chart 8 Women and elderly labor force participation. Source: Ministry of Health, Labour and Welfare

increasing the number of nursery schools and nursing homes as well as moves to extend or abolish the mandatory retirement age (Chart 8). As a result, the number of women and the elderly participating in the labor force has been increasing. The aging of baby boomers has also contributed to the rise in the ratio of the elderly to the overall workforce. Since wages for women and the elderly have tended thus far to be relatively low, these changes provide firms facing labor shortages with low-cost labor, thereby easing upward pressure on wages (Chart 9).

Share and Number of Employees

10 thous.

		2007	2017	Difference
Men	Under 60	48.7% (3,133)	44.1% (2,881)	-4.6%p (-252)
	60 and over	9.8% (628)	12.1% (790)	+2.3%p (+162)
Women	Under 60	35.6% (2,288)	35.6% (2,322)	+0.0%p (+34)
	60 and over	5.9% (378)	8.2% (538)	+2.4%p (+104)

Wage Structure

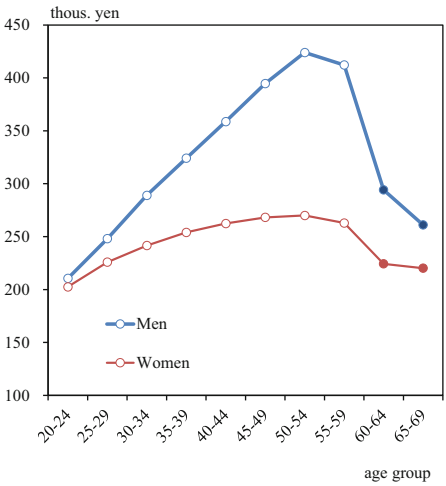

Chart 9 Employment and wage structure. Source: Ministry of Health, Labour and Welfare

Besides, although most women used to engage in jobs with simple and routine tasks, an increasing number of talented women have shifted to more professional occupations, leading to an increase in productivity. It has been noted that the easing of labor market conditions is also brought about by the diminishing of slack in terms of quality.

1.2.2 Future Anxiety

A possible decline in long-term growth potential of the economy and anxiety over future income in anticipation, for example, of cuts in pensions, results in a rise in firms' and households' reserve savings. Such anxieties also exert downward pressure on wages and prices by restraining spending. The hardships that people suffered in past serious economic downturns might also be exacerbating their anxieties. Japanese firms lack confidence in their long-term profit growth and are thus cautious about raising wages—particularly, base pay—that can lead to a rise in fixed costs (Chart 10). In addition, an increasing number of households are anxious about their future income and life plans, with the number of such households remaining at a high level since a surge in the 1990s. Their propensity to save money seems to have exacerbated price competition among firms, bringing about downward pressure on prices (Chart 11).

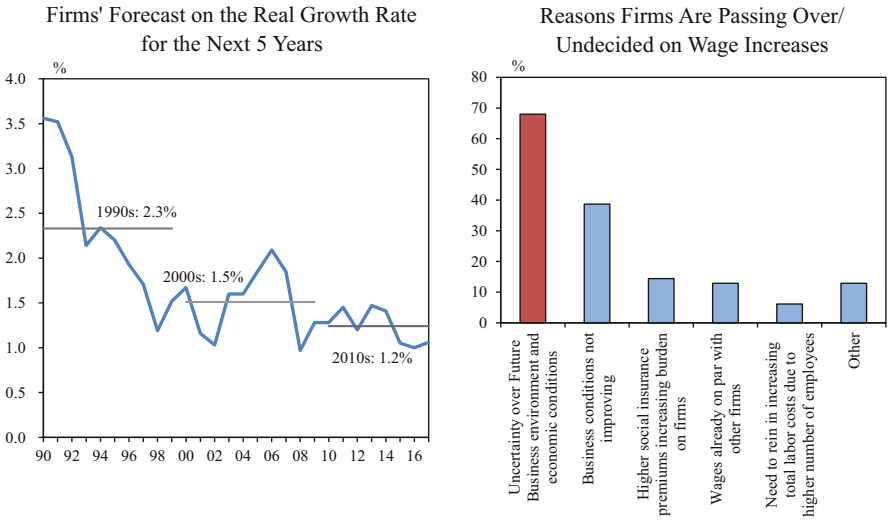

Chart 10 Business confidence and wage increase. Sources: Cabinet Office; The Japan Chamber of Commerce and Industry

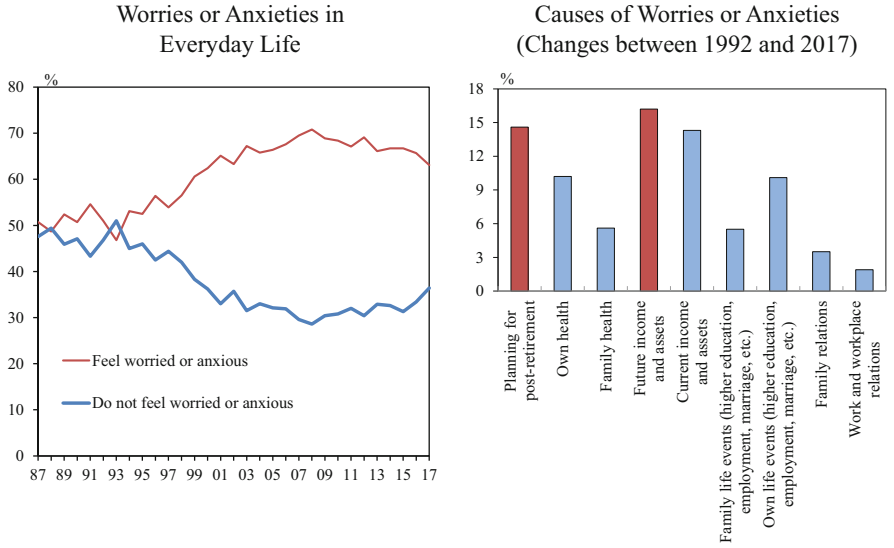

Chart 11 Anxiety of households. Source: Cabinet Office

1.2.3 Technological Innovation

Advances in information technology such as RPA and AI might also be contributing to a curb on growth in wages and prices. These technologies can contribute to improving the value added and raising sales through, for example, the development

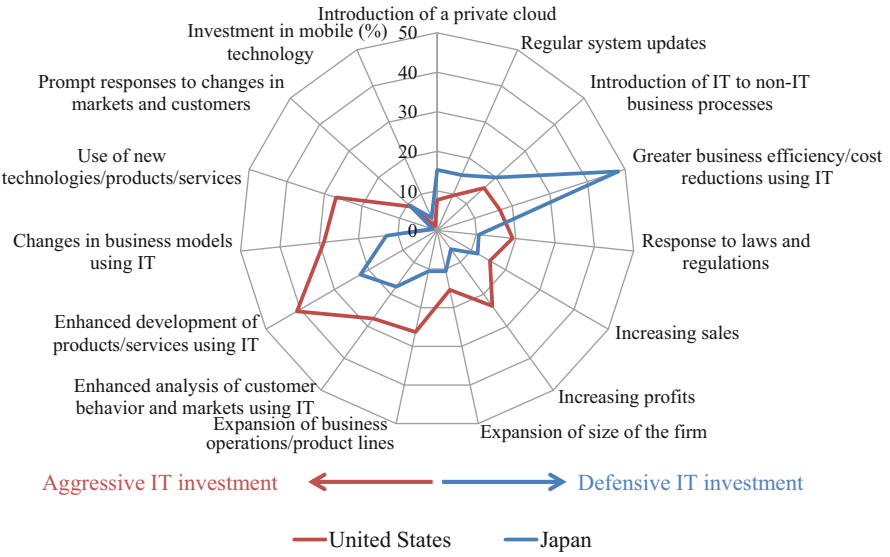

Chart 12 Purpose of increasing IT budgets. Note: 85 Japanese firms and 156 U.S. firms answered to the questionnaire. Figures in the chart indicate the proportion of firms that selected each choice. Since this was a multiple-choice questionnaire, the sum of figures exceeds 100%. Source: JEITA

of new products and services; they are not simply a means to push down wages and prices. However, few Japanese firms nowadays consider these technologies to be the key to expanding business opportunities in the market; rather, most firms tend to regard them as a means to enhance operational efficiency and cut costs (Chart 12). This tendency seems to lead to the easing of labor market conditions and downward pressure on wages and prices. Still fresh in our minds are the announcements made in 2017 by each of Japan's three major banks of their decisions to reduce the work load that corresponds to a total of 33,000 employees within the next 10 years through the use of information technology. Section 2 will elaborate on this topic, as it is a theme of today's session.

The widespread use of smartphones and the expansion of e-commerce are also contributing to sluggish price rises. Consumers can now easily refer to and compare a broad range of information on prices at the press of a button, and purchase goods and services even from a distance. It seems that these changes have increased consumers' responsiveness to prices, consequently somewhat accelerating price competition among firms.

1.2.4 Factors Specific to Particular Industries

In some industries, downward pressure on wages and prices is brought about by specific factors. For example, although the medical and nursing care industries are expanding rapidly amid advanced population aging, service prices in these industries

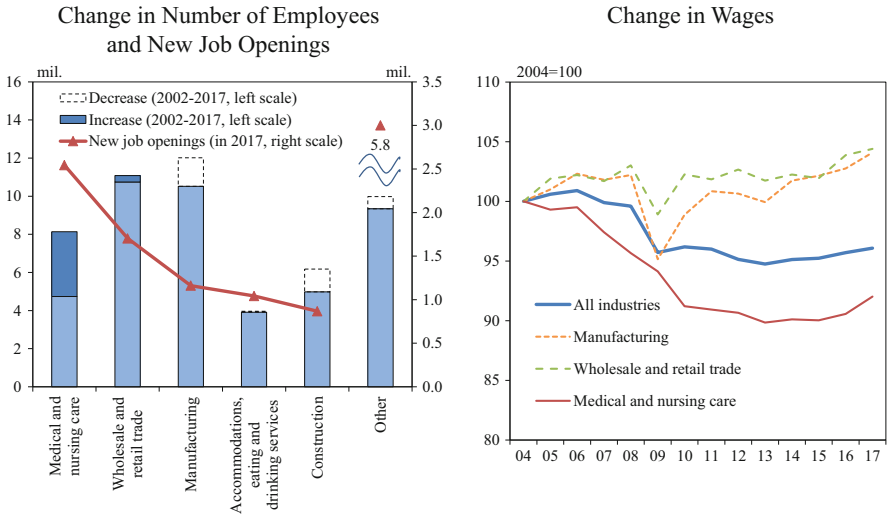

Chart 13 Demand for labor and wages. Source: Ministry of Health, Labour and Welfare

are controlled under the remuneration systems for medical treatment and nursing care. Thus, wage growth in these industries has been sluggish despite high demand in the labor force, the tightening of labor market conditions, and the remarkable increase in the number of employees (Chart 13).

1.3 Framework of Monetary Policy

As discussed thus far, it seems that both the reversal of hysteresis and the factors of a more structural nature have been constraining growth in wages and prices. With a focus on the reversal of hysteresis, which seems to be the more important factor for the time being, this is perhaps the place for a personal assessment of the current situation and what policy responses should be made to address the issue.

1.3.1 Assessment of the Current Situation and Monetary Policy for the Time Being

To reiterate the impact of hysteresis, the expansion of the supply side of the economy associated with the reversal of hysteresis seems to be restraining the upward pressure on prices exerted by an increase in demand. The active job openings-to-applicants ratio and the unemployment rate have been hovering at levels close to or above the peak level observed during the asset bubble period of the early 1990s, but the output gap has remained at a relatively low level. The aforementioned increase in labor

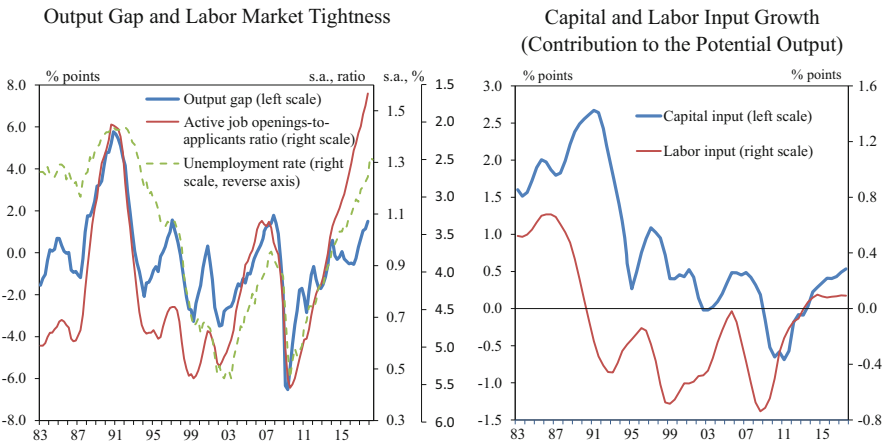

Chart 14 Output gap and changes in supply capacity. Sources: Ministry of Health, Labour and Welfare; Bank of Japan

input and labor productivity seems to have been easing the tightening of the output gap (Chart 14).

However, there is no need to be unduly pessimistic about the situation. There are two reasons why. First, the expansion of the economy's supply capacity associated with the reversal of hysteresis will not last forever. There are limits to the extent of such changes as participation of discouraged workers in the labor market, conversion of involuntary non-regular employees into regular employees, and streamlining of inefficient business processes. The accumulation of (human) capital is also expected to decelerate as firms approach the frontiers of technology and skills through the course of the replacement of aging capital stock and improvements in the education and training of employees. From a somewhat longer-term perspective, the effects of a curb on growth in wages and prices through the expansion of supply capacity are expected to wane in due course. If a rising trend in prices strengthens, inflation is expected to accelerate gradually toward the 2% that the Bank is committed to achieving, accompanied by a rise in the public's inflation expectations brought about through the adaptive formation mechanism.

Second, the reversal of hysteresis is itself a desirable change for people's lives. An increasing number of people are participating in the labor market in ways that meet their wishes, and firms are promoting a shift to more efficient and less wasteful working practices. Firms and employees are raising their competitiveness on the back of the introduction of new fixed investment and the development of employees' skills. Through these changes, the long-term growth potential of Japan's economy, which declined substantially in the past, is gradually strengthening again.

Although price rises are being constrained at present, the momentum toward achieving the price stability target is being maintained. Furthermore, changes that will lead to improving people's lives and strengthening the economy's competitiveness are progressing steadily. It can be said that price rises are being restrained only

temporarily as a side effect of such positive changes. In fact, amid the ongoing reversal of hysteresis, Japan's economy seems to be in a very favorable condition on the whole. It is essential, therefore, for the Bank to continue to conduct monetary policy under the current framework for the time being to maintain accommodative financial conditions, so that it can also continue to support the reversal of hysteresis.

1.3.2 Future Policy Conduct in the Longer Run

The next issue is a longer-term perspective; how monetary policy should be conducted in the future. The reversal of hysteresis might take some time. The supply side of Japan's economy may still be fairly subdued as a result of past successive serious economic downturns. Meanwhile, changes in the supply side of economy—that is, the reversal of hysteresis—proceed at a slow pace by nature. There is no consensus in academic or other circles regarding the extent to which and the time required for hysteresis to be eliminated. However, experts have argued that, under continued strong economic expansion, much of the hysteresis can be reversed, given time.[7]

As for the outlook, the accommodative monetary policy might be maintained over a longer period, since the reversal of hysteresis could take a long time. In that case, it will be necessary to monitor the situation carefully to avoid any serious distortion in the economic and financial environment under prolonged accommodative financial conditions. The following two factors particularly warrant attention.

First, it is necessary to keep a careful watch to prevent any significant supply-demand imbalance. Changes in the economy's supply capacity proceed at a relatively slow pace. An excessive increase in supply-side constraints under prolonged accommodative financial conditions is undesirable. If economic swings amplify significantly, there could be adverse effects, such as inefficient resource allocation. The Bank may then be rushed into tightening its monetary policy, possibly resulting in an interruption in the course of the reversal of hysteresis. In this situation, prices might rise in the short run, but this will not be stable over the long run. In realizing the reversal of hysteresis, focus should not be placed solely on tightening the output gap, but rather on maintaining moderately tight supply-demand conditions for as long as possible.

Second, it is also necessary to pay due attention to the stability of the financial system. In an environment where accommodative financial conditions have been maintained over a long period, the risk of an accumulation of financial imbalances will be heightened. According to the Bank's assessment presented in the April 2018

[7]Hall (2014) expresses the view that the extent to which and the time required for hysteresis to be dissipated differs for each element of the supply side of the economy, whether it is TFP, capital accumulation, unemployment, or the labor force participation rate. Kocherlakota (2014)—expressing agreement with Hall's view—notes that much of the hysteresis can be reversed ultimately, referring to the fact that hysteresis resulting from the Great Depression was eliminated under vigorous demand during World War II.

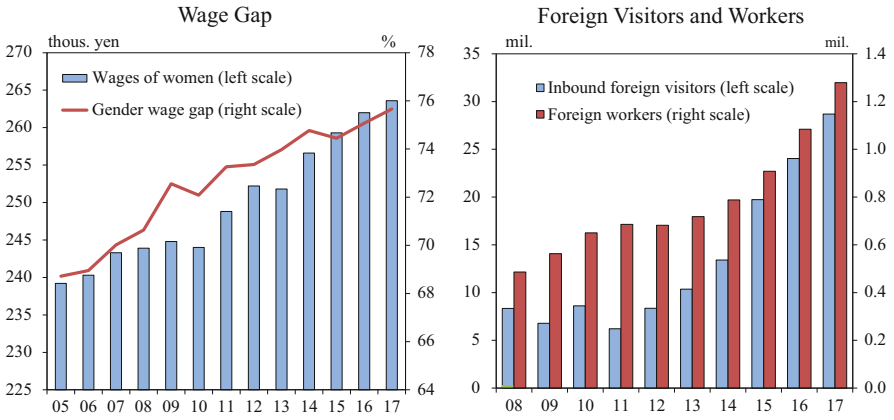

Chart 15 Structural reform. Sources: Ministry of Health, Labour and Welfare; Ministry of Land, Infrastructure, Transport and Tourism

Financial System Report, although Japan's financial system as a whole is not showing any signs of overheating, some indicators, such as the lending attitudes of financial institutions, are very close to a state of overheating. Furthermore, if the low interest rate environment continues and downward pressure on financial institutions' profits becomes prolonged, the functioning of financial intermediation may be undermined.

Under the "yield curve control," which the Bank adopts as one of its policy tools, as inflation expectations rise and the long-term growth potential of the economy strengthens in accordance with the reversal of hysteresis, monetary easing effects will be enhanced through a rise in the natural rate of interest and a decline in real interest rates.[8] When conducting monetary policy in the future, the Bank—while taking account of the changes in the external environment—should consider without prejudgment the most appropriate policy so as to avoid any serious distortion in the economic and financial environment.

Upward pressure on wages and prices can be increased by appropriately addressing the factors of a more structural nature mentioned in Sect. 1.3. In fact, wages for women are increasing steadily on the back of efforts by the government and firms to eliminate the wage gap between men and women. In addition, with the assumption of a further decline in population, the government is aiming to boost the number of foreign visitors and workers in order to raise the long-term growth potential of Japan's economy (Chart 15). It is also working toward developing IT-oriented human resources that are expected to create new value rather than simply raise efficiency and cut costs, so that IT-related technological innovation can be used

[8]Under the "yield curve control," the Bank facilitates the formation of short- and long-term interest rates that are considered most appropriate in light of the 2% price stability target. In the Bank's current guideline for market operations, the short-term policy interest rate is set at minus 0.1% and the target level for yields on 10-year Japanese government bonds is set at around 0%.

for more creative and innovative economic activities. To raise the wages for nursing care workers, the government plans to make special and temporary revisions to regulations on the remuneration system for nursing care in fiscal 2019.[9] Even more of these proactive initiatives and efforts are expected to be made by the government and the private sector. Yet, as hysteresis and the factors of a more structural nature that have been discussed thus far cannot, by their very nature, be distinguished explicitly, monetary policy and structural policy should address these challenges interactively.

2 Fiscal Policy and Structural Reform: Fourth Wave of Industrial Revolution and New Education[10]

2.1 Recent Economic Developments in Japan

Abenomics has been successful. Japanese economy recorded positive growth for the eighth consecutive quarter through the end of 2017, which was the longest period I know since the bursting of the asset bubble in the early 1990s. Japan has achieved virtually full employment, with labor demand so high that new graduates are able not just to find jobs, but to choose them, while even the market for temporary employees has become tight. Unemployment rate is now at 2.5%, which is close to the lowest level during the bubble period. Now, the economy looks to be getting out of decades-long stagnation.

There is one key area where progress seems to be lagging: inflation. Japan's inflation rate is still fairly distant from the Bank of Japan's price stability target of 2%. It is beneficial to achieve the 2% target, which provides some room for the future monetary policy conduct. Also, 2% target is a global standard shared by major advanced economies, and therefore, pursuing the target could help stabilize foreign exchange rates in the long run. Yet when it comes to ordinary people's wellbeing, meeting the inflation target is not always the best option. Of course, reining in high inflation is beneficial, as it preserves the value of existing money. But raising below-target inflation to 2% leaves people worse off, as it causes their savings to lose value continuously, thereby undermining their prosperity.

The late Arthur Okun created the so-called misery index, which goes beyond headline GDP growth or the unemployment rate to provide insight into how the average citizen is faring economically. Okun's index—the sum of the inflation and

[9]The Cabinet decided that the projected tax gains accrued from the consumption tax hike scheduled to take place in October 2019 will in part be used to raise monthly wages for nursing care workers who have been in service for more than 10 years by an equivalent of 80 thousand yen on average.

[10]This part, written by Koichi Hamada, consists of four sections: The introduction; followed by the second and third sections that discuss policy recommendations for the fiscal policy and structural reform; and the fourth section on the issues for discussion on the monetary policy.

unemployment rates—is based on the assumption that an increase in inflation, like an increase in unemployment, creates economic and social costs for a country.

The reality is that the inflation target is a means to an end—to facilitate full employment and faster GDP growth—not an end in itself. And substantial progress toward that end has been made, despite the failure to meet the Bank of Japan's inflation target. As suggested in Sect. 1 of this paper, the inflation rate has been subdued by some persistent or structural factors, which does not indicate any signs of stagnation of the economy.

Abenomics is composed of "three arrows": aggressive monetary policy, flexible fiscal policy, and growth strategy including structural reform. Ever since the introduction of Abenomics, the first arrow, monetary policy, has played a central role. The Bank of Japan has accelerated its monetary easing. However, it is natural for the monetary policy to reach a plateau, by getting to the zero lower bound of interest rate. In other words, there is a limit to what Abenomics can recover the economy solely with the monetary policy.

In this regard, the importance of the second and third arrows is increasing. The rest of this paper will discuss policy recommendations for the fiscal policy and structural reform. In my view, fiscal policy can be more flexible while paying more attention to education, which is the source of the future growth of the economy. Given the expected revolutionary change in our industry brought about by the surge of new technologies in IT field such as AI, education systems should be renewed to adapt to the brave new world.

2.2 Need for More Flexible Fiscal Policy

The second arrow of Abenomics is flexible fiscal policy. The need for the balanced budget should be considered with its opportunity cost, as priority should be placed on creating human capital, and education of young children is crucial to the future growth of the economy. This is recently well explained by the Fiscal Theory of the Price level (FTPL).

Incidentally, a folk tale from ancient Japan explains well the basis of the Fiscal Theory of Price Level. In the fourth century in Japan, the Emperor observed his country from a small mountain near his palace. He hardly saw smokes from cooking coming out of people's kitchens. He learned that his people, most of whom were peasants, were in hard economic conditions. Therefore he suspended the tax on his people for 3 years, while fences of his own palace were in disrepair and stars shined through the leaks of his palace roof.

After 3 years, he climbed the mountain and observed clouds of steady smoke curling up from hutches. He was very satisfied with the effect of the moratorium on the peoples' tax, and his people in turn gathered to volunteer to repair his palace. No wonder he was known as Nintoku, Emperor with Virtue and Benevolence.

Almost two millennia later, the Japanese economy has been suffering from the lack of demand in consumption, due partly to effects of the steep consumption tax

hike in 2014, as well as the expected additional future hike. In other words, excessive worries about the solvency of the government have caused the Japanese private sector to lose appetite for consumption.

Here echoes the message of the Nintoku story: People's spending is dependent upon their wealth, and not on the wealth of the government.

The solvency of the government has preoccupied the minds of policymakers not only in Japan but also throughout the world. Policies reflect the premise that a balanced budget is the norm to be observed at all times. In the United States, the Republican "Tea Party" who believed this doctrine blocked many normal functions of the U.S. local and state governments. Euro area's basic difficulty also stems partly from the strict fiscal rule to limit the member country's deficit/GDP ratio.

In the meantime, a new wave of doctrine, Fiscal Theory of Price Level (FTPL), is gaining momentum in macroeconomics. At the renowned Jackson Hole conference in 2016, a leader of FTPL, Princeton's Christopher Sims, gave a keynote speech that explains otherwise esoteric FTPL to a general audience.

The aggregate spending of people, that is, consumption and investment expenditures, are determined by choices of agents in the private sector within their balance sheets now and future. The private total wealth is the sum of the domestic real wealth plus net worth outstanding abroad, on the one hand, and the (high powered) money plus public debt, on the other. That is to say, private expenditures are determined by the net wealth of the nation plus the liabilities of the Bank of Japan and the government.

Interestingly, Sims gives a clear diagnosis of the problems of the Japanese economy with FTPL. First, as a traditional Keynesian, he argues that Quantitative Easing (QE) is a mere exchange of money and its close substitute, i.e. zero interest bonds, and it will become less and less effective as a stimulus on the aggregate demand.

Second, as in Europe, the negative interest rate policy (NIRP) worked rather well as a means of affecting market interest rates into a negative zone by shifting the yield curve down. But it impairs the balance sheet of the private sector, because this policy is in fact a tax increase on financial institutions.

Keeping in mind the logic of the FTPL that the private balance sheet depends on the liability of the government, we need to have rather flexible views on the government debt.

Having said that, I would add that the FTPL does leave open some of the problem of a large government debt.

Under the inflationary situation, a large amount of public debt would tempt the government to inflate the economy. This seigniorage right was often abused since the age of monarchs and resulted in a uniform inflation tax on asset holders. A large outstanding government debt impairs fiscal mechanism because higher taxes are needed to finance the same level of real government spending.

On the one hand, during the recession or stagnation, the existence of public debt helps to recover the economy. Additional interest payment would burden the economy, but public debt would save the economy by enabling the economy to operate at the full employment level.

Neo-Ricardians would argue that public debt in the hands of people is worthless because behind each public debt hidden is the tax liabilities of our future generations. But, as Ricard himself recognizes, people are never so smart. And even when people are rational, Paul Samuelson showed in his introduction of overlapping generation that keeping public debt in the hand of people would help the economy from the Koopmans-Phelps inefficient state.

2.3 Structural Reform: New Education to Adopt to IT Industrial Revolution

The third arrow must be closely related to the theme of this session, the impact of technology, unemployment, and governance. The tide of the fourth wave of industrial revolution, that is, revolution involving artificial intelligence, runs very high. In the past, technological innovations helped humans to work more efficiently, and accordingly, wages were likely to go up. Now, robots are displacing humans in the workplace; they affect wages and in the worst case, cut jobs.

One example is Uber: Its customers enjoy fast and convenient transportation services while regular taxi drivers may be forced out of the market. Similarly, more than half of market transactions are said to have been executed through computer-based automatic trading, which may have increased volatility in stock markets.

Another case is Google Translation: When I needed to translate my essay into Japanese, a friend suggested me to use it, and it worked. Translation came out in an instant and the quality was much better than I expected. It needed some editing of course, but at least I could spare translation services of graduate students.

When I talked to simultaneous interpreters, one of the highest paid professionals, that machines can learn fast and may take over your jobs in future, they just chuckled. In fact, an AI chess player has beaten a professional human by accumulating past data of strategies, and we may meet AI interpreters quite soon.

Humans must not be replaced by AI, but rather, should take command of it. Masayoshi Son, a billionaire industrialist of East Asian origin, now invests in Uber, taking advantage of its new technology. He certainly stands out as a role model for future business professionals.

Now I will touch upon the growth prospect of Japan with decreasing population, and the need for excellence in human capital to overcome the situation.

Japan now faces declines in the overall population and working people. In order to enjoy growth under such situation, it is mandatory for Japan to develop human capital. Prime Minister Shinzo Abe puts the creation of well-educated labor as the center pillar of Abenomics. He plans that a half of increased revenues to be raised from the consumption tax hike in 2019 should be spent on the education of pre-school children.

According to Nobel laurate James Heckman of the University of Chicago, education of young children has a distinct impact on the nation's productivity.

According to an inclusive, optimistic estimate including its external health effect to the community, it has about 16–17% rate of return, more modest estimate gives the return of 6 or 7% higher than most real returns in equity investments. Abe would be a better ruler if he can pass on the future generation of Japan a stock of better educated children than restoring a richer vault in the government.

Increasing spending on education is certainly important, but more critically important is how to improve the quality of education. I have a serious concern about the present education in Japan, one that emphasizes memorizing facts and computing skills rather than thinking and learning.

The education system in Japan, and perhaps that in South Korea as well, are under the long lived tradition of the classic examination system of Chinese bureaucrats that continued into the beginning of the twentieth century. There, memorizing and recitation of classics were emphasized.

There is a popular TV program called "Jeopardy" in the United States, similar to parlor game called "Trivial Pursuit," which asks quite detailed but trivial-to-the-world type of questions. The Japanese examination system, seems to me, is like Jeopardy, the game for pleasure in the United States, but systematically played in Japan to screen students across their intellectual levels.

Under such a system of education, students do not learn the basic skills of communication and leadership. They compete with skills of guessing even if they do not know the right answer. A TV program also exists in Japan that is a quiz show that asks trivial questions, the answers to which come from pure memory or, as a good tactics of examination, guessing power of the right solution.

Certainly, this system of meritocracy is superior to nepotism. Here is an implicit assumption that a positive correlation exists between with excellent capacity of memory and calculation on the one hand, and creativity as well as communication on the other. I agree with the premise. The problem is whether the correlation is perfect. Competition for university entrance that has been determined by a child's cognitive capacity, reading, memorizing, and calculating is over-emphasized.

This kind of education is symbolized by a technical word, Hensa-chi, literally translated as "standard deviation," which means how much, measured by the standard deviation, a grade of a student differs positively or negatively from the mean.

Students with higher positive hensa-chi enter better high schools and better colleges. Students with superior hensa-chi are encouraged to become doctors just because its entrance exam is difficult, even if they have little interest in the medical profession.

Students in good universities compete with their memory power in the qualifying examination for bureaucrats. A person who achieves high scores in the examination will become a bureaucrat in influential ministries such as Ministry of Finance, Ministry of Economy, Trade and Industry, or Ministry of Foreign Affairs. Students with good grades also follow the elite course in excellent firms like Toyota and Sony.

Those who win the competition in memorizing and calculating will be treated well, if they have aptitude to the job of bureaucrat. This will continue throughout their lifetime, and, particularly in the case of bureaucrats, until their retirement age

when they may find luxurious landings by the parachuting from the heaven (amakudari).

I do not blame that human capital with excellent cognitive activity are treated well. What I fear is that those who are talented in other aspects and activities are disappointed and neglected because they get insufficient hensa-chi. The most serious problem is that many who are talented in their own specific skills or innate ability are discouraged by the system from developing valuable skills that would contribute to the nation. Also, those who showed a high achievement in cognitive skills and thought themselves in the elite class, but who did not show enough imaginative and leadership skills needed in the elite class, are discouraged by the lower prospect of promotion and show sometimes even deterioration of skills.

The meritocracy in Japanese style has lost its positive value now. Under the wave of AI revolution this education system encourages those who will be replaced by robots and discourage those who may take clever advantage of AI. Under this education system, the next Masayoshi Son would be hardly nurtured.

2.4 Additional Comments on Monetary Policy

Here will be some additional comments on the first arrow of Abenomics, monetary policy as the issues for discussion.

In international linkage of monetary economy, inflation targeting will work when the target of inflation is the same across countries because it is most likely compatible with more or less stable exchange rates among them.

The audience may think that a problem occurs if most countries assume a particular inflation rate as the target, and a country assumes a lower rate of inflation by such reasons as we have discussed so far. We will argue that this may not need to bother policymakers. Very open economies may be needed to adjust the inflation target if a dominant economy of the world may change its own target. The result comes from the fact that under the flexible exchange rate regime, essentially for the world economy the number of monetary policy instruments equals the number of objectives, i.e., rates of inflation 0 in the Tinbergenian calculus.

Under the flexible exchange rates, basic macroeconomic policy tools are monetary policies of participating countries, and the objectives are rates of unemployment. So in a flexible exchange rate regime of n-countries, the number of objectives and the number of instruments are equal. This would keep the Tinbergenian calculus consistent. Under the fixed exchange rate, this calculus is disturbed because countries have to worry about the balance of payments requirement (Hamada 1969 and Hamada and Sakurai 1978).

The present problem in the international financial markets and macroeconomic policy interdependence is not centered on this issue. First, because of the zero lower bound, each economy's monetary policy hardly achieves its own objective. In addition, the normal functioning of interdependent international financial markets seems to have been disrupted perhaps because of excessive regulations in the United

States. Even the basic uncovered interest parity is often blocked in the market. In short, the difficulty is not in interdependence of tools, but in the inefficacy of each tool.

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Technology and Trade Wars

Luigi Paganetto and Pasquale Lucio Scandizzo

Abstract An increasing globalization of value chains has been one of the most important features in the world's economy. Intermediate or processing trade has been increasing at a rapid pace, becoming a crucial part of world trade. Many countries' exports—including those of China—are economically less significant than they look, because they consist in imports, subsequently re-exported, and intermediates, modestly reprocessed. The effects of international trade on labour markets are controversial, causing a reshaping of the value chain or slowing down the unwanted transfer of technology. However, the US is well positioned for a trade war, since its limited reliance on foreign trade. As the recent economic crisis has shown, trade may be powerfully levered by financial flows to spread contraction effects internationally. The US is concerned for its technological leadership that may be compromised by a continuous leakage of technologies to Chinese firms and by their tendency to copy high tech products and steal intellectual property rights. China is adopting policies to upgrade technology and product quality, aim to struggle against the rising pollution and the falling exports. Nevertheless, US may contrast technology exchanges across borders in different ways. A real multilateral cooperation and international institution building appear to be the only response not only crucial and practically effective, but also commanding an image of vigor and reach, capable to overturn the current expectations.

1 The Raise of World Trade in Intermediates

The past 50 years have been characterized by a progressive internationalization of the value chains. Intermediate or processing trade has been increasing at a rapid pace. As a result, intermediate inputs have become an important part of world trade, as they are increasingly being sourced through imports rather than domestic production. Intermediate inputs now represent more than half of the goods imported by

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OECD economies and close to three-fourths of the imports of large developing economies, such as China and Brazil. Intermediates thus account for a significant chunk of international trade, even though they present large differences across countries. According to OECD estimates, imported intermediate input content accounts for about one-quarter of OECD economies' exports, and the European Central Bank (ECB) estimates that such imports accounted for about 44% of EU exports (or 20% for imports from outside of the EU) in 2000, ranging from about 35% in Italy to about 59% in the Netherlands. In the United States, imported intermediate input content in exports reached about 10% in 2005. Among emerging economies, imported content's share in exports is particularly high in China—about 30%, or twice that for India and Brazil.

This "intermediate revolution" has profoundly affected the structure of international relations, in several ways that are difficult to appreciate even for business men and trade operators. In the first place, the map of comparative advantage is redesigned, since specialization increasingly concerns distinct segments of the value chain rather than vertically integrated sectors. At the same time, while maintaining their position of competitiveness based on current comparative advantage, countries are dynamically motivated to attempt to "climb" international value chains in the attempt to capture the segments that carry the highest value added. In choosing their production and trade mix, countries are thus moving in multidimensional space spanned by goods characterized by different levels of the value chain. As a consequence, their ultimate choice is likely to be a much wider range of products than it would have been the case where all items of the value chain had to be provided nationally. The products that carry the highest value added, furthermore, are increasingly immaterial goods, such as information and embodied and disembodied knowledge, such as, in particular, technologies and ICT products and know how of various forms. Finally, the network emerging from the new trade patterns is also profoundly different from the traditional configuration of partnerships based on spatial and cultural contiguity between countries, with locally integrated trade blocks. The new networks are much more widely spread and follow a hub and scope design, as they reflect a hyper-connected world where every country tends to trade with every other one, but few major hubs locally mediate the larger part of the exchanges.

Other consequences of this new economic order include the fact that bilateral trade balances tend to become less meaningful as indicators of real exchanges, since they fail to reflect value-added (e.g., the value of exports minus imported inputs). Many countries' exports—including those of China—are also economically less significant than they look because they consist of imports that are subsequently re-exported and intermediates that are modestly reprocessed. In the case of an iPod Touch, for example, China adds only $4 to the value, but each one registers as a $150 entry in the U.S.–China bilateral deficit. Various studies find that China's surplus with the United States, for example, is 20–40% lower when estimated in value-added terms—reflecting the fact that only 20–35% of China's exports to the U.S. contain domestic value-added. Japan's and South Korea's balances with the United States, on the other hand, may be understated, as China relies on content imported from

them to produce its exports (as they have exported more parts to China, Japan's and South Korea's share of U.S. imports has declined).

2 The Role of Globalization

Globalization as a phenomenon of progressive extension and integration of transaction patterns across the world has affected the exchange of goods and services with a vertiginous increase of international trade. Financial globalization, however, not only has played a key role in expanding the size and the scope of "real" transactions, but it has also has expanded and deepened the ways these transactions can be formulated, extended and finalized through increasingly complex and low cost contracts. The process of financial broadening and deepening, moreover, has found immense support in the model of hyper-connected financial networks that has gradually but securely been established, with the help of (and by spurring directly and indirectly) a variety of product and process innovations. The end effect of these developments has ultimately been the creation of a financial virtual space of global nature, characterized by instant communication, very low transaction costs and an increasing population of traders with high willingness to take risky positions.

Increasingly aggressive risk taking is not the only phenomenon characterizing the new finance, however. The extension of the finance network on a global scale, in fact, has produced a parallel rise of uncertainty. This is due to the fact that in a highly interconnected world, risk tends to spread rapidly and unpredictably from the agents and the locations where the risk positions were originally taken to other agents and locations that may have nothing to do with those positions. Because of the effect on risk diversification that pervasive exchange tends to have on the whole network, furthermore, the risk portfolios of investors across the world tend to become more and more alike, with a tendency to transform diversifiable into systemic risk. The fact that risk diversification across the globe tends to equalize investors' portfolios has also the effect of reducing the rates of return, thereby requiring more aggressive risk taking, in order to strive for higher profits and survive in a globally competitive markets.

To what extent these developments support economic growth and innovation? On one hand, the reduction of transaction costs and the rise of hyper-connected real and financial markets increases the supply of immaterial goods, such as credit, as well as more nuanced resources such as information and knowledge, and thus should allow more investment and growth. On the other hand, the increase in uncertainty and the aggressive risk taking imply that investment will fall and its composition will change in favor of riskier ventures, on average more prone to failure, but also perhaps more conducive to extreme forms of success of leading innovators willing to reach for more adventurous enterprises. The hierarchical nature of the hub and scope typology of financial networks also means a higher degree of inequality across users, with small and medium firms often "squeezed out" of the more affordable financing and low and moderate risk takers displaced by more aggressive ones. Creative

destruction and anticipated obsolescence due to runaway technical change contribute to global anxieties, heightened perception of risks and, paradoxically in investing to convert technical change into meaningful innovations. Thus start ups and innovative micro firms may tend also to be penalized in spite of the higher risks that global networks allow to afford to larger ventures. At the same time, however, some innovations emerge whose extreme features of "thinking out of the box" afford their proponents enormous market success. In an emerging "superstar economy", where success is increasingly confined to a few winners and failure generalized to many losers, globalized networks also create uncertainties by destabilizing the traditional mechanisms of assignments of rights and access to authority and power, including job security, social hierarchies and industrial relations. The ensuing loss of confidence in the future is thus magnified by the loss of traditional certainties and the creation of new and larger uncertainties, where governments and political elites are held responsible for their failure to respond to the demand for well being and security of ordinary citizens.

On balance, the picture that emerges from this view of the financial versus the real economy is strikingly different from the traditional dichotomy suggested by simplistic economics. The expansion of the financial networks, in particular, plays a larger role in the negative trend in worldwide real investment that has occurred in the past years, despite an apparent saving glut. This also helps to explain the pattern of financial strains during the crisis, which also precipitated the fall of private and public investment in Europe and around the world. The deflagration of global uncertainty through the spread of the subprime crisis and the displacement of investors by adversely selected aggressive risk takers resulted in a disruption of the mechanisms of project selection, and investment financing that in turn disrupted the whole chain of both local and global intermediation.

3 Four Effects of Processing Trade

Global trade in intermediate products has profound consequences on the international economy since, to some extent, it has progressively transformed exchange across countries in exchange across value chains. In turn this has implied that comparative advantage is increasingly defined by opportunity costs related to value added rather than to final production and that dynamic advantage depends on progress of intermediate suppliers along the value chain to capture higher and higher shares of value added. Rather than a static model of specialization, trade is evolving toward a highly dynamic model of evolution characterized by dominance and superstar effects across increasingly hierarchical and concentrated hub and spoke networks. In this context of transformational change, four main effects can be singled out: First, bilateral imbalances tend to become larger, but they are overstated by the double counting and the parallel trading that goes hand in hand with repeated exchange of the same good at different levels of processing. Imbalances, in fact, are much smaller if accounts are compiled in value added terms.

Second, trade statistics themselves are inflated by double-counting, with the result that world trade is not any longer a good indicator of overall economic activity, since it tends to overstate both the upper and the lower phase of the cycle. Third, trade is more volatile and countries are more vulnerable to external shocks through their multiple value chain interdependencies, implying higher risk levels, more diffused uncertainty, and the tendency of specific risks to be transformed into systemic risk. Finally, technology both in its embodied and disembodied form has become a major element of international trade. This is due to the fact that value chains require a certain amount of information to be available to intermediate input suppliers to be able to use technologies and/or to experiment innovations. Furthermore, intermediate goods themselves often carry a critical amount of information with themselves as they represent a form of reverse engineering of the process to which they contribute. As a consequence, technology transfer through contractual agreements, or non consensual means such as copying, imitation, or straight out piracy has become both easier and more common as a practice linked to trade.

4 Trade and Labor Markets

The effects of international trade on labor markets is controversial. Comparative advantage tends to shift employment of low skilled labor to developing countries, but technological progress (digital economy and automation) reduces the overall demand for routine jobs, while increasing demand for non-routine and high skill ones. In low income countries low level jobs tend to increase alongside with production of labor intensive products, but on-shoring and technological progress reduce this process. In high income countries labor employment is reduced as a joint consequence of increases in capital intensive products, automation and technical progress with unclear effects on job polarization. Trades in intermediates and competition for higher positions in the value chain are even less clear and predictable. As emerging countries increasingly specialize in high tech intermediates, their shares of value added tends to increase and higher salaries to ensue with reverse migration from developed countries. The development of smart industries and services, incorporating technologies such as the internet of things and 4-d printing at the same time causes some manufacture to return to developed countries, but reduces their competitiveness vis a vis emerging ones. These new technologies in fact are based on a radically different mix of skilled, semi-skilled and automated labor, with almost no place for unskilled workers. As a consequence, jobs polarization tends to be reduced overall, although it may tend to increase as a wedge between different skill levels.

Higher levels of automation will be the main feature of the new global economy, but with very different characteristics from the already experimented raise of the industrial robots in the past decades. Machine learning and artificial intelligence (AI) innovations imply a structural shift in the value chains with intangible intermediates taking the lead over the traditional high tech components and making crucial

imprints on the value chains, that will reposition the rank and the role of its contributors. AI components, in particular, will depend on key inputs from science and technology that will be far more important than the final products in determining the value added produced and the share of its contributors along the vertically integrated sector. Product variety will still be a major driver that will increase value added, by marketing the IA intermediates in many different forms, but both the intangible nature and the sophistication of the new technologies can be expected to valorize highly skilled labor in major ways along the entire value chain through multiple "superstar effects". These effects, that are already well known from the non linearities characteristic of such markets as those for art and sport star performers, tend to generate extreme forms of polarization affecting mostly the highly skilled professionals.

5 The Role of Multinationals

The new model of trade in intermediates and technology goes hand in hand with the phenomenon of the Multi-National (MNs) corporations and their increasing, and paradoxical role as national champions of large countries such as the US and China. The most convincing response of the modern economy to the raise of the MNs in association with the development and the diversification of the international value chains stems from Coase (1937, 1960, 1992) and from the neo-institutional school of theoretical economics. According to these theories, the enterprise is born as an alternative institution to the pure exchange market, because it significantly reduces transaction costs. In this interpretative context, the MN appear to be a type of company that has found a particularly effective organizational and operational key to reduce transaction costs related to the exchange of goods and services, which can be produced by using technologies and production methods internationally transferable. For these goods and services, in other words, the MNs exploit economies of scale and purpose by restructuring the value chains in ways that exploit the potential economies deriving from arbitraging prices of intermediate (and not only final) goods and services across the national borders. These economies allow them to reduce the transaction costs of domestic markets, through operations of vertical and horizontal integration of production, as well as strategic articulation and location of the various stages of production.

More specifically, multinational companies can be considered "sets" of contracts, which take the place of bilateral contracts (which should take place between different agents of different countries), which would characterize international markets in their absence. From this point of view, therefore, these companies destroy a certain amount of international trade that would occur in their absence, through contracts signed from time to time by importers and exporters. Since they reduce the transaction costs related to these exchanges, however, they create an additional amount of trade that would not occur without their presence. This means that in the beginning the creation of a MN, as for free trade areas, increases the global well-being if the

amount of trade created is greater than the amount destroyed. The more than significant volume of the exchange between MNs (about 50% of the total trade attributable to them) should therefore be attributed to the fact that, by definition, these companies internalize contracts that otherwise would have resulted in "external" market exchanges. It is therefore natural that these contracts are, in turn, "internal" exchanges with the MNs themselves. It should also be noted, in this regard, that the large size of the multinationals can be explained by operating "in leaps and bounds" of transaction costs, in a context of uncertainty. In this framework, the expansion option for the company is exercised only if the expected benefits reach the level of a minimum threshold. MNs could therefore be characterized as those companies that, in addition to having potential competitive advantages related to know-how and technology, see their strategic variables, and in particular demand and prices, reach the critical threshold to jump from local to global players, where the discontinuity between the two is above all determined by uncertainty.

The effects of replacing and creating international trade do not depend, however, only on internal economies and on the reduction of external economies induced by the IMs. As is well known, in fact, the pure theory of international trade, which refers to the Hekscher-Ohlin model, shows that, in the presence of identical technologies and preferences in different countries and constant or decreasing returns to scale, the movements production factors tend to replace international trade in goods and services (Mundell 1957). In this regard, IMs can be considered a particularly effective tool for this replacement through so-called tariff jumping. IMs can, in fact, evade a tariff on imports, creating a branch in the country in question and locally producing what would have been imported without the tariff.

If the technologies and preferences are not the same, however, or in the presence of increasing returns to scale, the trade in goods and the international movement of factors are no longer necessarily substitutes, but can be complements. With different technologies, for example, each country will export the good it is capable of producing with a "superior" technology from the point of view of the comparative advantage, as in the Ricardian model. In this case, supposing to start from a situation in which two countries (which could be the North and the South of the world) present the same relative prices of the factors, the relative price of the goods will converge towards a common level. However, this will cause an increase in the relative price of the factor used intensively in the exported good (the "export factor") both in the North and in the South, so that the factor price will diverge between the two regions. In each of these regions, therefore, we will have an internal migration of export factors and an external migration of the other factors. If the North exports intensive goods to "higher" factors, such as human capital, knowledge and technology, it will export physical and financial capital and import human capital, while the opposite will occur in the South. This will have the effect to increase the volume of trade, but also aggravate the differences between North and South. The movement of factors will be complementary to the international trade in goods (Ethier 1998).

If preferences are not the same, the range of possible effects of factor movements will also be wider. For example, the export of capital from the North will decrease its relative price to the South, or its real price, but its nominal price will not necessarily

decrease in the same proportion and could also increase. In fact, everything depends on the basket of goods consumed by families. If the families of the South prefer intensive goods in the imported factor, in fact, the capital inflow may lead to an expansion of the consumption of these goods. Consequently, the nominal price of physical capital will not decrease in the same proportion as the real price and may even increase, rather than decrease, in the South.

The role of the MNs in this context can be twofold. On the one hand, we can think that they are a further vehicle of polarization in the model that sees international trade and the movement of factors as a process that, through a perverse mechanism of complementarity and accumulation, aggravates the differences between North and South. On the other hand, however, the role of the MN can be seen as that of an agent that tends to attenuate the polarization tendencies of the trade blocks, through the homogenization of technology and preferences. Responding to a different stimulus, namely to the reduction of transaction costs through the internalization of contracts, the IMs would export the technology of the North to the South, and promote homogeneous consumption patterns in the two regions (the much-maligned "homologation"), determining in the final analysis, a situation in which the Heckscher-Ohlin model would prevail over the Ricardian one, the prices of products and factors would tend to converge all over the world, and trade in goods would once again become a substitute, rather than a complement, of the international factor movement.

The conclusion of this analysis is that the increase and improvement of the advantages from technology and scale, through the diffusion of innovation at international level, is complementary to the initial advantages obtained by companies in their country of origin. The leading companies in each industry have the most significant accumulated ownership advantages, which are better able to develop an international innovation network and thus extend the technological advantages even in the beneficiary countries of their flows. The MNs could therefore be an anchor of salvation for the developing countries, within an international specialization model, which, if left to its Ricardian impulses, would tend to condemn them to a subordinate role of suppliers of intensive technology products in "lower" factors than human capital and knowledge. In other words, in this perspective the presence of MNs favors resource allocation mechanisms according to the H-O model, blocking natural tendencies towards a world with Ricardian presuppositions (Scandizzo 2002).

6 Protectionism in the Value Chain

Both the raise of intermediate trade and the leadership of multinational companies conjure up an environment that arises suspicion and hostility from the national states. Suspicion and hostility arise because of the global nature of value chains that tend to deny ownership of producing enterprises to particular countries, make possible systematic fiscal and tariff shifting and ultimately lead to the raise of multinationals, that also tend to negate their belonging or allegiance to a particular state. Technology transfers in this context are common place, and so is the conflict between the

tendency to specialize according to the present or future opportunity cost of particular products (the traditional Heckscher-Ohlin model of specialization) and the desire to gain hegemonic positions through the control of higher level technologies (a sort of Ricardian technology race). The result is an increasing tension across nation states and between nation states and multinational entities and the rise of a new wave of protectionism, by using both traditional tariffs and new and more sophisticated means to foster and favor national champions in the technology race.

However, in the new landscape of globalized trade, protectionism may be more harmful than in the past. Its effects, in fact, tend to be larger and unpredictable, since they affect in different ways final goods and intermediates. Large country effects of tariffs, for example, may turn the terms of trade in favor of the home country for the final product, but not necessarily will do so for the intermediate products. Depending on the elasticities of substitution, tariffs will also cause a re-composition of the value chains that may damage the imposing country. By curtailing trade, however, tariffs and trade wars may slow down the unwanted transfer of technology, which may be the effect ultimately sought by the countries imposing the tariffs or other restrictions to trade. While this may temporarily consolidate the technological hegemony of dominant economies, in the longer run its effects will be even more deleterious since it will cause lower diffusion of productive innovations and lower growth for everyone.

While the US seems well positioned for a trade war, because its apparent dependence on foreign trade is small, its vulnerability to the fall of international growth may be larger than it can be estimated at first glance. Global value chains in fact are not directly accounted for in trade statistics and may have subtle and powerful effects on the interdependence of small as well as large economies. As the recent economic crisis has shown, in particular, trade may be powerfully levered by financial flows to hit the US first as the economy with the broadest and deepest capital markets and then spread contraction effects internationally.

The economic theory identifies four transmission mechanisms that allow technology to spread through adoption and diffusion: (1) imitation, which can be expressed through the adoption of new modes of production and / or new managerial practices (Das 1987; Wang and Blomstrom 1992); (2) the acquisition of human capital, which determines the increase in tacit knowledge and / or allows an increase in labor productivity (Haacker 1999, Fosfuri et al. 2001); (3) competition, which allows the reduction of inefficiencies and/or the adoption of better technologies (Wang and Blomstrom 1992; Glass and Saggi 2002); (4) learning, or the ability of local businesses to learn from MNs and participation to international value chains to export by achieving economies of scale (Aitken et al. 1997; Barrios et al. 2003; Greenaway et al. 2004). Some economists (Findlay 1978; Glass and Saggi 1998) argue that the exploitation of these spillovers depends, however, on the structural characteristics of the country and in particular on its absorption capacity.

These spillovers are the natural product of innovation and creative destruction, and have traditionally been associated with competitive and spontaneous market mechanisms with only limited attempts to influence them through national policies. The so called industrial policies, in fact, have been generally directed to improve the

performance of national sectors by pursuing comparative advantage, often in a dynamic way, through import substitution and/or export promotion. The raise of the multinational corporations and the global commercial influence of China are two germane relatively recent phenomena that have changed the landscape of traditional industrial and trade policies by aiming to achieve technological hegemony as a decisive factor of international competition. By transforming the nature of the contractual relations underlying many instances of international trade, MNs and China have concurred in transforming much of international exchanges into a technology race through a systematic quest for spillovers, both by licit and illicit means of imitation, human capital acquisition, competition and learning. Because these activities are pursued through trade, they have gradually become the motivators for the raise of a new protectionism that looks at international exchanges as carrying threats more than opportunities and proposes a war-like model of country interaction as a long term confrontation for technological hegemony. According to this model, trade has been expanding along a predatory path, with some companies and national governments, mainly from China, united in a sort of unholy alliance to profit from unfair competition and technology stealing.

For example, Peter Navarro and Greg Autry (2011) argue that China violates fair trade by "illegal export subsidies and currency manipulation, effectively flooding the U.S. markets" and unfairly making it "virtually impossible" for American companies to compete. This is made possible by "global capitalism" including foreign labor practices and environmental protection, with currency manipulation and subsidies conspiring to make sure that "American companies cannot compete because they're not competing with Chinese companies, they're competing with the Chinese government" (Genzlinger 2012).

7 Conclusions

Among the many effects of globalization, the evolution of international trade stands out as one of the more transformational phenomena of the modern age. Compared to the traditional picture of division of labor based on comparative advantage and limited specialization in final goods, the new international economy shows in fact a completely different structure based on interdependent value chains, complex networks of exchanges, multiple trade of intermediates and increasing transfers of immaterial goods, technology and innovations. The new international landscape is also dominated by multi-national corporations and a few national governments fighting for hegemony in a technology race that threatens to become a global trade war. As for many other aspects, the hyper-connective nature of the global economy creates an environment which is, at the same time, more inclusive and more unequal, where cut throat competition is fueled by aggressive risk taking turning into diffused uncertainty and threatening to become systemic risk. In this framework, increasingly laced by predation and contempt, trade wars seem the inevitable consequence of a

global market failure to provide essential public goods such as confidence in the future, fair competition and international cooperation.

Yet real multilateral cooperation and international institution building appears to be the only response not only crucial and practically effective, but also commanding an image of vigor and reach, capable to overturn the current expectations of disgruntled and disillusioned citizens and economic operators. Rather than turning away from it, the world needs an extension of multilateralism from the narrow financial and economic space where it has been confined by the Bretton Woods partial vision, to a broader array of global institutions. This extension is especially important for the European institutions, which have a great responsibility both in the multilateral and the international realm, but today appear to hold only a tenuous vision of their mission as leading actors of the globalization process and of its dramatic challenges to the old as well as any new possible world order. They should receive a clear mandate to act on all economic fronts, including international trade as well as the broader economic, fiscal and financial areas, and a genuine commitment to improve the global practice of societal values to yield inclusiveness, security, innovation and trust.

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Cyber-Physical Systems and the New Socio-economic Paradigm: Technology, Knowledge and Human Capital

Rainer Masera

Abstract The cyber-physical regime change in the world economy entails large potential benefits, but also significant risks. A "knowledge paradigm" is taking shape: technological advance and human capital are the pillars to transform economies and societies and reap the benefits of creative innovation. The paper highlights the twin concurrent revolutions of servitization and digitization, which represent key features of the new economic landscape. Significant investments in good infrastructures—broadly defined—is indispensable for sustainable and inclusive growth. In this perspective, Italy represents a negative paradigm: in the past two decades it lagged behind in terms of insufficient and inefficient infrastructure accumulation. This is a fundamental factor to explain the country's dismal productivity performance.

1 Introduction

It is a great honour and pleasure to present a paper at the 30th Villa Mondragone Conference. Let me start by paying tribute to the intellectual and operational achievements of Professor Luigi Paganetto. He has made all this possible, he has created out of an abandoned palace in ruin an outstanding center of research and education. Professor Paganetto was able to blend successfully the physical, financial, intellectual, human resources necessary to create the now world-famed Villa Mondragone event. He was also capable of attracting Ned Phelps, Nobel Prize in Economics in 2006, into this successful process. Ned gave—and gives—an extremely important impulse throughout the years. His presence today is a coronation of the continuing collaboration of the two minds over the three decades.

The themes of this Conference are of outstanding importance: conditions of and policies for world sustainable and inclusive growth. Good investment in human and physical capital is key to strive for these objectives. The aim of this paper is to offer a

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small contribution to the subject, in the light of the seminal works of Luigi and Ned. I will make specific reference to the Nelson and Phelps (1966) model and to the Paganetto (2004) approach and their subsequent variations and updates.

This paper highlights the twin phenomena of servitization and digitization, which represent key features of the new economic landscape. It also brings to the fore the need for good investments to upgrade and increase the total stock of material and immaterial capital. Paganetto (2004) was one of the first to underline that the main Italian economic problems stem from the very low/negative growth rates of Total Factor Productivity (TFP). Attention is drawn to two key specific Italian problems, which contribute to explaining the country's very poor performance: the quality and the amount of investment in infrastructures broadly defined.

2 Risks and Opportunities of the Emerging Socio-economic System

The emerging technology revolution brings forth huge possible benefits, but also grave potential risks. Education is key to transform a critical moment of change into a favourable juncture for advancement at national and global level, to tame the Schumpeterian (1942) "gale of creative destruction". Automation, artificial intelligence (AI) and cyber-physical systems (CBS) will replace workers not only in industry, but across the entire economy. According to estimates presented by the World Economic Forum and its President Klaus Schwab (2017), nearly half of existing jobs could be at risk, replaced by "intelligent machines", but the potential new jobs can more than match this massive displacement.

Education will represent a fundamental driver in adapting human capital to the new environment. Work competitiveness in the emerging labour markets will require novel competences and skills, both for students entering the labour markets and for displaced workers. High quality education—focused on the current and prospective challenges -encompasses the whole range of ages: not only K-12, undergraduate and graduate schools and universities, but also lifelong learning. Technology will facilitate adaptation of education. Scalable on-line methodologies will integrate traditional approaches in "blended" environments.

The specific reference to Industry 4.0 (Roser 2015, 2016) helps identify the current revolution, but is too narrow. The reference scenario must be broadened from three angles:

i. the perspective of the whole socio-economic system
ii. the new features of "servitization" and of "digitization"
iii. the "knowledge economy" (Par. 2).

To start with, the common indication of four technological revolutions (Fig. 1) is too narrow in scope.

Along with many other authors on the epistemology of applied science advance (Kuhn 1970; Masera ed. 2010), I prefer to identify six overlapping long waves of

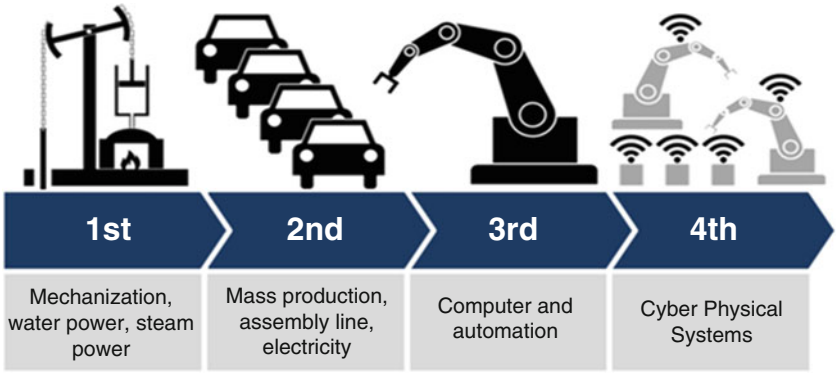

Fig. 1 The 4 industrial revolutions. Source: By Christoph Roser at AllAboutLean.com under the free CC-BY-SA 4.0 license

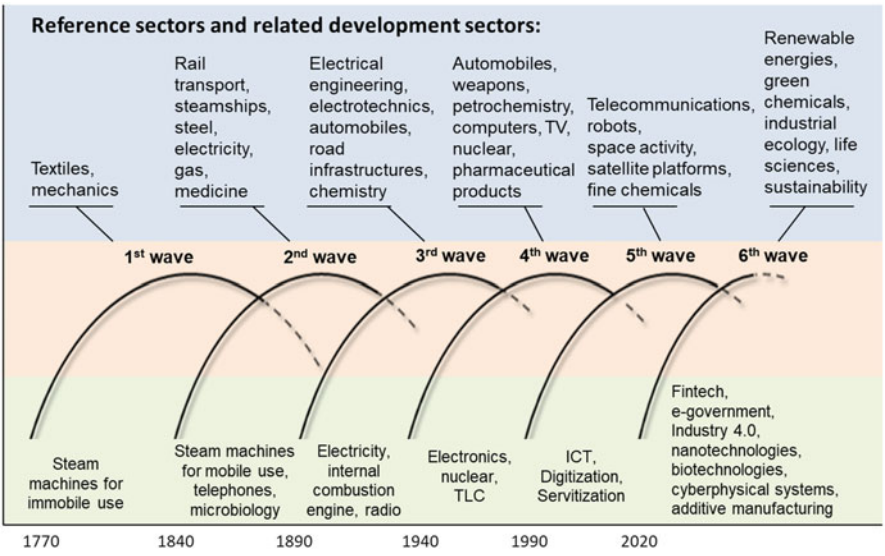

Fig. 2 The long waves of innovation in the economy. Source: Author

economic and social innovation, starting with the fixed-steam machines at the end of the eighteenth century (Fig. 2).

The successive technology waves made for dramatic changes in the proportion of workers moving from the primary sector (agriculture, mining) to the secondary sector (industry, manufacturing, construction). More recently a massive shift occurred towards the service industry which comprises banking, insurance, finance, public services, healthcare, tourism.

Currently, with what I indicated as the sixth global wave, the knowledge economy is taking shape. It centers on information technology, education, scientific

Table 1 The traditional separation of goods and services. Goods vs Services

Goods	Services
Tangible	Intangible
Produced in factory	Produced in buyer seller interaction
Can be stored	Cannot be stored
Transfer of ownership	Transfer of ownership does not take place

Source: Author

research, human capital and e-government (some have coined the term of quaternary sector to mark the change). These factors drive human capital and technological advancement and are key in transforming our economies and societies, in making it possible to fully exploit the potential unleashed by the CPS and the internet of systems.

The new wave of innovation impacts not only industry, but all sectors of the productive system. Digitization and servitization blur and reshape the boundaries of economic sectors and the features of value chains. A holistic network approach is critical to understand and guide the processes in the new complex/interactive socio-economic systems. In this perspective, the importance of good universities and technology-advanced, cost efficient education becomes critical.

The common key distinction between goods and services, summarized in Table 1, fades.

The system becomes characterized by a continuum of goods and services, increasingly "bundled" together. Pure goods and pure services loose importance. This has profound implications for economic analysis, which have not yet been fully systemized. In the classical economy—Smith, Ricardo, Marx, and also in the view of key neoclassical economists, Marshall, Walras, Pareto—the focus was on the production of goods by means of goods. Services were considered of secondary importance: "*Services pass out of existence in the same instant that they come into it and are of course not part of the stock of wealth*" (Marshall 1920).

These models were superseded by the services wave. In turn, this was regarded as one of the causes of declining productivity growth. Baumol (1962) showed that the secular increase in services—with inherent lower productivity growth—would necessarily undermine the dynamics of TFP.

The knowledge economy and the bundling of goods and services lead to a different paradigm.

An example of the new boundaries is offered precisely by the models of e-Teaching and e-Learning. The traditional university lesson disappeared as it was given, according to the Marshall model. The e-Lesson is now stored and made available through different e-platforms over time and space. It can be "consumed" by the students endlessly and everywhere: it becomes therefore a parcel of the available stock of knowledge. A new service/product is brought into existence: a "durable" cost efficient good/service replaces the "perishable" service. Constant interaction between teachers and students (digital teaching and learning), also

through "virtual c@mpuses" (Unimarconi model), and reference to MOOC benchmarks[1] permit and require real time improvement and update of lessons.

Similar innovation processes take place in respect of many intangibles, which acquire and require physical and electronic characters and become therefore akin to manufacturing products. Many examples could be explored of this two-way convergence. The digitization of the automotive sector (where cars have already more than half of their value embedded in electronic components, software and connecting instruments, leading to virtual driving) transforms the traditional car product into a (rented) car as service provider. e-Commerce (Amazon, Alibaba) is another instance of the bundling between goods and services. Rolls-Royce aerospace industry with "power by the hour" has changed the value creation model of a typical industrial firm. Netflix and Spotify deliver media services which replace the need of buying Cds, DVDs, media-products. Phillips offers a service LED lighting proposition package to airports (Schiphol).

In sum, "servitization" becomes a key feature of the new production systems, with technological innovation bundling together industry and services.

"Digitization" is the key corresponding enabling process, which is based on the transformation of analogue into discrete digital values in all areas and sectors (Schumann et al. 2018). This was the basis of the internet revolution, which made it possible to blend physical and digital assets. Value creation chains changed and new business models emerged. Dynamic integrated platforms were created by linking together hardware, software and content provisions (Coreynen et al. 2016; Vendrell-Herrero et al. 2017; Gilli 2018).

3 Comparative and Competitive Advantage in the Knowledge Economy

The knowledge economy can be seen as an extension of the information/internet society (the fifth wave in Fig. 2). The concept was introduced by Peter Drucker (1969) "from Manual to Knowledge worker", who credits Fritz Machlup for developing his approach. Knowledge generates economic—tangible and intangible—value, which can be incorporated into machines. Knowledge and education become human capital, which is the key productive asset, embodying a large proportion of technical progress. This leads to a rethink of the original Solow production function paradigm (Solow 1956).

Comparative advantage gives way to competitive advantage. The traditional workers must acquire specialized computer literacy: the education system correspondingly adapts towards STEM (Science, Technology, Engineering, Math) training. More generally, continuous innovation requires lifelong learning with corresponding changes in teaching techniques and skills. The fundamental

[1] See for instance L. Breslow et al. (2013) and Coursera (2018).

difference between knowledge and information societies lies in the capacity to select, transform and enact information into true knowledge and effective action. In turn, this requires adapting and networking all key infrastructures of the system.

Human, physical and computational elements give rise to embedded systems. Similar new architectures are behind both CPS, the Internet of Things (IoT), and the Internet of Services (IoS).[2] A well-known example is the so-called 5C architecture (Connection, Conversion, Cyber, Cognition, Configuration, Bagheri and Lee 2015). At the first level, devices of a CPS are able to self-connect and self-sense. In the conversion level, machines use the self-aware information to self-predict potential issues. At the cyber level, each machine can create its twin and self-compare for peer-to-peer performance. In the cognition function, the outcomes of self-assessment and evaluation are made available to human remote visualization and check. Finally, at the configuration level, the production system activates self-optimization, adjustment and configuration for resilience.

As the US National Science Foundation (2018) aptly put it:

> CPS technologies are transforming the way people interact with engineered systems, just as the Internet has transformed the way people interact with information. New, smart CPS drive innovation and competition in a range of application domains including agriculture, aeronautics, building design, civil infrastructure, energy, environmental quality, healthcare and personalized medicine, manufacturing, and transportation… with major societal implications.

In the knowledge economy highly-skilled, constant-learning, managers and workers are the drivers of value creation and of oversight of CPS. A necessary condition for a firm to be successful is to become a "learning factory". Unskilled labour will inevitably become less valuable and will be increasingly displaced by low-wage workers and machine competition. Socio-economic tensions are inherent in this complex process of creative destruction; understanding and managing these risks is key in today's global risk environment (Oliver Wyman 2018).

4 Good Infrastructures and Trias Politica

Good infrastructures play a crucial role for economic and social development in the knowledge paradigm (Masera 2017) (Fig. 3).

Adequate investment in innovation infrastructures is indispensable for supporting companies and public administration in the current evolutionary process,

[2] A key implication of the IoT is the digitization of physical infrastructure, which embeds information technology to allow for networking with other infrastructures and with, for instance, persons, cars, trains, lorries, and goods. Sensors, near-field-communication devices and wireless technologies make it possible for physical equipment and assets to become "intelligent", warn on impending (endogenous/exogenous) risks and connect with persons and other infrastructures. This is an instance of a more general phenomenon: the bundling of assets and services made possible by advances in technology.

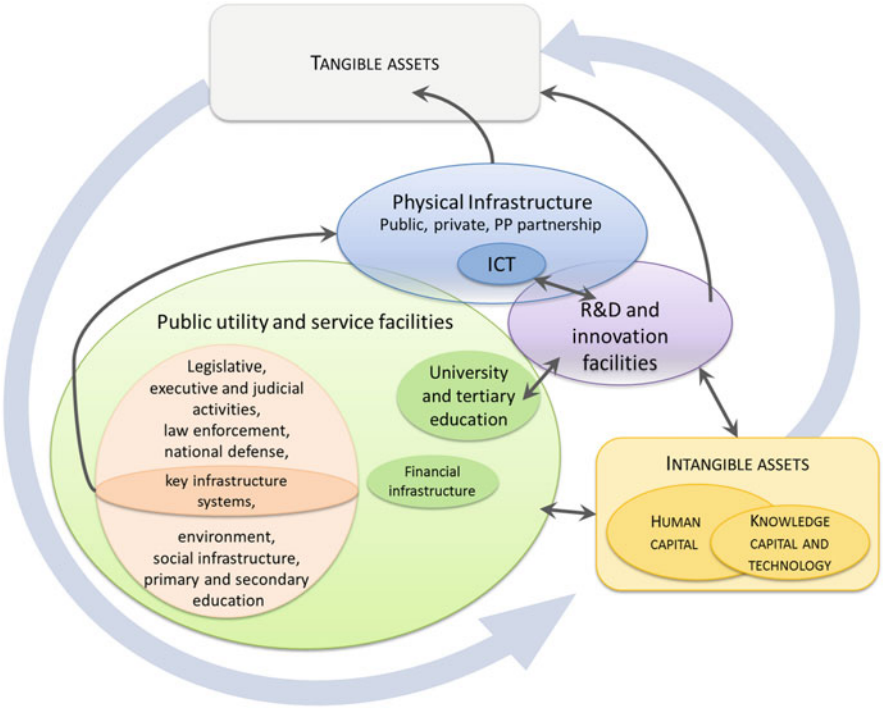

Fig. 3 The infrastructural system: physical capital and intangible capital. Source: Author

characterized by significant break points (Paganetto and Phelps 2010). These infrastructural requisites—broadly defined—involve research and development, and human capital, beyond traditional physical capital, as is detailed in Fig. 4. The two types of capital are often "bundled". The aforementioned arrays (servitization, digitization and twin capital) create a new economic and societal paradigm and pose critical challenges. It is estimated that at world level, over the next two decades, some $60 trillion worth of new infrastructure investments would be required: the key is to create efficient infrastructure in a deepened fruitful partnership between public and private sources.

Investment in knowledge and research plus selection of human capital according to the principles of ability and merit are fundamental for activating and sustaining virtuous circles of innovation, productivity, competitiveness, and employment. This positive loop is synthetized in Fig. 5 centred on knowledge and technology capital.

The basic infrastructure of a civil society can be identified in the Trias Politica (Montesquieu 1748, Fig. 6) namely the relationship between democracy, politics, government, the judicial authorities, and law enforcement entities.

The functions of the Trias extend over a number of powers that include drawing up good laws and enforcing them, effectiveness of government, sustaining crime prevention and punishment against illegality, providing efficient public

A. Public utility and service systems	- Legislative, executive and judicial activities (*trias politica*) and public order - National/local public administration - Education system and universities - Healthcare system - Selection and financing mechanisms for infrastructure development - Protection and management systems for environmental, cultural, artistic and historical resources (including *green infrastructure*) - Civil defense network - National defense network - Financial infrastructures
B. Physical infrastructure	- Transport networks (roads, railways, airports, ports and inland waterways) - Energy networks and infrastructures (electricity, gas, oil) - Renewable energy and *smart grids* - ICT capital - Aqueducts and water mains - Networks for integrated waste management - Land protection infrastructure - Urban energy efficient housing and infrastructure
C. Research & development and innovation facilities	- Knowledge capital and technology - Laboratories and research facilities - Scientific and technological parks - Patents, trademarks and copyrights - Software - Organisational methods

Fig. 4 The infrastructures of a country-system broadly defined. Source: Author

administration. This analytical framework (Masera 2017) is akin to that of country governance—as defined and operationally measured by the World Bank—which refers to

> "the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies, and the respect of citizens and the state for the institutions that govern economic and social interactions among them" (World Bank 2018).

The Trias/country governance "context infrastructure" is itself amenable to accumulation/decumulation, with corresponding improvement/deterioration in

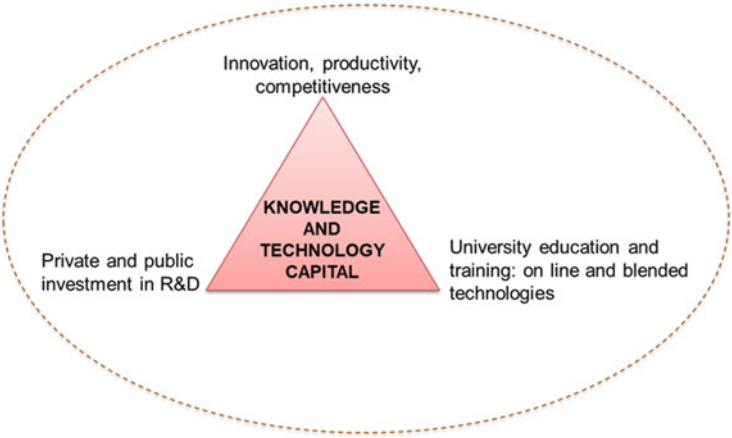

Fig. 5 The triangle of knowledge and technology. Source: Author

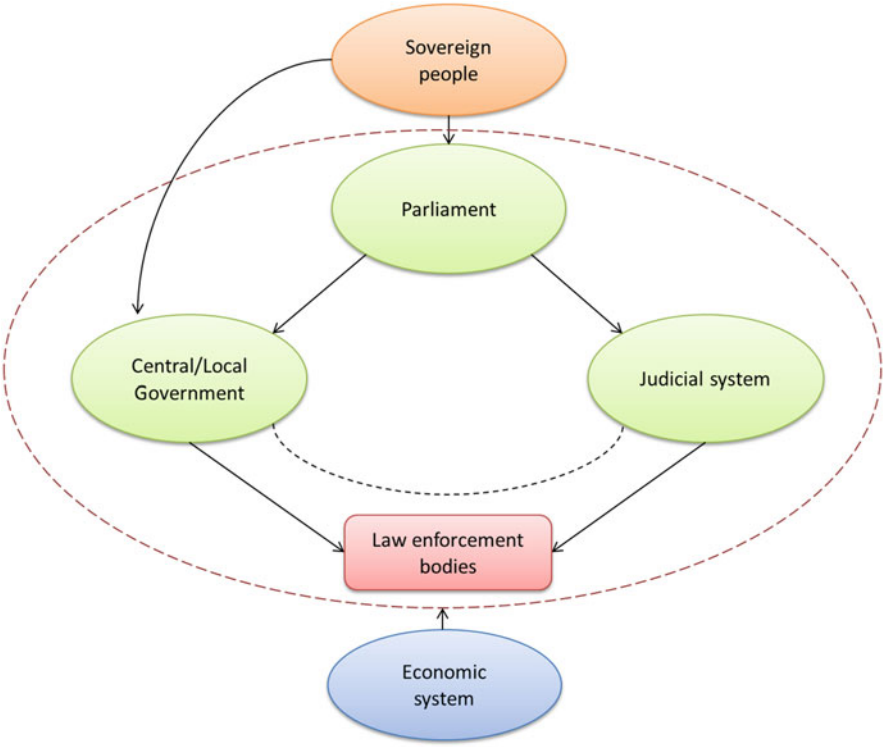

Fig. 6 Democratic society, rule of law, and market economy. The trias politica as a pivotal system infrastructure. An interpretation of Montesquieu (1748). Source: Author

performance, which can be gauged by means of the indicators elaborated by the World Bank.

More narrowly defined, a country's infrastructure comprises physical and intangible capital stocks fed overtime by investment flows. Although mainly driven by the public sector, these flows should link efficiently and complementarily with private investment, notably, but not exclusively in terms of the Private and Public Partnership (PPP) framework.

As the European PPP Expertise Centre (EPEC) based at the European Investment Bank (EIB—EPEC 2015) has amply demonstrated in its ten-year existence, it is crucial to foster the complementarities and the efficient intertwining between the two sources of capital accumulation: this is particularly relevant in the case of intangibles—education, R&D, innovation, knowledge and skills.

A key challenge ahead is to deliver cost-benefit and value-creation efficient public services, given the accelerating phase of change in the social economic systems. This is likely to require adaptation in the traditional PPP contractual model, which may be too long-term and too inflexible.[3] A shift may therefore be appropriate from concession to availability PPP structures, also to better accommodate frameworks enlarged to private institutional investors.

Successful interaction and efficient selection of investments in physical as well as R&D infrastructures and human capital are closely linked to the correct functioning of the Trias, to the effective and efficient operation of the country governance.

This virtuous paradigm can work in reverse, if country governance deteriorates, if public investment flows shrink and their quality declines. Evidence on these adverse trends can be obtained from analysis of the Italian case in the past twenty years.

5 Country Governance and Public Investment: The Italian Negative Paradigm in the Past Two Decades

The World Bank Country Governance Reports (World Bank 2018) provide evidence that during the last twenty years effectiveness and efficiency of Italy's governance declined significantly. The deterioration took place in absolute terms and even more relatively to other advanced economies, notably in comparison with the Eurozone, and with regard to all major indicators. This made the workings of the Italian economy more stringent and difficult in the single currency area. The decline in TFP for the whole economy (market plus public sectors), Fig. 7, and the grinding to a halt of real incomes growth are at the root of the economic and social deterioration and represent one of the main causes of the continued increase in the public debt-to-GDP ratio.

[3]PPP's that are characterized by very long time spans before finalization imply that the financial component can become a multiple of construction costs. This creates problems not only of financial sustainability, but also of political legitimacy.

Fig. 7 Total factor productivity for Italy (1960–2014). Source: University of Groningen and University of California, Davis, Total Factor Productivity at Constant National Prices for Italy [RTFPNAITA632NRUG], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/RTFPNAITA632NRUG, November 15, 2018

In turn, the worsening of governance standards had a lasting adverse impact on the quality/efficiency of public investment flows (Masera 2017; Visco 2018). The problems were further compounded and amplified because actual investment flows shrank during the past two decades. Centres of excellence continue to characterize the country in all areas and sectors, but their continuing successes, and even their existence, are at risk if past trends, described below, are not rapidly reversed.

Starting with education, selective reference will be made mainly to OECD (2017) evidence. Currently graduates in Italy total 18% compared with a 37% average for other OECD countries. Italy is last in Europe, far behind Germany, France and Spain. Switzerland stands at 41% and the United Kingdom at 46%.

Degrees are concentrated in faculties with limited interest for the labour market, while those in all the scientific subjects and in economics are relatively few. 25% of total graduates, as against 37%in Germany, have the qualifications that offer the best job prospects, such as Industry 4.0, Fintech and e-government. There is a significant lack of STEM graduates (Cantoni 2018). Women are penalized because their degrees are mainly in the arts, philosophy and sociology with low demand. The quality of public spending in education is questionable, mainly because strict ascertainment of preparation levels is often underplayed, in line with a misleading concept of productivity. The country is in the last place in the OECD area in terms of overall spending with just 7.1% of total public administration expenditure reserved for education, almost 10% less than in 2010. Teachers and lecturers earn less than in almost all European countries. Italy is the only country in the OECD area that has allocated the same amount to the support of primary and secondary education since 1995. Eurostat confirms the last place in terms of percentage of public spending on education in the EU. More than one youngster out of five, aged fifteen to nineteen, is unemployed, does not study or follow any kind of professional training course: again

the last position in Europe for NEETs (Not Engaged in Education, Employment or Training), with the emerging risk of Hikikomori syndromes (Crepaldi 2018). The OECD PISA (Programme for International Student Assessment) Survey reveals that many students are not interested in university training. World wide education models have increasingly adopted IT and tech innovation tools and methods. Italy lags also from this point of view, notwithstanding early warnings and indications on the need to develop blended education models (Briganti 2014; Masera 2014).

Similar considerations can be made with reference to the quantity and quality of investments in physical infrastructures. Impressive and consistent evidence can be obtained from national and international sources [for instance EC (2017), WEF (2018), EIB (2018) and Visco (2018)].

Not only spending on these types of investment has dropped significantly (by 30% in the last five years), but the accounting-financial data are overestimates. Only part of the money actually spent translated into an increase in measured capital, because investments were inefficiently selected and carried out. Non-transparent processes in tender procedures and corruption often led to unacceptable increases in work duration and costs, as documented by the OECD; the Bank of Italy and the Italian Court of Auditors. These problems, linked also to overlapping, uncertain and poorly formulated rules, hindered the necessary public-private co-funding. The challenge is not only insufficient, but also inefficient spending for infrastructures.[4]

6 Concluding Remarks

CPS, AI, Digitazion and servitization are key megatrends, which reshape business models and value creation in all areas of economic systems—including the public sector. Human and physical capital become intertwined: lifelong education and (re) training are key to master these processes, to sustain competitive employment, civil and social growth. Comparative advantage gives way to competitive advantage.

Well selected and closely monitored capital expenditure in the infrastructural system is a necessary condition to cross the "traverse" for all countries. China and United States are well aware of this need. They are poised to foster infrastructure accumulation, while guaranteeing the complementarities with private investments. In particular, the aim is to ensure and maintain preeminence in terms of both physical and human AI capital.

These objectives are especially relevant in the EU where the Maastricht framework may adversely affect the significant needs for higher rates of public net capital formation both in legacy and innovative infrastructures. Corresponding adaptations of the current criteria in respect of public capital spending—subject to EIB/EFSI

[4]Also in Germany public net fixed capital formation has been relatively week in quantitative terms in the past several years (Roth and Wolff 2018). The key difference lies in the effective implementation of high quality infrastructural outlays in the Federal Republic.

monitoring—would be appropriate to ensure effective realization of the stated objective of ensuring sustainable and inclusive growth and world competitiveness of the Union (Masera 2018).

During the past two decades Italy has been characterized by the three-pronged negative infrastructure loop analysed and documented in this paper. The country is now at half way between the relaunch of Humanism—to reinstate "the centrality, dignity and creativity of man"—and the "Degenerative Attractions" (Pico della Mirandola 1486). Investment in good infrastructures, broadly defined to include the country governance, is key to reverse the perverse loop.

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An Immediate Solution for the Euro Area Crisis: A Grand European Investment Plan

Pompeo Della Posta, Enrico Marelli, and Marcello Signorelli

Abstract After the double crisis that hurt the Eurozone (with the two recessions in 2008–2009 and 2012–2013), the financial situation has improved, especially thanks to the battery of unconventional measures undertaken by the European central bank. However, even in the recovery period, real economic growth has been weak and uneven in the euro area; above all, the general economic and social situation is still unsatisfactory. In some peripheral Eurozone countries, the fall in aggregate demand and the collapse of investment (especially public investment) are far from being recovered.

A possible solution is therefore—waiting for the reforms needed for the "completion" of the European monetary union—the realization of a Grand European Investment Plan, along the lines proposed by Marelli and Signorelli (2017a) and by Della Posta et al. (2018). This plan can stimulate both current and medium term GDP growth; moreover, it can contribute to the stabilization of both public debt as a ratio of GDP and interest rates. It might even help in the restoration of a pro-European sentiment, which lately has been fading away because of the growth-depressing fiscal austerity policies followed in many euro area countries and the consequent dreadful social conditions.

Keywords Euro · European Union · Eurozone crisis · Fiscal policy · Investment plan

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1 Introduction

In Europe, we are approaching the 20th anniversary of monetary union. It was the first of January 1999 and, at that time, there were many hopes that the process of integration could continue toward a genuine European Economic and Monetary Union (EMU) and, in perspective, also a political union. The initial benefits of the euro were indeed significant for many countries especially in terms of interest rate reductions. Unfortunately, a financial crisis erupted in the world economy reaching a climax 10 years ago (September 2008) with the default of Lehman Brothers. The following Great Recession (2008–2009) and the euro area crisis (2010–2013) have been so hard that some peripheral countries of the Eurozone encountered major difficulties in returning to a normal growth path, with great economic, social and even political consequences. As a matter of fact, especially thanks to the battery of unconventional measures undertaken by the European central bank, the financial situation has generally improved; but real economic growth has been weak and uneven in the euro area; the general economic and social situation is still distressing in some countries. The long stagnation in some Eurozone's countries has also been caused by wrong or delayed policies by the EU institutions.

As a consequence, some crucial reforms in the EU governance and institutions as well as radical changes in the economic policies are necessary to complete the monetary union and to achieve a "genuine" economic union. The problem is the lack of political consensus for radical reforms and the fact that, in any case, such reforms would take a long time to be implemented; in the meanwhile, the Eurozone (or even the EU) might disintegrate, for economic or political reasons. This is why we propose the realization of a Grand European Investment Plan, along the lines suggested by Marelli and Signorelli (2017a) and by Della Posta et al. (2018). This plan can stimulate both current and medium term GDP growth; as a result, it can contribute to the stabilization of both public debt to GDP ratio and interest rates. It might even help in the restoration of a pro-European sentiment, which lately has been fading away because of the wrong policies adopted so far.

The structure of this paper is as follows. In Sect. 2, we overview the key features of the long crisis that hurt the Eurozone over the last decade, by emphasizing the limits of the current Eurozone governance and the adopted policies. Section 3, after reviewing the future scenarios hypothesised by the EU institutions, discusses the most important reforms needed to guarantee the survival of the euro in the long-run. Section 4 presents our proposal for a Grand European Investment Plan. Section 5 discusses the possible indirect effects on the sentiment of European people and the feasibility of further steps toward European integration. Section 6 concludes.

2 The Legacy of the Long Crisis in the Eurozone

In the first decade after the introduction of the euro, the monetary union was considered as irreversible, not only by the policymakers but also by the markets. Once the devaluation risk disappeared, the very perceived low default risk, even in peripheral countries, warranted almost identical interest rates on the bonds issued by all Eurozone countries. This in turn helped keeping public deficits low and supporting economic growth. Monetary stability kept the inflation rate low everywhere in the area and caused the appreciation of the euro vis-à-vis other currencies (including the US dollar); this strength had, however, indirect effects on the current accounts of the Eurozone's peripheral countries.

Then, a global financial crisis started in the US.[1] The climax was reached in September 2008, when Lehman Brothers, a financial services company specializing in investment banking operating since the mid-nineteenth century, declared bankruptcy. The Wall Street stock exchange collapsed and panic spread to all world stock exchanges. It is a bit paradoxical that this event, which occurred in the United States of America, had the most detrimental and lasting consequences on this side of the Atlantic, particularly in some euro area countries.

Bank failures and default of other financial corporations proliferated and contagion spread to the global financial system, with a sharp deterioration of expectations and degree of trust. Then, the financial crisis soon became, through several channels, a real economy crisis. So, in 2008–09 the so-called "Great Recession" followed: production, income, investment, trade and other real variables suffered a collapse of an entity never seen in the world economy since the Great Depression of the 1930s.

Afterwards, the world economy, including the United States, had an almost continuous recovery since 2010. This recovery was favoured by the expansionary monetary and fiscal policies undertaken by most developed countries (notice that China, India and other emerging economies had only a mild deceleration in 2009). Monetary policy immediately became more expansionary, with drastic cuts in interest rates operated by the major central banks as early as Autumn 2008 (the ECB also did so, but more slowly). The effectiveness of the expansionary measures, after having reached the "zero-interest rate policy" (ZIRP), was increased by the adoption of unconventional measures, such as quantitative easing (QE), soon implemented by the US Fed (led by Ben Bernanke), the Bank of Japan and the Bank of England. It consisted in the purchase of public and also private securities, with the aim of providing liquidity to the system and supporting the financial conditions of the credit institutions. Thus, central banks' budgets began to expand rapidly in 2009–14, with the partial exception of the ECB.

Besides the accommodative monetary policy and numerous bank bailouts, also fiscal policies were extremely expansionary in most countries of the world, by allowing the full operation of the automatic stabilizers and the adoption of additional fiscal stimulus packages (for example the package decided by President Obama in

[1] For a more complete account, see Marelli and Signorelli (2017a), among others.

2009, worth 800 billion dollars) (see Della Posta 2017). Public budget deficits reached 10 per cent of GDPp in some countries for a short period. Of course, countries with relatively low levels of public debt generally had higher margins to implement such counter-cyclical fiscal policies. In the EU, instead, the fiscal rules prevented such expansionary policies (as we shall discuss below).

The Eurozone, in fact, was hurt by a second recession in 2012–13, due to the notorious "sovereign debt crisis" (Table 1). After the "Greece case" exploded in 2009–10 (originally caused by a cheating on the figures of the public deficit), there was a collapse of confidence in the financial markets, contagion propagated to the countries in the Eurozone periphery, whose bonds suffered because of increasing "spreads" with respect to the interest paid on German "bunds". The financial situation deteriorated both because in the Eurozone appropriate crisis-management tools were lacking (the "save-State" funds[2] were introduced in 2010–11, but they were limited in size) and also as a consequence of the early decision on the "private sector involvement", that excluded the complete bail out of sovereign bonds (after the Merkel-Sarkozy's declaration, in Autumn 2010).

The high spreads reached top values in the so-called PIIGS[3] (Portugal, Ireland, Italy, Greece, Spain) in 2011–12; then they started to decrease after the summer of 2012 (see Fig. 1). The PIIGS were the peripheral countries of the euro area most affected by the sovereign debt crisis. Despite different initial conditions in the public vs. private imbalances, they generally suffered because of gaps in competitiveness (relative to Germany) and—in most cases—deficits in the current accounts of the balance of payment. The high interest rates on sovereign bonds originated from the perception of two types of risks affecting their sovereign debt: (i) the default risk inherent to the presumed inability of a given country to repay its own debt on maturity, (ii) the risk connected to a change in the currency of repayment (currency redenomination risk). In fact, for the first time since the introduction of the euro (1999), the markets were beginning to question the irreversibility of the common currency, because of the possibility of exit of individual countries or even the disintegration of the monetary union. The contagion in the euro area was caused by both the financial international integration (e.g. French and German banks holding sovereign bonds of the PIIGS) and the interconnection between public and private debt: a great part of the sovereign bonds is in the hands of private banks that, when a crisis happens, should be bailed out by the States (this is the so-called "doom loop").

[2]That is the temporary European Financial Stability Facility and the permanent European Stability Mechanism. Notice however that big countries like Italy or also Spain would be, in any case, both too big to bail out (because of the limited size of the mentioned funds) and too big to default (their failure would almost certainly cause a systemic crisis and the likely collapse of the euro).

[3]The acronym was first used by English media, sometimes with the aim of accusing the lax and spendthrift behavior of Southern countries and with implicit denigratory intentions. This is the reason why Della Posta (2018b) explicitly avoids adopting it and uses instead the expression "euro area crisis countries".

Table 1 GDP growth rate in selected countries (2007–18)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018[a]
Italy	1.5	−1.1	−5.5	1.7	0.6	−2.8	−1.7	0.1	1.0	0.9	1.5	1.5
Germany	3.3	1.1	−5.6	4.1	3.7	0.5	0.5	1.9	1.7	1.9	2.2	2.3
France	2.4	0.2	−2.9	2.0	2.1	0.2	0.6	0.9	1.1	1.2	1.8	2.0
Spain	3.8	1.1	−3.6	0.0	−1.0	−2.9	−1.7	1.4	3.4	3.3	3.1	2.9
Greece	3.3	−0.3	−4.3	−5.5	−9.1	−7.3	−3.2	0.7	−0.3	−0.2	1.4	1.9
Ireland	3.8	−4.4	−4.6	2.0	0.0	−1.1	1.6	8.3	25.6	5.1	7.8	5.7
Portugal	2.5	0.2	−3.0	1.9	−1.8	−4.0	−1.1	0.9	1.8	1.6	2.7	2.3
Eurozone-19	3.0	0.4	−4.5	2.1	1.5	−0.9	−0.2	1.3	2.1	1.8	2.4	2.3
U. K.	2.6	−0.6	−4.3	1.9	1.5	1.3	2.1	3.1	2.3	1.9	1.8	1.5
Poland	7.0	4.2	2.8	3.6	5.0	1.6	1.4	3.3	3.8	3.0	4.6	4.3
EU-28	3.1	0.4	−4.4	2.1	1.7	−0.5	0.3	1.8	2.3	2.0	2.4	2.3
U.S.	1.8	−0.3	−2.8	2.5	1.6	2.2	1.7	2.6	2.9	1.5	2.3	2.9
Japan	1.7	−1.1	−5.4	4.2	−0.1	1.5	2.0	0.4	1.4	0.9	1.7	1.3

Source: European Commission, European Economic Forecasts, Spring 2018
[a]forecasts

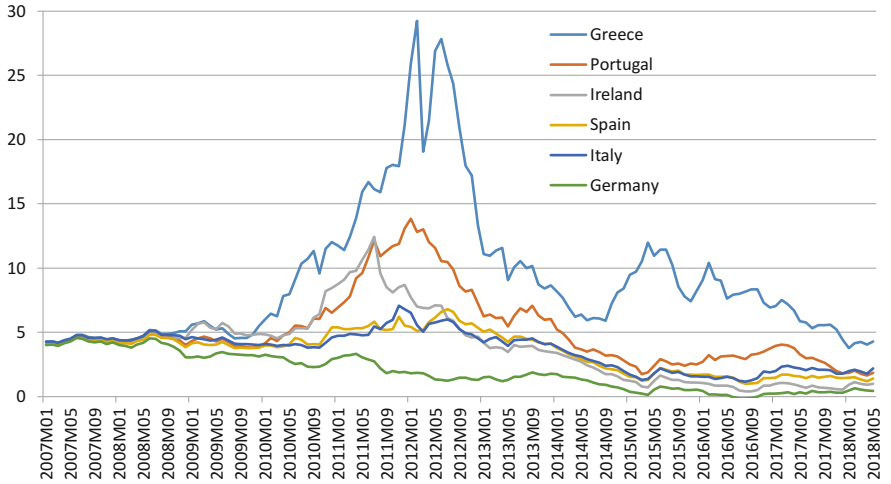

Fig. 1 Long term interest rates (January 2007–May 2018). Source: Eurostat (long term interest rates as convergence criteria in the Maastricht Treaty). Note: monthly data on annual base

The "spread crisis" had a short duration. The explanation is to be found not so much in the financial assistance provided by the EU institutions (the mentioned "save state funds"), that provided help through the involvement of the so-called "troika" (European Commission, European Central Bank, International Monetary Fund), requiring macroeconomic adjustment and fiscal consolidation of the assisted countries. The key reason is, instead, provided by the new ECB's strategy—consisting in both credible announcements and new monetary policies—that began with the presidency of Mario Draghi. In particular, after his announcement made in July 2012 "we shall save the euro, whatever it takes", the Outright Monetary Transactions (OMT) plan[4] was launched in September 2012, providing unlimited support to the most vulnerable countries, with the specific aim of reducing the spreads on sovereign bonds. Although never implemented, it succeeded (see previous Fig. 1). Thus, Draghi was able, despite the opposition of German representatives in the ECB board, to overcome in an indirect way one of the institutional shortcomings of the ECB, i.e. not being a "lender of last resort" for the States (see De Grauwe 2013).

In any case, the double recession and subsequent faint recovery (since 2013) in the Eurozone were aggravated by the uncertain, delayed and inadequate economic policies followed by the EU institutions (see also Marelli and Signorelli 2017a). While the original financial imbalances were in the private sector of the economy[5]

[4]The previous Securities Market Program (SMP), adopted in 2010–11, was more limited in size, duration and it was targeted to specific countries.

[5]This was most evident in the case of Ireland, Portugal, Spain (besides the UK), where in 2007, before the financial crisis, the private debt was from three to seven times the GDP (while in Greece

and public accounts deteriorated because of the recession, the EU institutions considered the public deficits and debts as the key cause of the imbalances. By reversing the causality link, the EU institutions interpreted the rise in public deficits and debts as the main cause of the crisis, while it was the most evident consequence. In fact, the original financial imbalances were, also in Europe, in the private sector, with very high private debt over GDP ratios (in the United Kingdom, Ireland, Spain, etc.) and many private banks (in Germany, France, etc.) exposed to the debts of peripheral countries. In this situation, during crisis periods, sudden capital outflows may happen, causing imbalances in the Eurozone's payment system (Acocella 2016; Beker and Moro 2016).

Thus an "austerity" approach was imposed to all Eurozone countries, through a new, more rigid Stability and Growth Pact and then by the Fiscal Compact, requiring a balanced budget in the medium term. Such restrictive policies aggravated the recession or weakened the recovery, as shown in Table 1[6] (see also Blyth 2015; Holland 2016).

Public accounts improved after 2010, with decreasing deficit/GDP ratios (while the debt/GDP ratios continued to rise for some more years). Notice, however, that it is extremely difficult, on economic and social grounds, to increase primary balances—as occurred in some euro area countries—during recessions or slow economic recoveries, since at least the automatic stabilizers should be allowed to act.[7]

As noticed by Krugman (2010), the austerity approach was self-defeating, because it partly lowered public deficits, but the negative impact on GDP has been so large that it reduced the denominator of the debt/GDP ratios more than the numerator. This happened in a period when, in addition to a negative or very small real GDP growth, also inflation was close to zero (particularly in the 2014–16 period), thus making the fiscal adjustment more difficult. The negative impact of restrictive policies was also underestimated because of the wrong assessments of fiscal multipliers that, differently from what believed until 2010, were greater than one, especially during recessions, with zero interest rates and when many countries consolidate at the same time (see Blanchard and Leigh 2013). In any case, the typical Keynesian effects of restrictive fiscal policies emerged, contrary to

and Italy, the two countries with the highest public debt, such ratios were between 1 and 2). In the former countries, in the new century there was, before the crisis, a sort of "drugged" growth, caused by low real interest rates, investment booms (especially in constructions), favorable credit conditions and burgeoning foreign direct investments. As a consequence, the "sovereign debt crisis" should be better renamed "euro area crisis".

[6]The countries considered in the table are the three major Eurozone countries and the economies hit by the sovereign debt crisis; in addition, the two major EU countries outside the euro area: the United Kingdom and Poland; finally, the two largest non-European countries with a market economy: USA and Japan. For comparative reasons, the average values of the entire Eurozone (at 19) and the EU (at 28) are also shown.

[7]Contrary to the recent Eurozone's experience, high GDP growth might well be a solution to the debt sustainability problems (see Della Posta (2018a) for a deeper analysis of the role played by GDP growth in the euro area crisis).

the "non-keynesian effects" and the so-called "expansionary austerity" (assumed in neoliberal approaches).

We must admit that within the Eurozone there were considerable cross-country differences in the impact of the crisis. The most dramatic and enduring cases refer to Greece and Italy, where the levels of production and income are still, in 2018, significantly below the pre-crisis levels (2007–08). On the opposite side, Germany and some other leading countries, recovered quickly and fully after the 2009 recession. In the middle, Ireland, Spain and more recently Portugal—although greatly damaged by the double recession—had satisfactory recoveries after 2014. However, also in the latter countries, the recession could have been less deep and social pain less dreadful had fiscal policy been more accomodative.

In fact, the social impact has been profound also in the latter countries and the unemployment rate, for instance in Spain, is still much higher compared to pre-crisis levels (Table 2). The dramatic effects in the labour markets especially concerned young people: youth unemployment greatly increased and has been persistent (Marelli and Signorelli 2017b). Poverty or the risk of social exclusion still concerns more than 120 million people in Europe: it is in this area that we observe the greatest failure in reaching the objectives of the "Europe 2020" plan (see Eurostat 2017). The rising inequalities, also driven by an unregulated globalization processes (Fadda and Tridico 2017), led to a growing opposition, manifested not always in social conflicts, but rather in political movements supporting populist or nationalist approaches.

The Eurozone recovery has been favoured, on the whole, by the recent monetary policy followed by the European Central Bank (ECB). After the mentioned OMT plan, that was crucial to reduce the spreads on sovereign bonds and to "save the euro", and in addition to the ZIRP policy[8] followed since 2014–15, the QE was activated in 2015, with the specific aim to raise the inflation rate.[9] The initial impact of the QE was to cause a depreciation of the euro against foreign currencies (especially in the initial months of 2015), thus helping the economic recovery, but the inflation rate remained significantly below the ECB target (below but close to 2%), at least until 2018.

In any case, the current account situation of most Eurozone peripheral economies improved in the recent period, despite persisting imbalances (also caused by the huge German surplus).[10] Paradoxically, excluding 2009, in more recent years it was not

[8]The Main Refinancing Operation (MRO) rate reached exactly 0 per cent in 2016; the rate on overnight deposits, negative since 2014, reached the lowest level (−0.40%).

[9]It consisted in purchases, on the secondary market, of public and private bonds, worth 60 billion euro each month for the whole Eurozone; it was augmented to 80 billion/month from March 2016 to March 2017, then reduced to 30 billion from January 2018; and to 15 billion euro from October to December 2018, then it will cease.

[10]As an alternative to a generalised fiscal stimulus, as suggested also by Eichengreen (2012), Germany should play the role of "engine of Europe" (similarly to the USA, that have been the engine of the world in the past, thereby accepting to experience large current account deficits). As a matter of fact, the crisis has also been aggravated by a lack of macroeconomic coordination: tight austerity has been especially imposed on debtor (Southern) countries, while creditor (Northern)

Table 2 Total unemployment rate in selected countries (2007–2018)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018[a]
Italy	6.1	6.7	7.7	8.4	8.4	10.7	12.1	12.7	11.9	11.7	11.2	10.8
Germany	8.5	7.4	7.6	7.0	5.8	5.4	5.2	5.0	4.6	4.1	3.8	3.6
France	8.0	7.4	9.1	9.3	9.2	9.8	10.3	10.3	10.4	10.1	9.4	8.9
Spain	8.2	11.3	17.9	19.9	21.4	24.8	26.1	24.5	22.1	19.6	17.2	15.3
Greece	8.4	7.8	9.6	12.7	17.9	24.5	27.5	26.5	24.9	23.6	21.5	20.1
Ireland	5.0	6.8	12.7	14.6	15.4	15.5	13.8	11.9	10.0	8.4	6.7	5.4
Portugal	9.1	8.8	10.7	12.0	12.9	15.8	16.4	14.1	12.6	11.2	9.0	7.7
Eurozone-19	7.5	7.6	9.6	10.2	10.2	11.4	12.0	11.6	10.9	10.0	9.1	8.4
U. K.	5.3	5.6	7.6	7.8	8.1	7.9	7.5	6.1	5.3	4.8	4.4	4.4
Poland	9.6	7.1	8.1	9.7	9.7	10.1	10.3	9.0	7.5	6.2	4.9	4.1
EU-28	7.2	7.0	9.0	9.6	9.7	10.5	10.9	10.2	9.4	8.6	7.6	7.1
U.S.	4.6	5.8	9.3	9.6	8.9	8.1	7.4	6.2	5.3	4.9	4.4	4.0
Japan	3.8	4.0	5.1	5.0	4.6	4.3	4.0	3.6	3.4	3.1	2.8	2.8

Source: Eurostat

[a]European Commission, European Economic Forecasts, Spring 2018

external demand that caused the unsatisfactory economic growth in peripheral countries. Soon after the sovereign debt crisis, many countries adopted "internal devaluations", i.e. cutting wages (at least in the public sector) or halting wage increases, thus achieving indirectly gains in international competitiveness, at the cost of deteriorating social conditions and further compressing consumption and aggregate demand. Of course, it would be much better to increase competitiveness by enhancing productivity growth (rather than cutting wages), but this requires more investments, innovations, appropriate industrial policies, etc. (see below). In any case, rather than exports, internal demand was squeezed in the crisis period: public expenditure (because of the austerity), consumption (as a consequence of falls in employment and/or wages), and especially investment. Total investment has shrunk in the whole Eurozone, but more deeply (by about one third) in the peripheral countries (the PIIGS) in the crisis period.

The pro-cyclical effect of the Eurozone fiscal rules caused also the collapse of public investment, especially in the years 2010–14 (Table 3). Notice that the so-called "Golden rule", i.e. the exclusion of investment expenditure from the computation of public deficits (for the SGP rules), has never been accepted. Notice that investments can sustain, in the short run, aggregate demand and employment; in the long run, they strengthen productive capacity, potential output and productivity.

For achieving higher economic growth, structural reforms are repeatedly advocated by international institutions, including the EU. It is true that liberalisations or introducing more competition in some sectors (certain services, professional activities, credit sector), where it is lacking, can help. But structural reforms should not necessarily imply large reductions in taxation, if this leads to a cut in fundamental social services, expenditures for health or education, incentives to research and development: expenditures that in the crisis period have been already unduly cut and in some countries are extremely low. Instead, the lessening of fiscal pressure should be made possible by contrasting all forms of fiscal evasion and elusion. In addition, in order to raise production and productivity on the supply side, structural reforms should be complemented by a new industrial policy, innovations, R&D, and more investments (see Cappellin et al. 2017).

Thus, in our opinion, there has been too much emphasis, by the EU institutions and policymakers, on structural reforms compared to aggregate demand management. Apart from the evidence that structural reforms have a positive impact on potential output only in the long run, data show that output gaps have been negative for a long period in the Eurozone; in countries like Italy, they have been negative over the whole decade since 2008.[11] This is a clear indication of a lack of aggregate

countries continued to follow balanced-budget policies, with huge trade surpluses in the case of Germany (see De Grauwe 2013).

[11]Moreover, the methodology used by the EU Commission to estimate output gaps tends to underestimate the magnitude of the economic cycle by assuming pronounced hysteresis effects. This procedure produces wrong policy implications by attaching too much importance to structural policies with respect to aggregate demand management; in addition, it entails too high structural deficits, thus requiring an excessive budgetary adjustment.

Table 3 Public investment (as % of GDP) in selected countries (2007–18)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018[a]
Italy	2.9	3.0	3.4	2.9	2.8	2.6	2.4	2.3	2.2	2.1	2.0	2.0
Germany	1.9	2.1	2.4	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.2
France	3.9	3.9	4.3	4.1	4.0	4.1	4.0	3.7	3.4	3.4	3.4	3.4
Spain	4.7	4.6	5.1	4.7	3.7	2.5	2.2	2.1	2.5	1.9	2.0	2.2
Greece	4.9	5.6	5.7	3.7	2.5	2.5	3.4	3.7	3.9	3.5	4.6	4.0
Ireland	4.6	5.2	3.7	3.3	2.4	2.0	2.0	2.1	1.7	1.8	1.9	2.1
Portugal	3.2	3.7	4.1	5.3	3.5	2.5	2.2	2.0	2.2	1.5	1.8	2.2
Eurozone-19	3.2	3.3	3.6	3.4	3.1	2.9	2.8	2.7	2.7	2.6	2.6	2.6
U. K.	2.5	3.0	3.3	3.2	3.0	2.8	2.6	2.8	2.7	2.7	2.6	2.6
Poland	4.5	4.8	5.0	5.6	5.8	4.7	4.1	4.5	4.4	3.3	3.7	4.4
EU-28	3.2	3.4	3.7	3.5	3.3	3.1	2.9	2.9	2.9	2.7	2.7	2.8
U.S.	3.8	4.0	4.2	4.1	3.9	3.6	3.3	3.2	3.2	3.1	3.2	3.2
Japan	3.6	3.5	3.9	3.7	3.6	3.6	3.9	3.9	3.7	3.6	3.7	3.6

Source: Eurostat (government gross fixed capital formation)
[a]European Commission, European Economic Forecasts, Spring 2018

demand. Thus, expansionary stabilization policies are still needed. As mentioned above, monetary policy has progressively become more accommodative, but the drawback is that such policy is not able to solve, on its own, the stabilization problems, as admitted by Draghi himself (ECB 2014). Moreover, the favourable conditions are reaching an end: the QE is going to stop at the end of 2018, interest rates will be raised in a short time[12] and nobody knows what kind of monetary policy will be followed after the conclusion of Draghi's term (October 2019), but it will be likely that Germany will force a more conservative strand.

3 The Future of the Eurozone According to European Institutions and the Needed Reforms for the Euro's Survival

Since its introduction in 1999, the euro was considered as irreversible by the institutions and also by the markets. The exchange rates between the previous currencies and the new monetary unit were fixed "for ever": this was the final stage of the process leading to the European Economic and Monetary Union. More recently, following the sovereign debt crisis, because a redenomination risk made its appearance, many unconventional measures were introduced by the ECB (as illustrated in the previous section). ECB President, Mario Draghi, very often stressed the "irrevocability of the euro", although he also recognized the need to improve the functioning of the Eurozone. Without significant reforms euro's survival is not guaranteed: this is the opinion of many economists and policymakers. Some proposals have been made by the EU institutions themselves, in particular the EU Commission and the EU Council.

The 2012 (June 26) "*Four presidents' report: Toward a Genuine Economic and Monetary Union*" was the first official document of the EU institutions, after the beginning of the financial crisis, setting the need to realise a "*stronger EMU architecture, based on integrated frameworks for the financial sector, for budgetary matters and for economic policy. All these elements should be buttressed by strengthened democratic legitimacy and accountability*". The key limitation of this report is the fact that it was too short, generic and, when talking about "the next decade", was non-specific concerning the time horizon. It was followed by the 2015 (June 22) "*Five presidents' report: Completing Europe's Economic and Monetary Union*" that has the merit to further focus on the Eurozone; it concluded that "*the foundations of EMU need to be strengthened to ensure a smooth functioning of the currency union and to allow the member states to be better prepared for adjusting to global challenges*". The final aim indicated in the report is to reach by 2025 "*a deep*

[12]Following the international markets: in the US they already reached 2%, after 3 years of increases. In June 2018, however, Draghi announced that they will remain at the current (zero) level at least until September 2019.

and genuine EMU" and it mainly argued—without a complete definition of all the necessary operative details—on the possible progress on the following four fronts: (i) economic union (focusing on convergence, prosperity, and social cohesion), (ii) financial union (completing the banking union and launching the capital markets union), (iii) fiscal union (ensuring sound and integrated fiscal policies), and (iv) democratic accountability, legitimacy and institutional strengthening (reviewing the political construction of the EMU).

The 2017b (March) European Commission "*White Paper on the Future of Europe*" does not specifically focus on the Eurozone but on the EU-27 perspectives (after Brexit) and it presents five different scenarios on how Europe could evolve by 2025. The scenarios are described generically, without providing any details of the institutional processes. Here we briefly mention the different scenarios only summarizing the key implications. Scenario 1 "*Carrying on*": (i) incremental progress on improving the functioning of the euro area; (ii) budget innovations to reflect the reform agenda agreed at 27; (iii) new decision-making process (that however remains difficult to grasp and whose capacity to deliver does not always match expectations). Scenario 2 "*Nothing but the single market*": (i) cooperation in the euro area remains limited; (ii) budget will be refocused to finance essential functions needed for the single market; (iii) decision-making may be easier to understand but capacity to act collectively is still limited (hence issues of common concern often will need to be solved bilaterally). Scenario 3 "*Those who want more do more*": (i) as in "Carrying on" except for a group of countries who will deepen cooperation in areas such as taxation and social standards; (ii) as in "Carrying on", additional budgets are made available by some Member States for the areas where they decide to do more; (iii) as in "Carrying on", a positive agenda for action at 27 yields positive results (some groups achieve more together in certain domains but decision-making becomes more complex). Scenario 4 "*Doing less more efficiently*": (i) several steps are taken to consolidate the euro area and ensure its stability; the EU27 does less in some parts of employment and social policy; (ii) budget significantly redesigned to fit the new priorities agreed at the level of the EU27; (iii) initial agreement on tasks to prioritise (once in place, decision-making may be easier to understand and the EU may act quicker and more decisively where it has a greater role). Scenario 5 "*Doing much more together*": (i) economic, financial and fiscal Union is achieved as envisioned in the report of the Five Presidents of June 2015; (ii) significantly modernised and increased budget, backed up by own resources (a euro area fiscal stabilisation function can be introduced); (iii) decision-making is faster and enforcement is stronger across the board; but questions of accountability arise for some who feel that the EU has taken too much power away from the Member States. In short, this last scenario is the only one that—although in general terms—includes some indications on how to improve the functioning of the Eurozone and its resilience to crises.

The 2017 White Paper has been followed by additional European Commission "Reflection Papers", including one on the "*Deepening the Economic and Monetary Union, on the basis of the Five Presidents' Report of June 2015*". This "*Reflection*

Paper"[13] (May 2017) has the great merit—for the first time by an European institution—to finally design possible detailed reforms of the Eurozone in order to improve its functioning; however, some proposals—contained in the third and fourth part of the document—are weak and some key issues are still lacking. We recall, however, that in the "Reflection Paper" there are some specific proposals to make the Eurozone more resilient to future shocks, in particular two options for introducing a "stabilisation function": the European Investment Protection Scheme and the European Unemployment Reinsurance. However, in our view, such schemes could effectively work only with adequate resources of a specific Eurozone budget. In addition, the 2025 deadline is too far away for contrasting the current economic and social situation still hampering some countries (like Italy and Greece). As for the Financial Union, looking beyond the Banking Union and the Capital Markets Union, the "sovereign bond-backed securities" proposal seems just an ingenious (although second best) solution, alternative to the Eurobonds proposal, for which the political consensus is still lacking. Finally, the Commission's paper also contains some ideas for improving the European democracy and governance, although the final goal of a "political union" is not clearly defined.

Finally, it should be stressed that in the most recent Euro Summits (December 2017, March and June 2018) only minor reform steps were defined and the main point (the creation of a fiscal capacity at the Eurozone level) will be probably discussed in the next Summit, in December 2018.

As a final comment on the official documents, we can observe that the European institutions look quite aware of the need to reform the Eurozone, but the concrete definition of the process is still lacking, especially due to the persistently missing political consensus in the Member states. Yet, a "status quo" scenario bears many risks: the Eurozone will probably survive in the short/medium-run, especially without new financial crises or the political decision of individual big countries to exit, but without some radical reforms the long-run sustainability of the euro will not be guaranteed.

Many reforms proposals have been extensively discussed in the recent literature.[14] A first wise reform is the adoption of an adequate Eurozone budget, that could be used also for both stabilization and crisis management purposes, including a European unemployment insurance scheme. In some proposals, certain fiscal policy decisions should be centralised with the establishment of a EU Finance Minister. For example, within the discussion of more general reforms of the EU (and Eurozone) governance, some proposals have been made for a Ministry of Finance of the Eurozone (supported also by the French President, Emmanuel Macron) or a new European Treasury, or also a "European Fiscal Institute" (that could be an evolution

[13]European Commission (2017a), Reflection Paper on the Deepening of the Economic and Monetary Union.

[14]On the topic of how to complete EMU, see Baldwin e Giavazzi (2015), Baldwin e Giavazzi (2016), Bénassy-Quéré and Giavazzi (2017), Minenna (2016), Costa Cabral et al. (2017). For a more complete discussion see Marelli and Signorelli (2017a), in particular the references provided in Chap. 7.

of the European Stability Mechanism) (see among others Bénassy-Quéré and Giavazzi 2017 and European Commission 2017b).[15] However, in our opinion (as already discussed), such institutional reforms will only guarantee the euro survival in the long run if two conditions will be satisfied: (i) the Eurozone budget should have an adequate size; (ii) the EU Finance Minister should not only supervise national public accounts (deficits and debts), but should have the power to dispose of sufficient resources (and allocate them where needed), both for stabilisation purposes and also to support economic convergence among member States.

In more general terms, for EMU long-run sustainability one principle should be accepted: risk-reduction should be accompanied by risk-sharing. This includes a progressive mutualisation of public debts, through the issue of Eurobonds in substitution (at least partly) of national bonds. This reform has not, at present, the necessary political consensus. However, while the entire mutualisation of public debt will be almost impossible also in the long-run, a more realistic and possible solution is a partial (up to 60% of GDP of each country) transformation of national debts in Eurobonds (see for more details Marelli and Signorelli 2017a). Some intermediate proposals have also been made, such as the "European safe bonds", that are formed from the senior tranche of a diversified portfolio of euro area sovereign bonds, but do not imply any risk sharing,[16] since a common warranty only applies to the new bonds issued at the European level (see Brunnermeier et al. 2016; Pagano 2017).

Some other important reforms to be implemented in order to make possible the long-run survival of the euro are related to monetary policy. While EU institutions themselves are aware of the needed steps in the short-run to complete the banking union,[17] and while there are some fears about the direction of monetary policy after the conclusion of Draghi's Presidency (October 2019), there has been a debate among scholars about the need to achieve in the future a more complete mandate for the ECB, including for instance also targets on real variables (employment and growth). It is difficult that consensus will gather on this proposal, both currently and in the future; however it is clear that the ECB should formally[18] dispose of all the

[15]See also the critiques in Marelli and Signorelli on the "Reflection paper" (European Commission 2017b).

[16]This is also a drawback of the proposed instrument, since as Minenna (2017) puts it: "The lack of risk-sharing therefore leaves the door open for spreads to widen again in times of stress". A limited moral hazard is instead implied by the PADRE (Politically Acceptable Debt Restructuring in the Eurozone) plan (see Pâris and Wyplosz 2014).

[17]The third pillar of the banking union, i.e. a common insurance scheme of bank deposits, is still missing. Again, the requests of Germany and Northern European countries to substantially reduce the non-performing loans and also the weight of domestic debt in the budget of private banks reveals the priority given to risk-reduction compared to risk-sharing; those requests should be adequately contrasted.

[18]Beyond the unconventional measures envisaged by President Draghi, such as the OMT plan and the QE.

instruments of other central banks, including the "lender of last resource" function to guarantee the Eurozone debt.[19]

We are aware that it is unrealistic to believe that the most radical reforms will be introduced and implemented over the next few years, also because—besides the lack of political consensus in most EMU countries—doing that would imply the need to change the existing Treaties. However, it is really crucial that the entire process be well defined and progressively implemented, including a final long-run perspective of political integration in a federal system, that should be well designed in order to guarantee democratic participation, decision and control.

We turn now to the reforms that can be realized in a short-run horizon. A first reform regards the fiscal rules on public deficit and debt; as a matter of fact, the Stability and Growth Pact might be changed without complex institutional reforms. Specifically, there is a need to adopt more growth-friendly fiscal rules, in order to favour a higher GDP growth, in particular through an increase of public investment.[20] As already emphasized (Sect. 2), public investment significantly declined in the past decade in several Eurozone countries, especially those more hit by the long crisis. This cut has been the worst economic policy mistake, also because public investment indirectly affects private investment (that also shrunk during the crises) and aggregate demand in general; moreover, public investment supports, in a long-run perspective, also aggregate supply, potential output and productivity.

The simplest way to make an increase of public investment possible is the adoption of a "golden rule", i.e. the exclusion of national public investment from the count of deficit relevant for the application of the excessive deficit procedure (in the Stability and Growth Pact). However, this proposal—in order to be accepted by Germany and other Northern European countries—needs more details: (i) the medium term objective of zero (overall) deficit should be transformed in a continuous objective of "zero or positive" (net of investment) balance on annual public accounts, with a limit of an overall deficit lower than 3% of GDP[21]; (ii) in order to favour the selection of high quality public investment able to favour effective and potential economic growth, all countries should introduce ex ante, in itinere and ex post controls on the investment plans; (iii) with the aim to guarantee the sustainability of public debts, the continuous decreasing tendency of the debt to GDP ratio should be confirmed for the countries with a ratio higher than 60%.[22]

[19]According to Pisani-Ferry (2012) to make the euro less vulnerable, it is appropriate to eliminate at least one condition of the following "trinity": the prohibition of monetary financing of deficits, the lack of co-responsibility on sovereign debts and the interdependence between banks and debts sovereign.

[20]De Grauwe e Ji (2016), Micossi (2016) and De Grauwe (2017) are some of the many authors attributing a key role to public investment.

[21]Only in well defined big shock situations, causing a recession, a higher deficit should be permitted.

[22]The decreasing direction has to be compulsory, however the speed of this tendency should be negotiated also taking into account the cyclical conditions.

An alternative possible reform, better on several aspects than the one just illustrated but still attributing a special role to public investment, could be realised through a direct Eurozone initiative, as illustrated in the next section.

4 An Immediate Solution: A Grand European Investment Plan

While waiting for the more general, but difficult, reforms of the euro architecture, that should try to make the monetary union more complete (including the introduction of a significant Eurozone budget), we think that macroeconomic policy should be quickly made more expansionary, by means of a European large investment plan, possibly financed by Eurobonds.

The idea of a Grand European Investment Plan arose from the consideration of the large impact of the long crisis. As already illustrated (see Sect. 2), the real problems in the Eurozone concerned internal demand: consumption and, even more significantly, investment (together with public expenditure because of the mentioned austerity). Over the crisis period, total investment collapsed by about one third in the peripheral countries of the Eurozone, and they are still much lower than the 2008 levels. What is unjustifiable is that even public investment has been deeply cut, thereby exacerbating the pro-cyclical behaviour of fiscal policies.

The Juncker plan introduced in 2015 was an initial sensible response, but it has been too timid as for the resources allocated and too slow in its implementation (European Commission 2016). It is hard to believe that the current very favourable monetary conditions—zero interest rates (or around 2% interest rate on the long term sovereign debt of peripheral countries)—do not allow policymakers to find investment projects whose rate of return exceeds the cost of financing (see also Micossi 2016; De Grauwe 2017). We do not necessarily refer here to huge infrastructure projects or public works (including transports, communications, digital agenda), that are often characterized by long planning and implementation times as well as by budgets continuously revised upward. We rather mean a variety of "micro-investments" spread over the territory (see Cappellin et al. 2017), such as: environment protection, safeguard of the territory, anti-seismic interventions, energy efficiency, social housing, hospitals and schools building and renovation, local transport, tourist infrastructures, and many other "micro-investments"; specific investments in education and R&D could also be included.

Marelli and Signorelli (2017a) originally proposed a plan of new investments additional to the current national ones, worth about 500 billion euros, i.e. equivalent to 5% of Eurozone's GDP, to be realized within 3 years (with a possible extension to 5 years). It could be financed either by Eurobonds[23] or through a major involvement

[23]For instance, eurobonds at 10 years could be issued at a low interest rate (probably lower than 2%).

of the European Investment Bank, that might issue bonds to be purchased either by the market or, on the secondary market, by the ECB itself (such purchases have been partially made within the QE program). The direct involvement of the EU budget is at present not possible because of its limited size, although the principle has been accepted even by the European Commission.[24]

Notice that a positive shock on public investment can have a double economic benefit, as already stressed. In the short run, it supports aggregate demand, production and employment; through multiplier and expectation effects, it stimulates also private investment and consumption. A second economic benefit can be obtained in the long run, since it raises productive capacities, potential output and productivity[25]; thus, it will be self-financed, thanks to the increase of future incomes and tax receipts.

In order to favour the necessary political consensus on this proposal from Germany and other "core" countries, the resources should be distributed to each Eurozone country in proportion to the national population (or GDP) and also the annual interest rate expenditure should be added to each national budget with the same distribution (i.e., proportionally to the population or GDP). The debt service could be limited, given the current low interest rates; we can assume it, in a precautionary way, to be around 2% on 20-years maturity bonds, equivalent to 10 billion euros for the whole Eurozone.[26]

This idea has been better defined in Della Posta et al. (2018), where a "*market-financed and growth-enhancing investment plan for the euro area*" has been proposed. In that paper, it is shown, through a theoretical model, that the investment plan will not only improve the economic and social situation, but it will make more sustainable also the national sovereign debts. These positive effects are derived thanks to the improved growth prospects and the interest rates reduction. In particular, the plan will relax the constraint on the primary surplus that would be necessary to guarantee the public debt stability of individual countries, thereby reducing the risk premium and exerting a further stabilizing effect on the interest rate.

It is important to stress that the proposed plan would not imply any direct commitment of euro area (or EU) countries to rescue high indebted countries. It would just mean to create the conditions for some growth enhancing and interest rate

[24]See the Document "*A Stabilization Function*" within the Roadmap set in December 2017 (European Commission, 2017a): the proposed "European Investment Protection Scheme" could get, in this proposal, some limited annually budgeted grant support from the EU budget; this budget can also provide some guarantees for issuing loans to provide the stabilisation function. The principle to stabilize investments over time and to protect them (including infrastructure and skills development) in the event of large asymmetric shocks is suitable, but the hypothesised procedure is cumbersome and probably ineffective.

[25]According to De Grauwe and Ji (2016), an investment plan has a greater growth impact compared to structural reforms.

[26]A more specific example could be helpful: Italy, that represents 17.5% of Eurozone's economy (this is the weight in ECB's capital), should pay 1.75 billion euro of interests each year, in front of 87.5 billion euro of new investments (to be realized within 3 years).

reducing policies that would also indirectly favor the reduction of the high national public debts. The investment projects will be monitored by euro area (or EU) countries, so the solidarity mechanism that such a plan implies would only be limited to this new level of euro area debt that would be under the direct control of all stakeholders.

A possible operative solution is the establishment of an external institution centered around the European Commission, through which "core" and Northern euro area countries would supervise the market-financed investment operations. Northern euro area countries, then, should realize that the umbrella provided by the euro area would be a costless way for them to keep enjoying a still significant part of the gains that they have been making so far (especially in terms of the positive net exports and current accounts).

5 An Additional, Relevant, *Political* Benefit of a Grand European Investment Plan

The proposed investment plan is much more extensive compared to the Juncker plan (introduced in 2015) and, also, innovative in the financing solutions. It is consistent with previous EU programs, such as the Lisbon agenda and "Europe 2020", where a smart, sustainable and inclusive growth is the key goal; such programs, however, did not provide specific resources at the European level to reach the stated objectives. As anticipated in Sect. 2, a large expansionary plan will improve not only economic growth but also the social conditions in the European countries.

This point brings us to discuss the crucial relationship between markets and democracy (somebody may refer instead to the relationship between markets and populism), or to the old issue of the business political cycle, that would need to be further scrutinized. As a matter of fact, the conclusion of that literature was that the search for consensus determined a worsening of public finances and it provided therefore a quite relevant argument for concluding that the fiscal authority had to be limited in its ability to act.

That representation of politics is, however, not necessarily the only one that can be made. In our case, we can observe that the fiscal austerity has discouraged euro-enthusiasts and has made far less appealing, to many European citizens, the perspective of proceeding further in the process of European integration. Not only fiscal austerity did not succeed in reducing the public debt-to-GDP ratios across Europe (because of the perverse effect it had on GDP, as we have argued above and as it is widely recognized in the literature). It had a possibly even worse effect which needs to be considered, namely the disaffection towards Europe of a large share of (mainly Southern) European citizens.

So, turning to an expansionary, market-financed investment plan, will have a positive effect not only on GDP growth, on interest rates and on public debt-to-GDP

ratios, but also—and maybe even more importantly—on the perspectives themselves of the long run success of EMU and potentially of the EU.

It could be argued that while this would gain the favor and the consensus of Southern euro area countries, the opposite would be true for the citizens of Northern euro area countries. Those citizens, though, should be reminded that the true choice to be made may not between a situation in which countries remain in the euro area accepting a big investment plan or not accepting it, but rather between the former and no euro area at all, since over time no countries will desire to remain in a union which imposes more costs than the benefits they receive from it.

What precedes takes us also to discuss the position that Dani Rodrik (2018) and Joseph Stiglitz (2017) have on populism. It has been quite often argued that financial markets oblige governments to take restrictive fiscal and monetary positions: in the light of the risk of the emergence of populism, the need to obtain democratic consensus may lead to opposite conclusions. In other words, there may well be a divergence between the requirements of market orthodoxy and those of a democratic consensus. Notice that populist movements have already influenced political decisions in many EU countries (in some of them they are already represented in the national government).[27]

The presence of a sort of "fiscal lender of last resort"—ready to provide the fiscal expansion that is necessary to obtain a democratic consensus—might be necessary, then, precisely to reassure the markets. The presence of such a guarantee, however, does not necessarily mean that it will need to be exerted, as the ECB's OMT and the experience of the ESM clearly show.

This means, then, that markets and democracy may well go along, rather than conflicting with each other. The democratic support of the euro area is a necessary ingredient for the success of the process of monetary, economic and political integration.[28] The causation link might actually be reversed, then: the need to obtain the democratic consensus and to avoid populism might well suggest the adoption of appropriate euro area expansionary investment policies. This would help gaining the favor of the markets, precisely because they would recognize that such non-restrictive policies are necessary to plant the seeds for the future euro area GDP growth and success.

[27]The risk of new political equilibria in the European Parliament, after the 2019 elections, are also large.

[28]The delicate equilibrium between democracy and populism emerges also in Rodrik's trilemma (Global Markets, National control, Democracy): in order to regain national sovereignty and democracy, the global dimension (or EU's) may well have to be abandoned. So, if Southern countries feel that their national control is lost, they may want to regain it and leave the EU: Brexit can be interpreted along these lines (see for example Della Posta and Rehman 2017).

6 Concluding Remarks

In this paper, we have seen that the euro, a new currency introduced in 1999, has witnessed two completely different periods. In the first decade it warranted stability in the Eurozone (also in world markets it was considered a valid alternative to the dollar). In the second decade of its life, after the global financial crisis, it exhibited its weaknesses. In our opinion, the limits are not so much of the new currency itself, but rather of the incompleteness of the monetary union and of the wrong economic policies adopted after the sovereign debt crisis. The key mistakes, in particular the austerity approach imposed on peripheral countries in a recession period, have been discussed in Sect. 2. Only thanks to the progressively accommodative monetary policy by the ECB, the euro managed to survive so far.

Looking at future scenarios, the official documents by the EU institutions are aware of the need to complete the monetary union (Sect. 3), but the list of necessary reforms is rather vague and the time span too long and uncertain. In the long-run the Eurozone's might collapse without the necessary reforms (see also Stiglitz 2016).

The key reforms, according to us, for the survival of the euro (illustrated in Sect. 3), include a monetary policy with a wider mandate and a specific Eurozone budget, both as an effective crisis-management tool and for stabilisation purposes. A new central authority responsible for the fiscal policy (a European Fiscal minister or similar) should dispose of adequate resources, both for macroeconomic stabilisation (possibly including unemployment insurance) and to support real convergence across the economies of the monetary union. Of course we are aware that, due to the need to create the necessary political consensus, the mentioned reforms constitute a long-run program, to be realised little by little with a policy of "small steps" (e.g., De Grauwe and Ji 2016). In our opinion, the essential thing is that the direction of movement should be very clear and that the steps, even if "small", should be constantly realized over time. Otherwise the risk is to remain for some years in a substantial "status quo", finally leading—in the long-run—to the collapse of the monetary union and perhaps of the EU itself.

It is even more urgent to change macroeconomic policies to support aggregate demand, in particular through public investments, either at the national level (introducing a greater margin of intervention thanks to a "golden rule" in the Growth and Stability Pact) or at the European level, or both. A Grand European Investment Plan, to be realized by the issue of Eurobonds, would be the best solution (see Sect. 4). We have emphasized the stabilizing effects of such an investment plan, that would increase GDP growth and reduce interest rates on existing national public debts; through this channel, it would also improve the financial conditions in the Eurozone. The plan will not only increase GDP growth, both in the short-run (aggregate demand stimulus) and in the long-run (supply-side effects), but—by gradually improving the social situation—will also lessen the opposition toward the European integration process, making possible further reforms in the governance of the European monetary union and thus making more feasible the survival of the euro.

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Inequality Undermines Democracy and Growth

Thorvaldur Gylfason

Abstract Income equality and trust seem to go along with several other ingredients of social capital as determinants of economic growth across the globe. In a large sample of countries, equality in the distribution of income as measured by the World Bank and by The Standardized World Income Inequality Database are seen to be correlated with economic diversification, the rule of law, transparency as measured by the corruption perceptions index from Transparency International, trust as measured in the World Values Survey, and democracy, all of which are good for growth as reflected in the purchasing power of per capita national income.

Keywords Inequality · Social capital · Democracy · Growth

JEL codes O43 · O15

1 Introduction

There was a time, not long ago, when inequality in the distribution of income and wealth was widely considered inconsequential to mainstream macroeconomics. Distribution and related topics in welfare economics were seen as normative in nature, and were relegated to microeconomic study. Many economists envisaged a dichotomy separating distribution and such from real macroeconomic issues, doubting that distribution could matter much for macroeconomic outcomes. The idea that rich and poor households have different propensities to consume and save as Kaldor (1961) argued, with potentially important consequences for short-term macroeconomic analysis as well as for medium-to-long-term growth, did not leave a

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lasting imprint on mainstream macroeconomics. Also, the notion that consumers and workers care about relative incomes and wages as argued by Duesenberry (1949) and later also by Gylfason and Lindbeck (1984a, b), Acocella et al. (2009), Card et al. (2012), and others makes only occasional appearances in macroeconomic models.

This may change. Inequality of income and wealth has quite suddenly captured the attention of economists. Piketty's *Capital* (2014) became an overnight sensation, following several other noteworthy books dealing with distribution, including Deaton's *Great Escape* (2013), Stiglitz's *Price of Inequality* (2013),[1] Galbraith's *Inequality and Instability* (2012), Rajan's *Fault Lines* (2011), Milanovic's *Worlds Apart* (2005),[2] and Campano and Salvatore's *Income Distribution*, a textbook (2006). The works of Atkinson, Piketty, Saez, and others prepared the ground for the sudden flare-up of interest in distribution, not only among economists but also politicians.

The steady progress in the standard of life since 1960 is evidenced by rising per capita incomes and also by the rise in average global life expectancy by 19 years since 1960, or from 53 years in 1960 to 72 years in 2016. Meanwhile, with the ascent of China and India, inequality among nations has decreased as inequality within nations has increased since 1980 (Milanovic 2016). From the 1980s to 2015, the top 1% of households increased its share of pre-tax national income from 8 to 12% in Europe and from 8 to 20% in United States. Over the same period, the top 1% of households increased its share of net national wealth from 20 to 40% in both Europe and United States (World Inequality Database 2018). In 2017, it took ordinary workers the whole year—364 days!—to earn the average daily compensation of J. P. Morgan's Chief Executive Officer.[3] We could go on.

These indications of increased inequality have transformed politics. A self-described socialist, Senator Bernie Sanders, suddenly became a mainstream politician without changing his message, and came close to winning U. S. presidency in 2016. Taking almost everyone by surprise, Donald Trump won the presidency by appealing to those who felt left behind by globalization. In another 2016 surprise, also feeling left behind, British voters chose to leave the European Union. The election of Trump and Brexit threw the United States and the United Kingdom into political turmoil.

In the United States, the problem became apparent before 2016. Signs of social capital decay include declining interpersonal trust as documented in Putnam's *Bowling Alone* (2000). Transparency International (2018) has lowered the U. S. corruption perceptions index, ranking the United States 16th in a group of 180 countries, well below Canada's rank of 8. In 2012, 73% of Gallup (2013) respondents in the United States considered corruption to be "widespread throughout the government" compared with 46% in Canada. Gallup (2018) reports that the proportion of its

[1] See also Stiglitz (2015).

[2] See also Milanovic (2016).

[3] See Mishel and Schieder (2018).

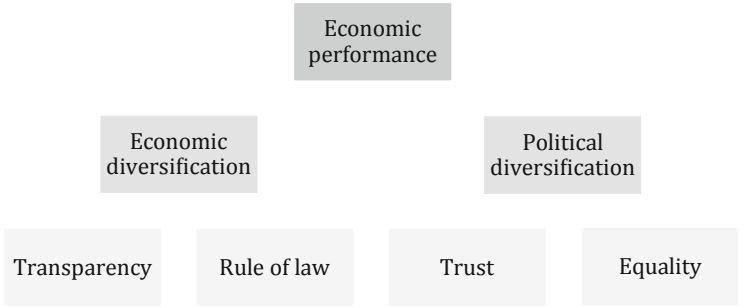

Fig. 1 Web of linkages

U. S. respondents expressing a great deal or quite a lot of confidence in the Supreme Court declined from 49% in 1975 to 37% in 2018 while confidence in Congress dropped from 42% to 11%. Life expectancy in the United States declined in 2015, 2016, and 2017, the first time since the First World War that U. S. life expectancy has fallen three years in a row (Case and Deaton 2017). Freedom House (2018) lowered the democracy score of the United States little by little from 94 in 2010 to 86 in 2017. Canada's score is 99. Even democracy is under stress as evidenced by a string of striking titles of recent books published by American political scientists and historians, including Page and Gilens's *Democracy in America?* (2017), Levitsky and Ziblatt's *How Democracies Die* (2018), Mounk's *People vs. Democracy* (2018), and Snyder's *Road to Unfreedom* (2018).

The decay of social capital can be contagious across borders. Misbehavior by U. S. elites provides cover for similar misconduct in other countries. Some other liberal democracies show disquieting signs of decaying social capital.

This study is intended to chart cross-country relationships among various aspects of social capital, including income distribution and democracy, and economic growth as reflected in the purchasing power of per capita Gross National Income (GNI). The point of departure is that long-run economic growth is driven by the buildup and use of four kinds of capital: Physical capital, Human capital, Natural capital, and Social capital. Five pillars of social capital will be stressed: Democracy, Equality, Rule of Law, Transparency, and Trust. The accumulation of physical capital boosts growth directly while human capital, social capital, and natural capital, if well managed, encourage growth indirectly by promoting efficiency and technology.

The strategy of the study is to explore the bivariate cross-country relationships between the purchasing power of the level of current (i.e., most recent) per capita income and each of the various potential determinants of growth shown in Fig. 1 as well as bivariate relationships among those variables.

The main questions posed in what follows will be:

1. Does economic diversification—i.e., the distribution of GNI across industries—matter for the level of per capita GNI? If diversification boosts output, this may

help to explain why heavy reliance on natural resources, if not well managed, may stunt output.
2. Does political diversification through the fortification of democracy matter for economic diversification and per capita GNI? If economic and political diversification can be viewed as parallel ways to avoid having too many eggs in one basket, both types of diversification can help to avert excessive concentration and associated risk.
3. Do different pillars of social capital—democracy, transparency, rule of law, trust, and equality—support one another? And do they matter for diversification and per capita GNI?

2 From Double Diversification to Growth

Economic diversification and democracy can be seen as two sides of the same coin. Economic diversification means diversification of exports and output away from excessive dependence on natural resources. Political diversification means increased democracy, i.e., diversification away from excessive dependence on a narrow political base toward political pluralism. Both types of diversification aim to avert national risk. Most countries, especially those that rely on a few industries or resources for much of their incomes, seek to diversify their economies because they view diversification as an essential aspect of national risk management. Some may suspect that, by reducing risk, diversification may also encourage economic efficiency and growth as argued in Gylfason and Wijkman (2016).

The modest aim here is merely to erect some statistical scaffolding by reviewing simple bivariate correlations among different aspects of social capital, diversification, and growth in preparation for more comprehensive multivariate econometric work.

Figure 2 shows that economic and political diversification are closely correlated across countries.

Economic diversification is measured by the Theil index of export diversification developed recently at the International Monetary Fund (IMF). The Theil index is a suitable measure of inequality, segregation, and other forms of diversity, designed to reflect diversity within as well as among sectors and groups. Specifically, the Theil index adds measures of diversity across sectors (vertical diversity or extensive margin, meaning new export products or new export destinations) and diversity within sectors (horizontal diversity or intensive margin, meaning a larger volume of exports of old products). The index covers merchandise exports only, not services, from 1962 to 2010. The more diversified a country's exports, the lower the Theil index that reaches from 8 to 1. Like other trade statistics such as export ratios, the Theil index may reflect country size as well as export diversification because large, i.e., populous, countries are more likely than smaller ones to have diversified their exports.

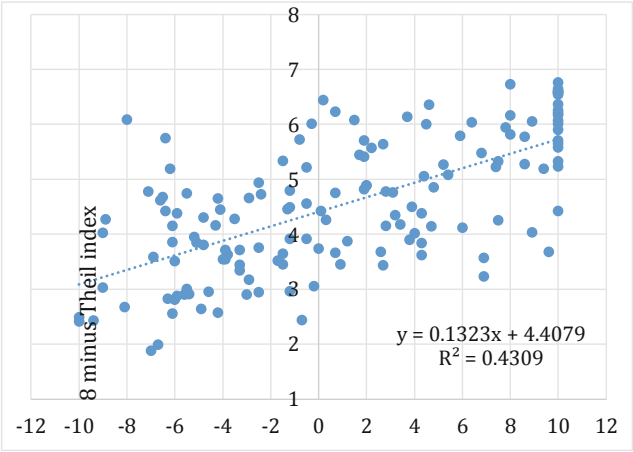

Fig. 2 Polity2 index of democracy 1960–2012 and Theil index of export diversification 1962–2010 (148 countries). Note: Vertical axis shows 8 minus Theil index so economic diversification increases upward along the vertical axis. Horizontal axis shows Polity2 index of democracy that increases from left to right

Political diversification is measured by the Polity IV Project's Polity2 variable, which reflects several characteristics of democratic vs. autocratic authority in governance. The index spans a spectrum from fully institutionalized autocracies through mixed authority regimes ("anocracies") to fully institutionalized democracies on a 21-point scale ranging from minus ten (hereditary monarchy) to plus ten (consolidated democracy).

In Fig. 2, the coordinates of each observation represent average values of the two indices for a given country in a sample of 148 countries. The correlation between the two series is 0.66.[4]

Figures 3 and 4 show the relationship between each type of diversification and per capita GNI. In both figures, the variable on the vertical axis is the natural log of the purchasing power of per capita GNI in 2016 on the grounds that the level of current income reflects past rates of growth. The use of only the end-of-period value of per capita GNI for each country rules out reverse causation from income to diversification. In Fig. 3, with a correlation of 0.46 between economic diversification and income, the relationship shown is significant in a statistical sense. It is also significant in an economic sense because the slope of the regression line through the scatter (0.47) suggests that an increase in economic diversification by 20% of the scale of the diversification index along the horizontal axis (i.e., by 1 which is

[4]Gylfason (2018) reports results for three different measures of economic diversification—i.e., the Theil index used here, the IMF's product quality index, and the economic complexity index developed by Hidalgo and Hausmann (2009)—and also for three different measures of political diversification—i.e., the Polity2 index used here as well as the civil liberties and political rights indices compiled by Freedom House (2018).

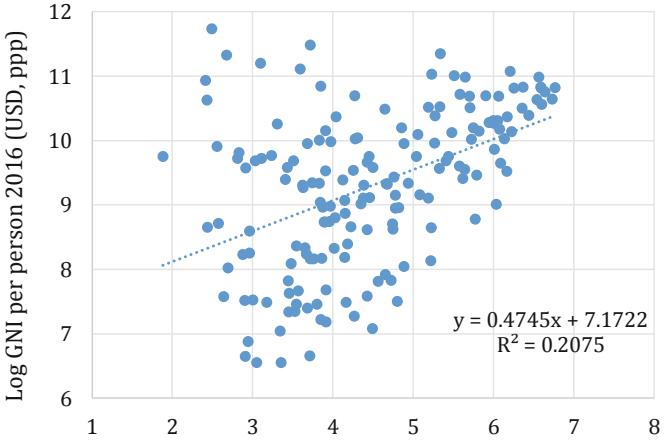

Fig. 3 Theil index of export diversification 1962–2010 and log per capita GNI 2016 (167 countries). Note: Horizontal axis shows 8 minus Theil index so diversification increases from left to right

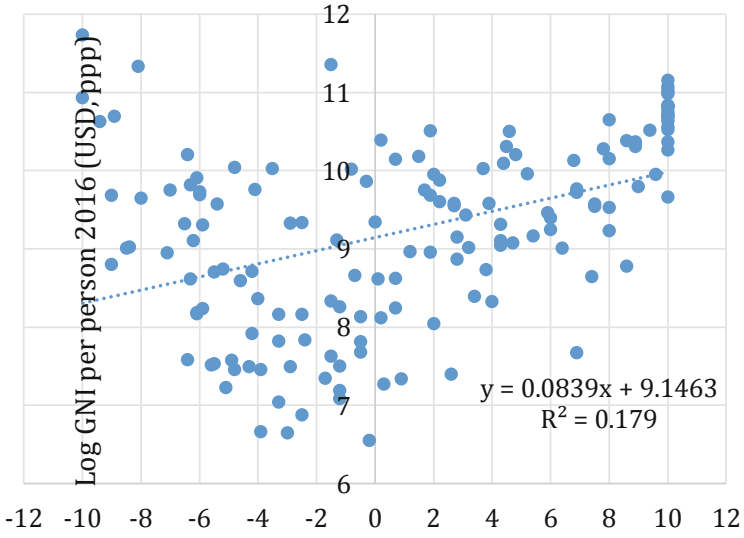

Fig. 4 Policy2 index of democracy 1960–2012 and log per capita GNI 2016 (154 countries) Note: Horizontal axis shows Polity2 index of democracy

one-fifth of the scale from 2 to 7) is accompanied across countries by a nearly 50% increase in per capita GNI along the vertical axis. A similar result emerges from Fig. 4 where an increase in political diversification (democracy) by 20% of the scale of the democracy index (i.e., by 4 out of 20) along horizontal axis is accompanied by a 33% increase in per capita GNI along vertical axis. The correlation is 0.42.

In sum, economic diversification and democracy are both seen to be positively correlated with per capita GNI across countries. Other measures of economic and political diversification have been shown to produce similar results as those reported in Figs. 3 and 4 (Gylfason 2017, 2018). These results suggest that an index of economic diversification may belong in cross-country growth regressions as a more broadly based replacement for various indicators of natural resource intensity currently in use. If so, we may have here a new reason to think that excessive dependence on natural resources, by reducing diversification and exposing the economic system to risk, can slow down economic growth over time as suggested by Sachs and Warner (1995) and others. If not well managed, i.e., if allowed to result in rampant rent seeking, repeated bouts of Dutch disease, and such, natural capital may, unlike other types of capital, undermine long-run economic growth. The same does not apply to human capital and social capital to which we now turn.

3 Transparency, Rule of Law, and Trust

Transparency is an important ingredient of social capital, understood here to constitute the adhesive that holds society together and enables it to prosper through solid arrangements and institutions that are governed by the rule of law and enjoy well-earned popular trust. By weakening social capital, a lack of transparency can undermine social cohesion, democracy, and growth. Louis Brandeis, U. S. Supreme Court Justice 1916–1939, understood this. He said: "Publicity is justly commended as a remedy for social and industrial diseases. Sunlight is said to be the best of disinfectants; electric light the most efficient policeman."

No independent statistical measure of transparency exists yet. Even so, the Corruption Perceptions Index (CPI) from Transparency International may come close. By construction, the CPI varies inversely with corruption. We can, therefore, as a first approximation, define transparency as

$$\text{Transparency} = \text{Corruption Perceptions Index}.$$

How does transparency, thus assessed, vary with economic and political diversification? Figures 5 and 6 show how.

Figure 5 shows how average transparency for the years 2012–2016 and economic diversification as measured in Figs. 2 and 3 go together across countries. The correlation between the two is 0.41. The estimated slope of the regression line suggests that an increase in the CPI by 20 points goes along with an increase in economic diversification equivalent to 0.5 points or 10% of the scale from 2 to 7 in the figure.

Figure 6 shows how transparency and democracy go together. The correlation between the two is 0.48. The estimated slope of the regression line suggests that an increase in the CPI by 20 points goes along with an increase in political diversification equivalent to 3 points or 15% of the scale from −10 to +10 in the figure.

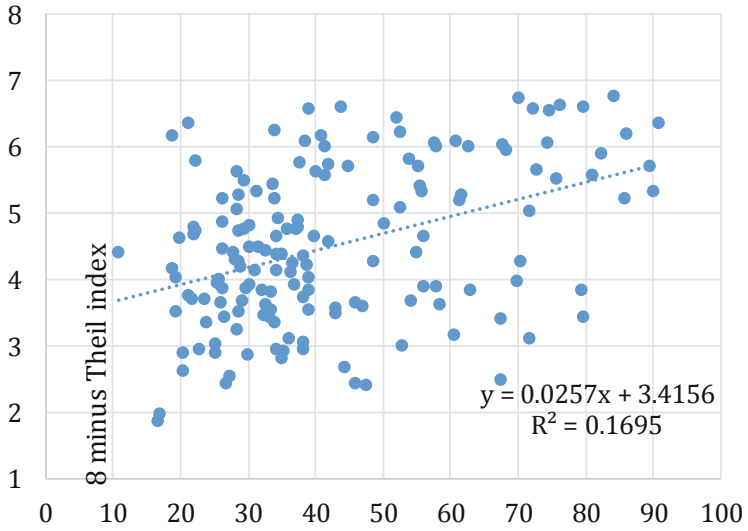

Fig. 5 Transparency index 2012–2016 and Theil index of export diversification 1962–2010 (159 countries). Note: Horizontal axis shows Transparency index

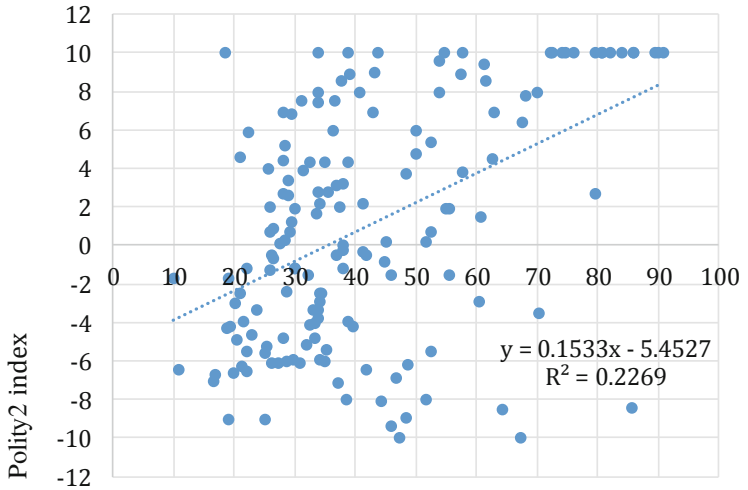

Fig. 6 Transparency index 2012–2016 and Polity2 index of democracy 1960–2012 (158 countries). Note: Horizontal axis shows Transparency index

In sum, Figs. 5 and 6 can be taken to give an indication that transparency stands in the way of political forces that pursue economic power concentration at the expense of diversified economic activity and pluralistic politics as suggested by Louis Brandeis.

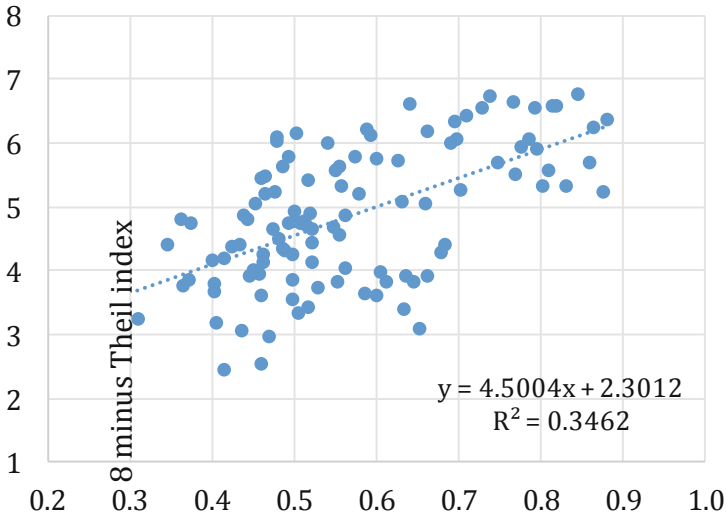

Fig. 7 Rule of law index 2012–2018 and Theil index of export diversification 1962–2010 (110 countries). Note: Horizontal axis shows Rule of law index

The rule of law, like transparency, is an integral part of social capital. Weak rule of law can undermine democracy and growth as implied by the United National General Assembly in its Declaration adopted on 24 September 2012: "... human rights, the rule of law and democracy are interlinked and mutually reinforcing and ... they belong to the universal and indivisible core values and principles of the United Nations."

A new statistical measure of the rule of law has recently become available thanks to the World Justice Project (2018). The measure is based on expert opinion as well as public opinion. It is a composite index, reflecting various aspects of the rule of law, but it covers at this stage only the years from 2012 to date.

Figures 7 and 8 show the relationship between each type of diversification and the rule of law. In both figures, there is a clear tendency for the rule of law to go along with diversification. The correlations are 0.59 and 0.60.

Trust is yet another part of social capital. Lack of trust can undermine social cohesion, democracy, and growth. Putnam (2000) documents many different signs of declining trust in the United States and so does the World Values Survey (2014) as do regular reports from various management consulting firms. Gallup's (2018) opinion polls have charted the erosion of public confidence in societal institutions in the United States and elsewhere. For example, the polls show that

- Trust in the U. S. Congress decreased from 42% in 1972 to 12% in 2017.
- Trust in the U. S. presidency decreased from 52% in 1975 to 32% in 2017.
- Trust in OECD banks decreased from 55% in 2007 to 46% in 2015.

Figures 9 and 10 show the relationship between economic and political diversification on the one hand and trust on the other. The trust index is taken from the

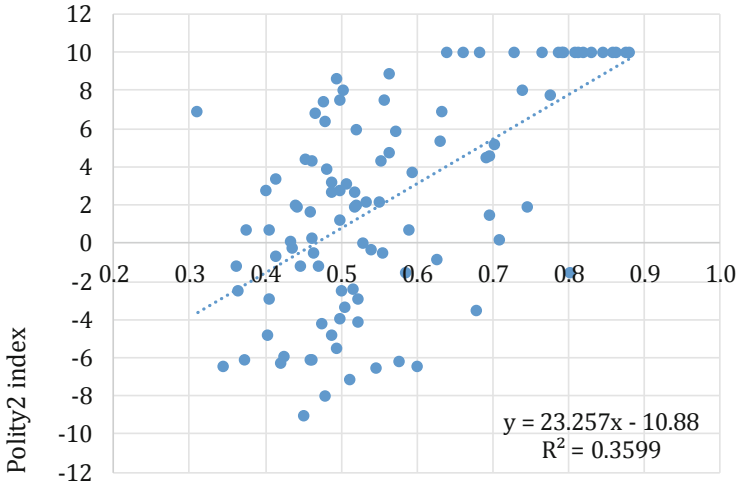

Fig. 8 Rule of law index 2012–2018 and Polity2 index of democracy 1960–2012 (151 countries). Note: Horizontal axis shows Rule of law index

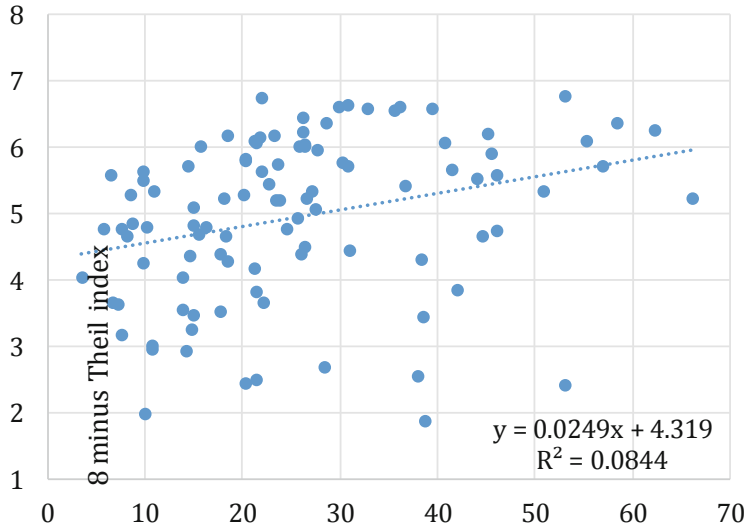

Fig. 9 Trust index 1981–2014 and Theil index of export diversification 1962–2010 (100 countries). Note: Horizontal axis shows Trust index

World Values Survey (2014) that has gauged various aspects of trust in six waves 1981–2014, both trust in institutions (see examples above) and interpersonal trust, which is assessed on the basis of how respondents report their interaction with other people. Some express the sentiment that "Most people can be trusted." Others are more apprehensive, figuring that they "Need to be very careful" in their dealings

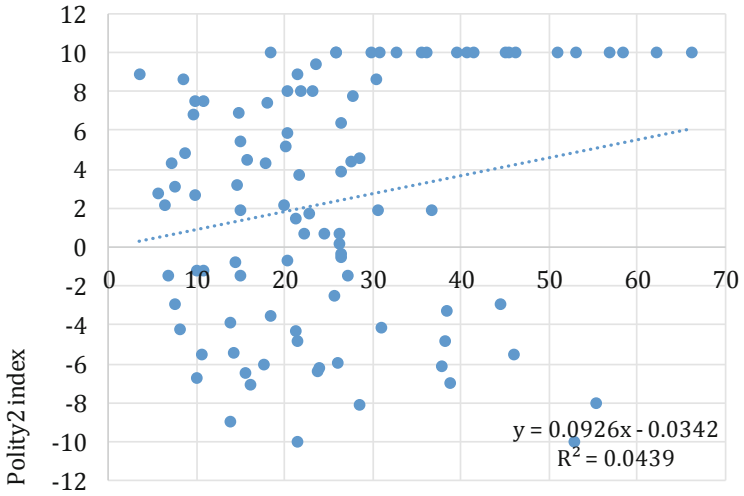

Fig. 10 Trust index 1981–2014 and Polity2 index of democracy 1960–2012 (98 countries). Note: Horizontal axis shows Trust index

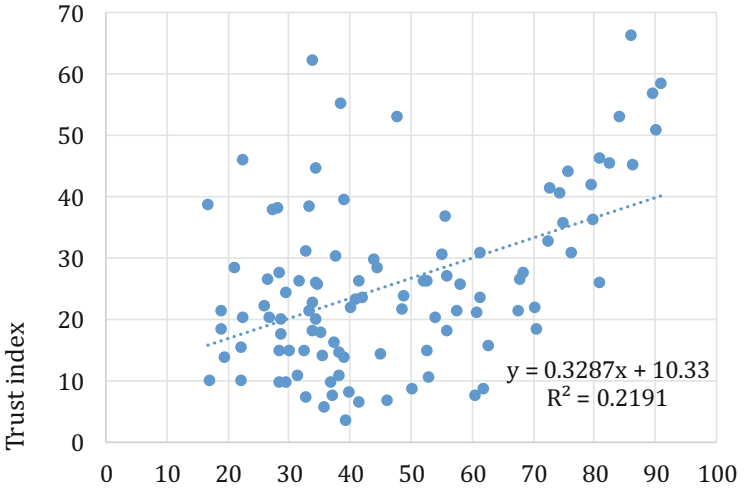

Fig. 11 Transparency index 2012–2016 and Trust index 1981–2014 (98 countries). Note: Horizontal axis shows Transparency index

with other people. Figures 9 and 10 show that while trust varies directly with both types of diversification, the correlations are weaker than before, 0.29 in Fig. 9 and 0.21 in Fig. 10. Even so, the slopes of both regression lines are statistically significant with t = 3.0 and t = 2.1 in Figs. 9 and 10, respectively.

Are transparency, trust, and the rule of law related? Fig. 11 suggests that trust inspires transparency, and vice versa. The cross-country correlation is 0.47.

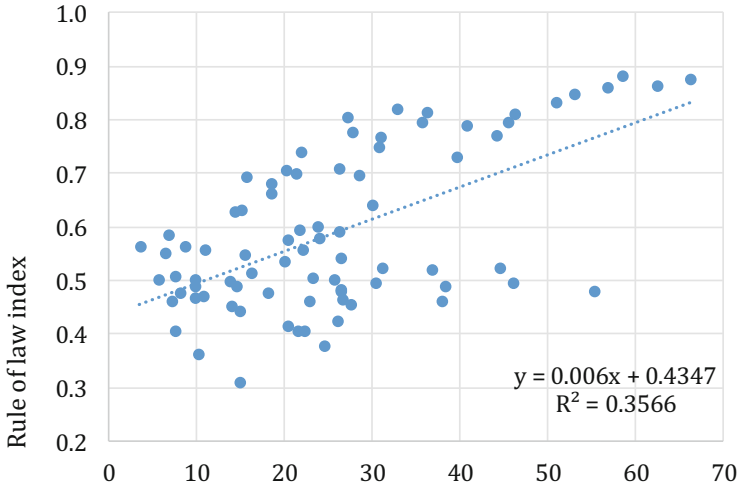

Fig. 12 Trust index 1981–2014 and Rule of law index 1981–2014 (80 countries). Note: Horizontal axis shows Trust index

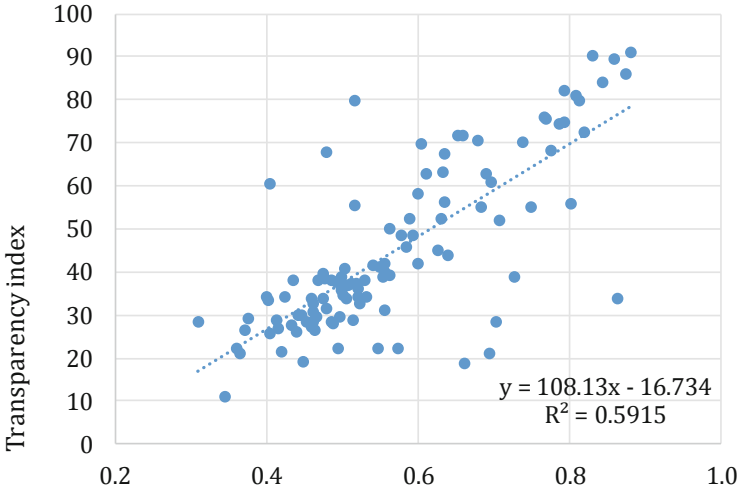

Fig. 13 Rule of law index 2012–2018 and Transparency index 2012–2016 (80 countries). Note: Horizontal axis shows Rule of law index

Figure 12 suggests a correlation of 0.60 between trust and the rule of law. A strong rule of law inspires trust. A lack of trust corrodes the rule of law. Similarly, Fig. 13 suggests a correlation of 0.77 between the rule of law and transparency.

To summarize, we have seen in this section that three important pillars of social capital—transparency, rule of law, and trust—vary directly with export diversification and democracy across countries as well as with one another. The next question is whether each of these three variables—transparency, rule of law, and trust—can

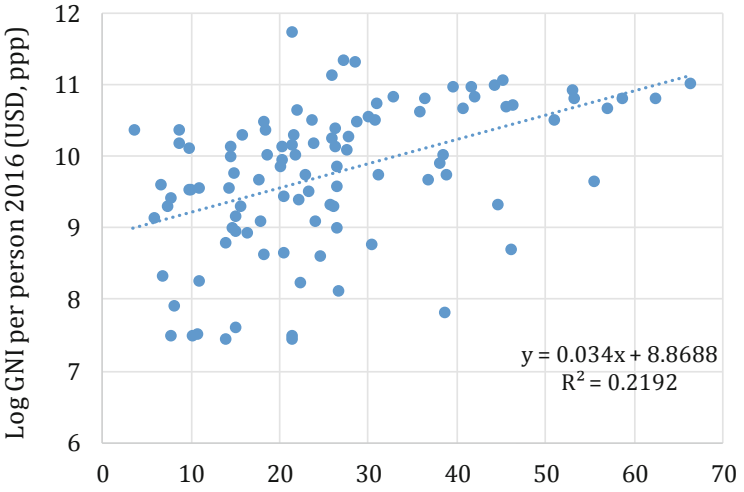

Fig. 14 Trust index 1981–2014 and log per capita GNI 2016 (102 countries). Note: Horizontal axis shows Trust index

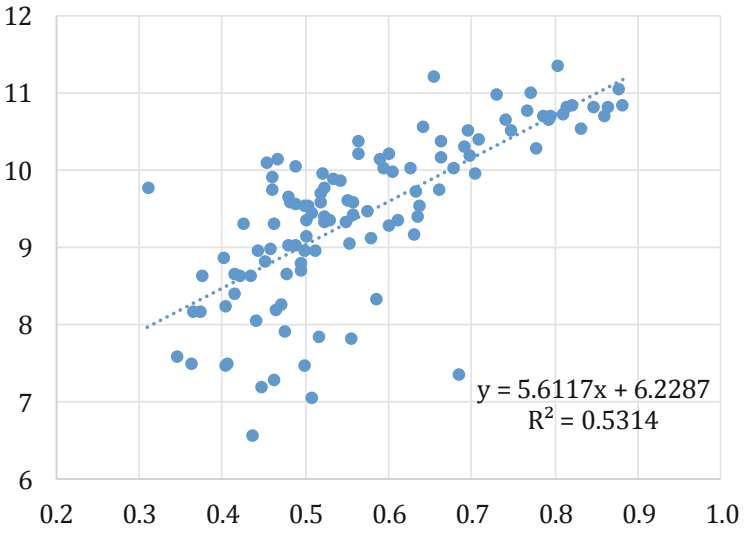

Fig. 15 Rule of law index 1981–2014 and log per capita GNI 2016 (111 countries). Note: Horizontal axis shows Rule of law index

be seen to vary systematically also with per capita GNI across countries. Figures 14, 15, and 16 suggest that they do. Figure 14 shows how trust and per capita income go together across countries. The correlation is 0.47. In Fig. 15, the correlation between the rule of law index and per capita income is 0.73. In Fig. 16, the correlation between transparency and per capita GNI is 0.60. Each of these pillars of social

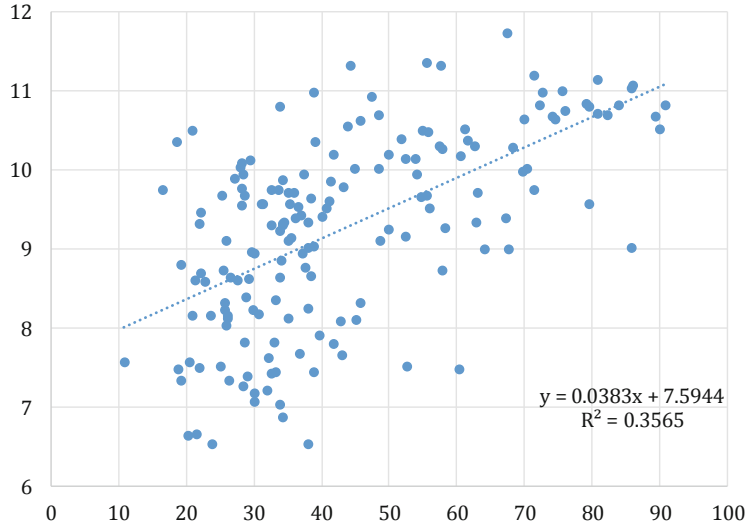

Fig. 16 Transparency index 1981–2014 and log per capita GNI 2016 (169 countries). Note: Horizontal axis shows Transparency index

capital varies strongly with per capita income across countries just as each of them was earlier seen to vary directly with export diversification and democracy. Thus far, everything hangs together.

In the next section we ask whether yet another pillar of social capital, equality, fits the general pattern described here.

4 From Equality to Democracy and Growth

To cite him again, U. S. Supreme Court Justice Louis Brandeis said: "We can have democracy in this country, or we can have great wealth concentrated in the hands of a few, but we can't have both." In his time, inequality was a matter of public debate as it has now become again, since about 1980. As mentioned in Section 1, the top 1% of households saw its share in total pre-tax income rise from 8% in 1980 to 12% in Europe and to 20% in United States in 2015 as in Russia. Further, the top 1% of households saw its share of total net personal wealth rise from 20% in 1980–1990 to 40% in 2015 in both Europe and the United States as in Russia (World Inequality Database 2018).[5] In Italy, the pre-tax share of the top 1% of households in national income rose from 6% in 1983 to 10% in 2008. Corresponding data on the distribution of wealth in Italy are not available. In France, for comparison, the pre-tax share of the top 1% of households in national income rose from 8% in 1983 to 12% in 2008

[5] See also Global Wealth Report (2017).

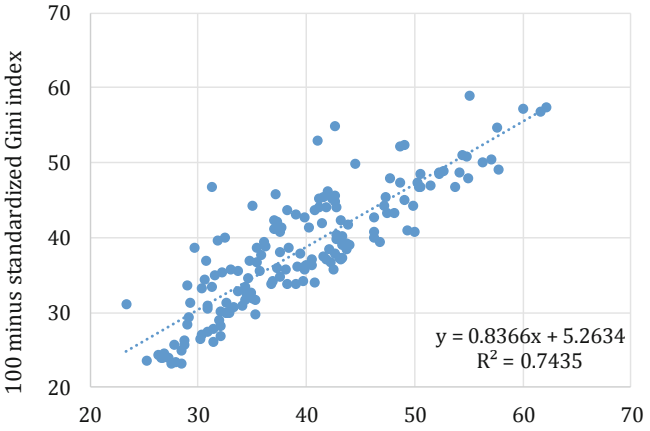

Fig. 17 Standardized Gini index 1962–2017 and World Bank Gini index 1979–2016 (163 countries). Note: The variable on the horizontal axis is 100 minus World Bank Gini index. Equality rises upward along both axes

while the pre-tax share of the top 1% of households in total net personal wealth rose from 16 to 22%. English-speaking countries (United States, United Kingdom, Canada, Australia, and Ireland) have seen a greater resurgence of inequality since 1980 than continental European countries and Japan. The English-speaking countries have experienced a return to the inequality of the 1920s, with the top 1% receiving 10% (Australia, Ireland) to 20% (United States) of national income. By contrast, European countries and Japan have seen a reduction in the share of national income accruing to the top 1% of households from 15 to 25% in the 1920s to anywhere from 6% (Denmark, the Netherlands) to 11% (France, Japan) in recent years. Zucman (2013, 2015) explains why personal wealth hidden in tax havens, estimated at 6% of world output in 2008, throws doubt on the accuracy of official estimates of economic inequality.

Be that as it may, but how do such shifts in economic inequality interact with other ingredients of social capital? We measure income inequality in two ways: by the World Bank Gini index and by the Gini index taken from The Standardized World Income Inequality Database (SWIID, see Solt 2016). The World Bank data cover the years 1979–2016 at most, usually much shorter periods, and they offer only a few scattered data points for each country. The SWIID is more comprehensive, contains more countries and years, 1962-2017, and has fewer gaps. The correlation between the two series is 0.86 (Fig. 17).

Let us begin by charting the cross-country relationship between trust as measured in Figs. 9, 10, 12, and 14 and equality in the distribution of income as measured in Fig. 17 where the variable shown on both axes is 100 minus one or the other of the two Gini indices. This is done to have equality rise along the axes. In Fig. 18, trust and equality are seen to go hand in hand from country to country. Equality inspires trust. Trust fosters equality. The correlation is 0.46. Essentially the same pattern emerges when Fig. 18 is reproduced by using the standardized SWIID Gini index is

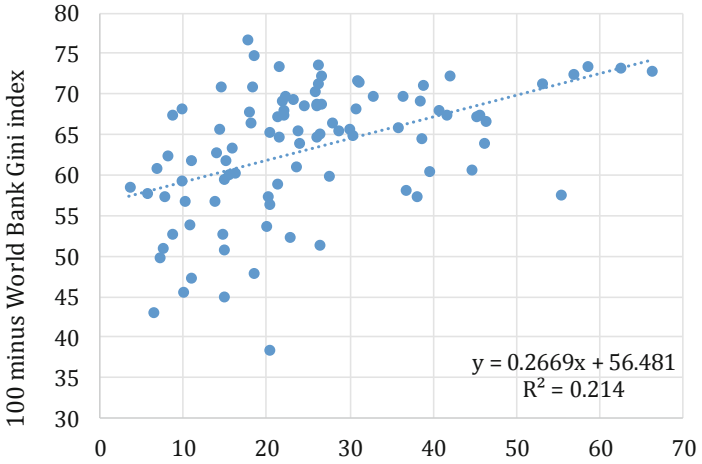

Fig. 18 Trust index 1981–2014 and World Bank Gini index of inequality 1979–2016 (95 countries). Note: Horizontal axis shows Trust index. Equality rises upward along vertical axis

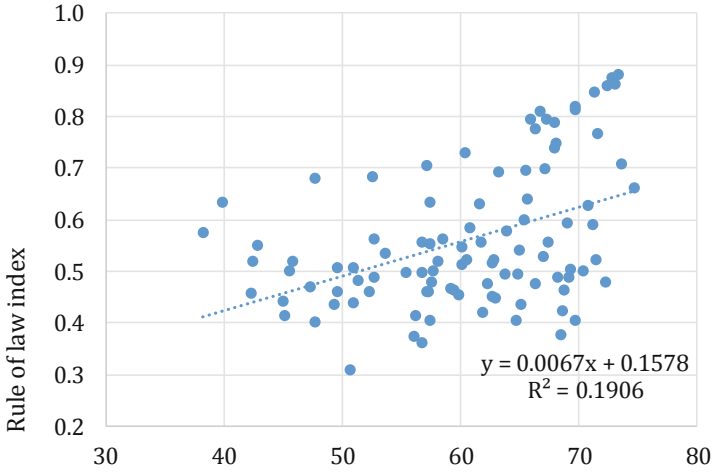

Fig. 19 World Bank Gini index 1979–2016 and Rule of law index 2012–2018 (100 countries). Note: Horizontal axes show 100 minus World Bank Gini. Equality rises from left to right

used in lieu of the World Bank Gini index for a larger sample of 103 countries (not shown).

How does equality interact with the rule of law and transparency? Figure 19 shows the relationship between the rule of law as measured in Figs. 7, 8, 12, 13, and 15 and equality as measured in Fig. 18. The correlation between the two is 0.44. Figure 20 shows the relationship between transparency as measured in Figs. 5, 6, 11, 13, and 16 and equality as measured in Figs. 18 and 19. Even if the correlation between the two, 0.24, is weak, the slope of the regression line in Fig. 20 is

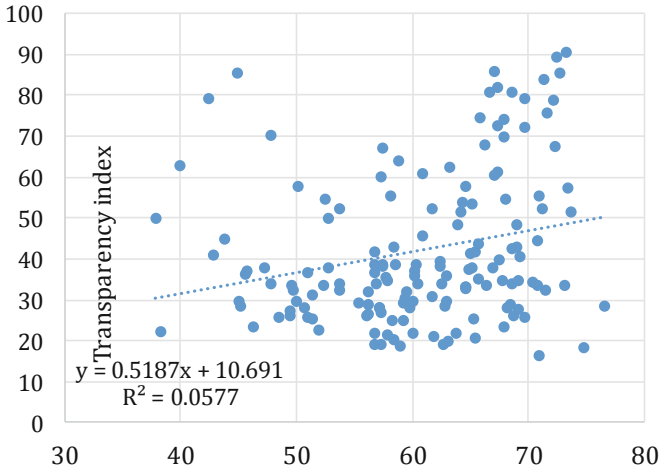

Fig. 20 World Bank Gini index 1979–2016 and Transparency index 2012–2016 (155 countries) Note: Horizontal axes show 100 minus World Bank Gini. Equality rises from left to right

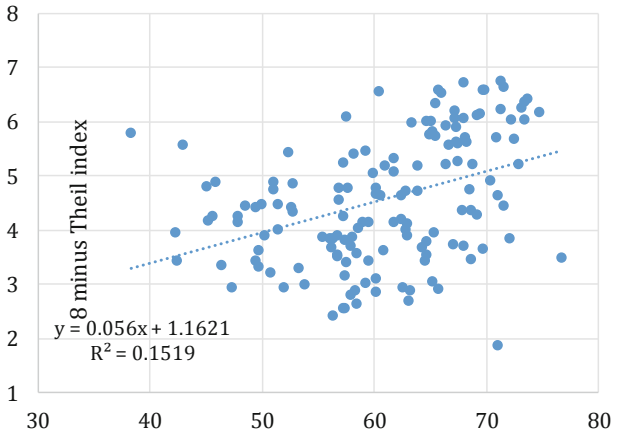

Fig. 21 World Bank Gini index 1979–2016 and Theil index of export diversification 1962–2010 (146 countries). Note: Horizontal axis shows 100 minus World Bank Gini index. Equality rises from left to right

statistically significant (t = 3.1). Inequality undermines the rule of law as well as transparency, encouraging lawlessness and corruption, and vice versa. Weak rule of law empowers economic and political elites to expropriate privileges and wealth with impunity.

Next we ask: How does equality interact with the two types of diversification? Figure 21 describes the cross-country relationship between equality and export diversification. Equality and economic diversification go together from country to country. The correlation between the two is 0.39. Using the standardized SWIID

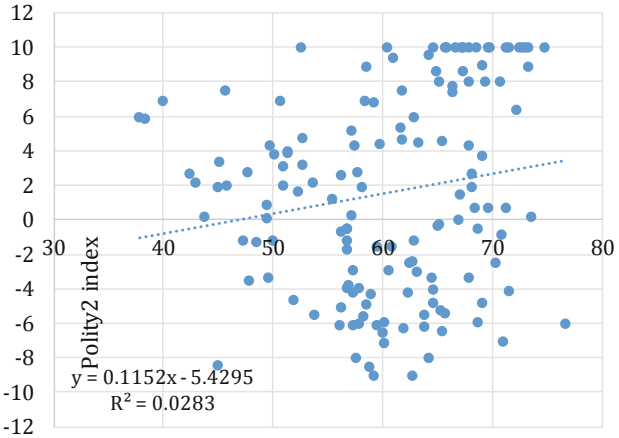

Fig. 22 World Bank Gini index 1979–2016 and Polity2 index of democracy 1960–2012 (146 countries). Note: Horizontal axis shows 100 minus World Bank Gini index. Equality rises from left to right

index rather than the World Bank Gini index increases the sample size from 146 to 159 but leaves the cross-sectional pattern observed essentially unchanged (not shown).

The relationship between equality and democracy is weaker as shown in Fig. 22 where the correlation between the two variables is 0.17. Using the standardized index rather than the World Bank index increases the sample size from 146 to 156 and the correlation from 0.17 to 0.22 but produces a similar pattern (not shown). Even if the correlation is weak, however, the slope of the regression line in Fig. 22 is statistically significant ($t = 2.0$). In sum, the general pattern remains quite clear, by and large, even if some transmission channels appear more open than others. Several different components of social capital tend to move together in ways that reinforce its uplifting effect on economic growth.

At last we ask a key question: Does equality vary directly with economic growth?—taken to be represented here as before by the end-of-period level of per capita GNI. Figure 23 shows a positive relationship between income equality along the horizontal axis and the log of per capita GNI as in Figs. 3, 4, and 14 along the vertical axis. The correlation between equality and income is 0.35. When the standardized SWIID Gini index is used in lieu of the World Bank Gini index the sample size increases from 161 to 180 and the correlation decreases from 0.35 to 0.30 but the cross-sectional pattern observed remains essentially the same (not shown). This pattern accords broadly with the results of Berg and Ostry (2017) and Berg et al. (2018).[6] Equality appears to be good for growth across the globe,

[6]See also Alesina and Rodrik (1994), Persson and Tabellini (1994), and Gylfason and Zoega (2003). For a survey of the literature on inequality in macroeconomics, see Rios-Rull and Quadrini (2015).

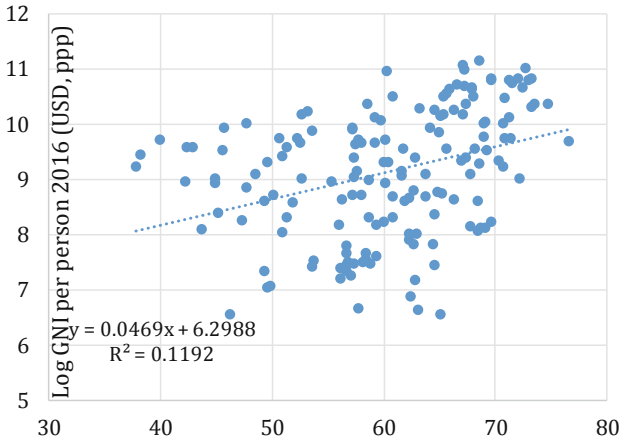

Fig. 23 World Bank Gini index 1979–2016 and log per capita GNI 2016 (161 countries). Note: Horizontal axis show 100 minus World Bank Gini index. Equality rises from left to right

partly perhaps because equality goes along with several other ingredients of social capital—democracy, transparency, trust, and the rule of law—that are also good for growth. Good things go together. Taken together, Figs. 22 and 23 suggest that inequality undermines democracy and growth.

5 Conclusion

Where do we stand at the end of this brief bird's-eye-type tour of international cross-sectional data on economic performance in conjunction with the interplay of different ingredients of social capital? We have seen statistically and economically significant bivariate cross-country relationships between the variables shown in Fig. 1, pair by pair. Specifically, we have seen that

- Economic diversification as measured by the IMF and political diversification through fortified democracy as measured by the Polity IV Project at the University of Maryland go together across countries (Fig. 2);
- Both economic and political diversification are positively correlated with per capita GNI across countries (Figs. 3 and 4);
- Transparency as measured by the Corruption Perceptions Index from Transparency International goes along with economic and political diversification (Figs. 5 and 6);
- The rule of law as assessed by the World Justice Project also goes along with economic and political diversification (Figs. 7 and 8);
- Trust as measured by the World Values Survey goes along with economic and political diversification (Figs. 9 and 10);

- Transparency, trust, and the rule of law are closely connected with one another from country to country (Figs. 11, 12, and 13) and also with per capita GNI across countries (Figs. 14, 15 and 16);
- Two different measures of income equality, one from the World Bank and the other from The Standardized World Income Inequality Database, are closely correlated and can be used interchangeably (Fig. 17);
- Income equality is positively correlated with trust, the rule of law, and transparency (Figs. 18, 19, and 20) and also with export diversification, democracy, and per capita GNI across countries (Figs. 21, 22, and 23).

In sum, various aspects of social capital—democracy, transparency, rule of law, trust, and equality—have been shown to vary systematically and significantly with one another and with economic diversification as well as with per capita income.

These relationships matter to the modern world. A burgeoning political science literature now describes the United States as an oligarchy that systematically disrespects the will of the people (Page and Gilens 2017). Many Europeans and others also worry about recent political developments within the European Union, especially in Hungary and Poland in view of their governments' advocacy of "illiberal democracy." The grim lessons from the early 20th century remind us that increased inequality has undermined democracy before (Snyder 2018). More could hardly be at stake. Reasonable equality in the distribution of income, wealth, and health, the rule of law, democracy, pluralism, transparency, trust, and economic welfare underpinned by rapid growth are not only desirable in themselves, each in its own right, but they also appear to hang together across countries through an intricate web of bivariate linkages. Weakening one risks weakening the others. All of these different aspects of social capital are good for growth, as are saving, investment, education, and health care while natural resources can cut both ways. When so many different determinants of growth are closely correlated, however, the usefulness of multiple cross-country growth regressions may suffer due to multicollinearity.

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Innovation and Africa: Much to Gain, Nothing to Lose!

Domenico Fanizza and Amadou Boly

Abstract This paper provides quantitative evidence suggesting the current wave of technological innovation provides major opportunities for transforming the continent economy. The absence of strong incumbents and an increasingly young and technology-prone population seem factors that can facilitate the diffusion of innovation, based on the experience of mobile telephony—one of the few innovations for which we have data that we can use to build a cross-country panel. We use the Howitt-Aghion's model of creative destruction as an analytical framework for our estimates. Based on our estimates we simulate innovation paths for Africa and OECD for the next 20 years. Finally, we use employment simulations to show that Africa's cannot deal with its huge demographic by relying on industry-led growth only. Innovation can generate the productivity improvements needed to generate jobs in agriculture, services, as well as industry.

1 Introduction

Africa faces a formidable unemployment challenge. Its demographic profile implies a major surge in the share of working-age population in the next two decades, while overall population will continue to grow rapidly. The issue on whether the continent's current economic growth trends will be sufficient to absorb at least a significant portion of the projected labor supply increase has been amply discussed, with an overwhelming negative answer.[1] This paper claims that innovation could

[1]See for instance Louise Fox, Alun Thomas, and Clairy Haines, "Structural Transformation in Employment and Productivity: What Can Africa Hope For?" (2017).

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constitute the key to exploiting the continent's demographic profile as an opportunity for economic transformation. In particular, we aim at conveying three messages:

- The new wave of technological innovation, the so-called Fourth Industrial Revolution (FIR), provides a major opportunity for transforming the continent and generating the needed jobs, without necessarily following the structural change pattern experienced in South East Asia and Europe.
- We provide quantitative evidence to support the idea that the continent may be in a good position to exploit innovation-related opportunities thanks to: (a) relatively small and weak "incumbent" sectors; and (b) its young and therefore technological-prone population. However, in order to exploit these relative advantages, the continent needs to make important efforts to develop its human capital and the skills that can favor the adoption of new technologies. Moreover, policies should resist the temptation to protect sectors that could come under threat by the diffusion of innovation.
- Show that Africa would not succeed to absorb a significant portion of the projected increase in its labor supply, even if the employment in industry were to grow at an average rate twice as high as that experienced by the Asian Tigers during the last 25 years. Thus, Africa cannot afford missing the opportunities offered by the FIR, and should embrace, not resist, the ongoing wave of technological innovation. Relying on old-fashioned industrialization will nor deliver the needed jobs, even under most optimistic assumptions on industrial growth.

In the remaining of the paper, we will first discuss the main features of the innovations that constitute the FIR and how it has affected Africa so far. Second, we briefly illustrate the analytical model that we use to provide quantitative evidence on the prospects for innovation diffusion in Africa. Third, we discuss the evidence from a cross-country panel data set and we use the estimates parameters of the model to simulate the diffusion path of new technologies in Africa and in the OECD countries. Fourth, we show the results from an employment simulation that suggests industrial development cannot be the main driver of the large employment growth needed to match the projected increases in labor supply. Finally, we try to draw a few policy implications from the analysis and quantitative evidence we present.

2 Innovation and the New Global Economy

There has been much talk about the Fourth Industrial Revolution (FIR) and its impact on the global economy. The basic idea is that the new wave of technological innovation would not only shift the production-possibility frontier through

substantial gains in total factor productivity, but would also radically alter consumption, communication, and social organization patterns.[2]

It is clear that the new wave of innovation has a huge potential for improving productivity and living conditions. However, these benefits are unlikely to materialize without causing major disruptions. Vast portions of the existing productive capacity will become obsolete and many assets will become stranded. For instance, driverless cars and their sharing are likely to make individual car ownership obsolete, the way in which typewriters disappeared quickly in the early 1980s, or the production of cameras and fax machines did in the last decade. Similar changes are likely to take place in other key sectors, such as energy with the demise of traditional grids in favor of mini generation-consumption grids, and the financial sector with the demise of traditional banking as the result of the adoption of block-chain technology that can eliminate information asymmetries.

The process is unlikely to be smooth because of its very nature and dimensions. It is difficult to imagine that the automotive industry will reconvert to the new consumption and production models in its totality. There will be winners and losers. There will be a major impact on employment levels and on the skills that will be required. Many workers will not be able to re-tool themselves toward the skills required by the new production model.

Clearly, the adoption of new technologies will face opposition. In fact, this has already been the case for driverless cars on security grounds, which is difficult to make sense of, if one thinks of how unsecure traditional cars are. The diffusion of Uber or Uber-like services has encountered major hurdles in France, Italy, and most recently, Egypt, because of pressures from taxi drivers, who have managed to influence regulations in their favor.

These oppositions have the potential to slow down the pace of innovation. Their strength and their likelihood to be effective in slowing down the innovation will crucially depend on:

- How large the sector that comes under threat is relative to a country's economy.
- How young is a country's workforce. The younger the easier to adapt to the new skill requirements. Old dogs do not learn new tricks!

3 Innovation and Africa

The notion that Africa is technological prone has been already discussed in the literature, but always with anecdotic evidence.[3]

The mobile-banking revolution, in particular the fact that Africa appears the most mobile-banked continent in the world, seems to be behind this idea. There are no

[2] See "The Fourth Industrial Revolution," by Klaus Schwab (2016).

[3] See for instance the WEF report, "The Future of Jobs and Skills in Africa: Preparing the Region for the Fourth Industrial Revolution" (2017).

doubts mobile banking is transforming the continent, by connecting previously excluded Africans to the formal financial sector and making a difference in providing opportunities for market participation even to people in most remote areas of the continent.

The continent is also seeing the onset and rapid expansion of, eHealth, edTech, agriTech, three solutions specifically adapted to the local needs related to some of the greatest challenges Africa faces: health, education and food security.

Drone technology already helps to deliver medical goods and constitute a possible solution to the medical infrastructure deficiency, for instance, in Rwanda. This technology already helps to maintain portions of the electric-power grid that come under threat from the tropical vegetation in Cote d'Ivoire.

Well-structured web-based classes make basic education now affordable not only in the urban slums but also in the remote areas of Kenya.

On-line platforms provide now customized advice on planting patterns and timing to many farmers in Nigeria. The map below provides a sense of the extent to which innovation has spread around the continent. New technologies, such as block chain, in addition to limit information asymmetries in financial markets, can have a favorable impact on governance and corruption. Their use in managing public resources would greatly increase accountability by virtually making transparent and openly accessible all government transactions.

Even plain-vanilla digitalization of payments businesses and people make to government has proved to have a favorable impact on reducing the scope for corruption. For instance in Tanzania it has already:

- Empowered its tourism sector by **reducing economic leakage from cash payments, such as conservation-park entry fees, by over 40 percent,** supporting investment and employment.
- Cut bureaucratic inefficiencies, including **reducing import customs clearance times from nine days to less than one day.**
- Increased transparency between citizens and governments in **tax payments, by providing electronic proof of payments and protecting people against fraud.**

The literature appears to explain the somewhat unexpected "blossoming" of creative applications of new-technologies in part of the continent with a more flexible regulatory environment than in industrial countries, where for instance the use of drones for delivering goods or gathering economic-relevant data is hampered by strict security requirements.

However, to our knowledge, the literature does not provide quantitative evidence in support of this hypothesis. This paper makes a step in this direction by providing both an analytical framework and empirical evidence on the issue. However, we need a caveat. By no means, we want to suggest the picture for the continent is uniform and that innovation has blossomed and spread evenly everywhere. As the map shows,[4] there are encouraging signs in a few countries, but there are many

[4]Desjardins J (2017).

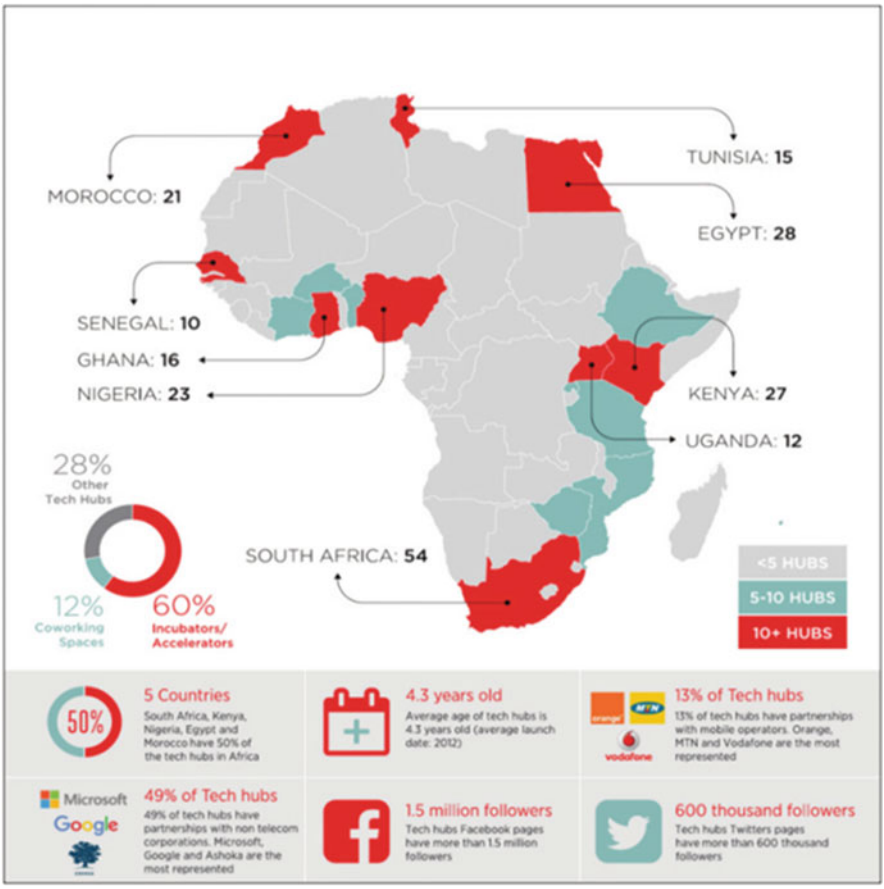

Fig. 1 Africa: 314 Active∗ Tech Hubs in 93 Cities in 42 Countries. Source: https://www.visualcapitalist.com/africa-exploding-tech-startup-ecosystem/

countries that lag behind and do not appear quite technology prone (Fig. 1). In what follows, we will try to provide quantitative evidence to assess the opportunities that innovation offers to Africa and the challenges it faces in order to seize them.

4 The Modeling Strategy

We can think of the FIR as propelled by Information and Communication Technology (ICT)—the archetypal General Purpose Technology (GPT)—that applies to a broad range of productive processes. In particular, ICT has proved: (a) to be pervasive with the potential to change all the sectors of the economy; (b) to take

time to exploit its potential; and (c) to span new products and processes, i.e. it generates a broad range of new productive innovations.

Following the Aghion-Howitt model,[5] we can think of a two-stage process. In the first stage (Phase I), the new GPT, here the ICT, becomes exogenously available, but enterprises need to find ways to exploit it by diverting resources to research. The second phase (Phase II) is when the new product-specific innovation becomes available because of the research effort that took place in "Phase I". The literature characterizes the "Phase I" as "*creative destruction*" because it results in an aggregate output contraction. Phase II, instead, is a boom-driven period that lasts until a new superior GPT arrives, and a slump occurs again.

To understand both the opportunities and the challenges the FIR presents to Africa we introduce in the model institutional factors that can affect the research effort in the first Phase and therefore the rate at which the GPT is applied to production. In particular, we assume the rate of diffusion/application of the GPT is μZ_j where μ is a constant and z the "research effort" is:

$$z_j = \alpha + \beta\ \mathrm{Man} + \gamma\ \mathrm{Dem} + \delta\ \mathrm{Edu} + \varepsilon,$$

Where Man, is a proxy of the size of incumbents (e.g. the share of traditional manufacturing in GDP); Dem is the share of young population over the total; Edu is a proxy of how skilled the work force is. The assumption here is that the larger the incumbent sector, the stronger the opposition toward "destructive innovations" will be, through for instance heavy handed regulations and red tape. The paper provides evidence on this relation and discusses Africa's innovation prospects in its light.

5 Empirical Evidence

To provide evidence we rely on a cross-country panel-data set that includes both industrial, emerging, and developing countries. We use the rate of diffusion of mobile-telephone connections as an example of innovation and therefore as our dependent variable. On the RHS we use: (a) the market share of existing telephone land lines, as a measure of the incumbent production; (b) the percentage of population between 25 and 35 over the total as a measure of youth population; (c) and the portion of the work force with a secondary-level school degree as a proxy of human capital. The table in Appendix II summarizes our preliminary results. There are a number of issues with the proposed approach:

First, our three proposed variable can help explains the diffusion of mobile technology only after we control for the impact of per-capita GDP that of course

[5] See Philippe Aghion, Ufuk Akcigit and Peter Howitt, "What do we Learn From Schumpeterian Growth Theory?" (2013), and Aghion and Howitt, "The Economics of Growth," Chapter 9 (2008). See Annex A for a summary description of the model.

plays a major role to explain changes in mobile telephony diffusion both over time and across countries. Therefore, we need to control for this income effect.

Second, we should adjust the impact of the age profile of the population to the income effect. In fact, the young tend to be poorer than the old are, particularly in developing and emerging countries. For this reason, we introduce an interaction effect between age structure and per-capita GDP that allows for non-linearity in the relation.

Third, we need to introduce an appropriate measure of the incumbent sector. We use the market share of land-lines, which corrects for different sizes of countries and markets. Moreover, we cannot assume a contemporary relation between incumbent size and innovation, as diffusion takes time. We use therefore a 5-year moving average of market shares.

The table below provides our econometric results, which, largely, confirm our hypotheses. In particular, **the parameter estimates for Africa are significant and all with signs consistent with our expectations,** with the population's age structure positive when interacted with that per-capita income. The parameter estimates for the whole cross-country panel are significant but go in the expected direction only for the land-line market share and per-capita GDP. Instead, they go contrary to our expectations for: (a) our measure of human capital (secondary education); and (b) population's age structure.

However, if one looks at the results for the sub-sets of the panel it becomes clear that the estimates for OECD countries drive the whole panel results for these two variables:

- As regards human capital, OECD countries have all high levels of secondary education that vary little both across countries and over time. Thus, no surprise, that secondary education has no impact on mobile phone diffusion.
- As regards the population's age structure, OECD countries have generally experienced a decline in the portion of young people over total population. Whereas, mobile-telephone subscription have continued to increase, which is what the negative parameter estimate picks up (Table 1).

6 A Look at the Future

Based on our econometric evidence, we have argued that Africa is in good position to take advantage of the new wave of technological innovation and the FIR. Opposition to the diffusion of innovation is likely to be weaker than elsewhere in the global economy, because: (a) the threatened sectors, such as traditional

Table 1 Coefficient estimates and t. statistics

Mobile penetration	Africa	East_Asia	Latin America	South Asia	OECD	All
Secondary education	0.924***	−0.268	0.0722	1.087***	−0.244***	−0.0539
	(0.118)	(0.179)	(0.210)	(0.275)	(0.0548)	(0.0615)
Fixed phone weight 5 yrs avg	−0.198***	−0.912***	−0.786***	−0.172**	−1.167***	−0.847***
	(0.0371)	(0.0724)	(0.0933)	(0.0698)	(0.0419)	(0.0266)
log pc gdp	1.902	59.08***	145.2***	−56.11	107.7***	59.69***
	(11.15)	(17.47)	(39.88)	(37.48)	(14.29)	(5.844)
young2035	−17.65***	6.703	30.97**	−27.09**	24.97***	2.112
	(3.016)	(5.656)	(13.01)	(11.52)	(5.749)	(1.710)
log pc gdp ## young2035	2.459***	−1.234**	−3.678**	4.079**	−2.803***	−0.508***
	(0.405)	(0.608)	(1.549)	(1.626)	(0.555)	(0.181)
Const	−30.31	−308.6*	−1155.6***	336.4	−877.2***	−378.8***
	(81.16)	(160.8)	(343.0)	(267.4)	(149.4)	(54.58)
R-sq	0.679	0.678	0.656	0.804	0.929	0.712
N	549	346	353	80	704	2382

manufacturing, are substantially smaller than, for instance, in Europe[6]; and (b) the demographic profile of the continent is such that its work force, already the youngest in the world, is going to grow even younger.

We illustrate the implications of these results for the future of innovation in Africa vis-à-vis the OECD countries, through a simple simulation. Based on our full-sample parameter estimates and assumptions on the future path of our independent variables, we build a path for the diffusion rate of innovation during the next (20) years.[7] The simulation reflects a strong assumption. We assume that we can use the inference we have drawn from the diffusion of mobile technology to predict the future path of other innovations. The results are striking. We acknowledge they need to be taken with extreme caution. However, if the experience for diffusion of mobile technology can tell us something on the pace of diffusion of innovation over the next 20 years, our simulations suggest that Africa is better placed than the OECD countries! (Figs. 2 and 3)

[6]Fox and Thomas estimate that formal employment constitutes on average in SSA only 15% of total employment. Employment in manufacturing is likely to be even smaller because their figure includes also government employment.

[7]We call the dependent variable the rate of diffusion of a generic innovation and we compute it for the next 25 years as a function of our variables and estimated parameters.

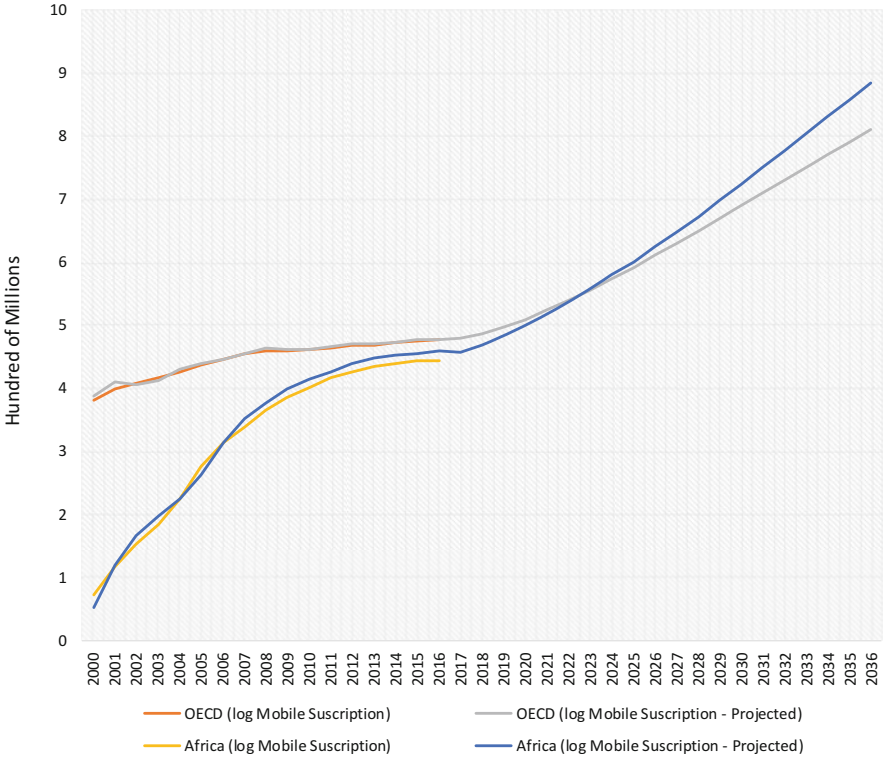

Fig. 2 Projection of mobile suscription (from 2017 onward)

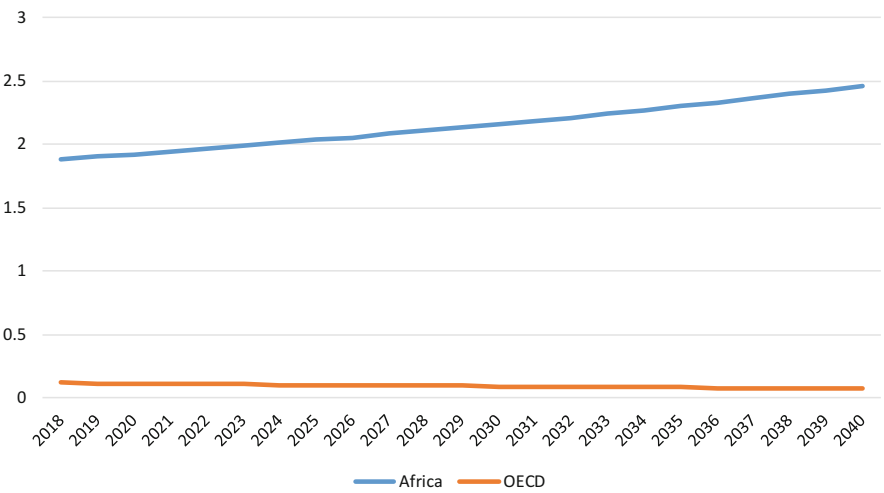

Fig. 3 Change in penetration rate

7 Can Africa Rely on Traditional Industry?

To illustrate how the "traditional" pattern of structural change would not succeed to address Africa's employment demand we use a simple simulation. We call "traditional" the pattern that sees economic development driven by productivity gains in industry. These gains attract labor supply from agriculture boosting industry employment, which in turn generates productivity improvements in agriculture, which then allow further shifts in the work force from agriculture to industry. The presence of, however, a productivity gap in favor of industry vis-a-vis agriculture (or services, for that matter) would allow sustaining a virtuous circle that provides labor supply to industry as needed, forcing productivity improvements in agriculture as a by-product. This mechanism would allow transforming developing economies along the lines experienced by Europe and South East Asia. This is the old basic Lewis model,[8] which has been proposed as a viable path for Africa by both J. Lin and D. Rodrick.[9]

We have built two scenarios based on the China's experience. The first assumes a 6% annual growth in industrial employment, which is what China experienced during the last 15 years. The second assumes twice as much, 12% per year.

Under the first scenario, it is clear the gap between overall labor supply would actually broaden over time. However, even under the quite optimistic second scenario, growth in industrial employment would not keep the pace of labor supply, still raising the gap between 2040 and 2016. These dynamics would reflect the base effect, because industrial employment levels in Africa are in fact quite low, whereas working-age population grows not only quickly, but also from a high initial level.

The message from this simulation is that the continent cannot make it if it follows the Lewis-type bluebook for industry-led development. Of course, productivity improvements in industry are to be more than welcome, but the point is that the continent cannot deal with its employment challenge without expanding employment in services and agriculture. Economy-wide productivity improvements are key! These need to happen in services, agriculture, and industry as well. Innovation provides an opportunity to achieve the needed economy-wide productivity improvements (Fig. 4).

8 Conclusions

This paper has provided evidence that make us believe that the current wave of technological innovation provides major opportunities for transforming the continent's economy. The absence of strong incumbents and an increasingly young and

[8] Lewis, W. A. (1954).

[9] See for instance J. Lin and A. Goldstein, "Achieving an African Industrial Revolution" (2017); and D. Rodrick, "Growth without Industrialization?" (2017).

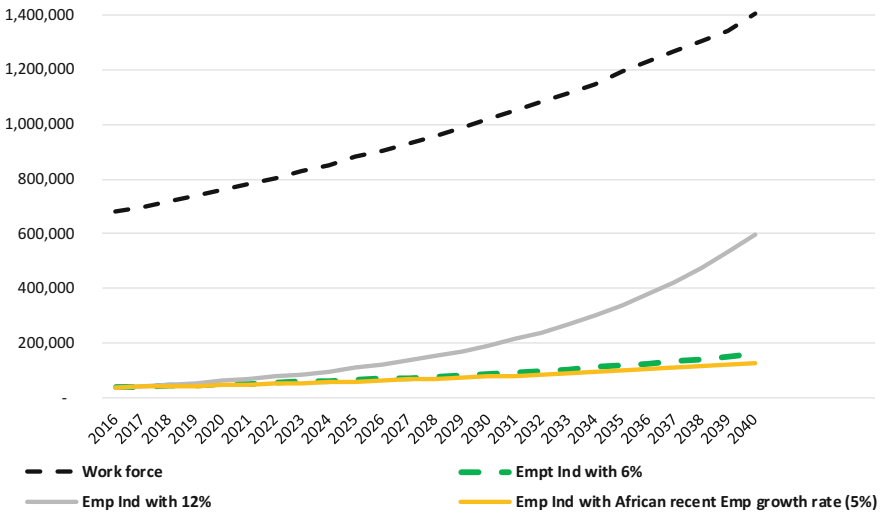

Fig. 4 Work force and employment

technology-prone population seem factors that can facilitate the diffusion of innovation, based on the experience of mobile telephony, one of the few innovations for which we dispose data that can used for building a cross-country panel. Of course, we need to provide caveats. The ongoing wave of innovation may differ from mobile telephony, but unfortunately, by definition data on new technologies are not readily available. Perhaps, microeconomic studies could provide additional insights.

We have also argued that Africa has virtually no alternative to embrace the new wave of technological innovations enthusiastically. Business as usual, even under the most optimistic assumptions would not help to reduce the expected yawning gap between labor supply and demand in the continent. Our simulations suggest industry cannot create the necessary jobs by itself, agriculture and services need to play both major roles. This conclusion has implications for policy. First, governments should refrain from protecting economic activities that come under threat from innovation. Second, policies should aim at creating an enabling environment for technological innovation, and avoiding channeling resources toward the pursuit of industrial dreams. The fact that advanced countries have gone through years of heavy industrialization does not imply Africa should go through the same experience. There is no bluebook for economic development! In fact, the continent could use new technologies to avoid both the social and environmental costs industrial based growth.

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Annex 1

The Basic Model

Aghion and Howitt assume that the economy is populated by a continuous mass, L, of infinitely lived individuals with linear preferences, who discount the future at rate ρ. Each individual is endowed with one unit of labor per unit of time, which she can allocate between production and research: in equilibrium, individuals are indifferent between these two activities.

There is a final good, which is also the numeraire. The final good at time t is produced competitively using an intermediate input, namely:

$$Y_t = A_t y_t^{\alpha}$$

where α is between zero and one, y_t is the amount of intermediate good currently used in the production of the final good, and A_t is the productivity (or quality) of the currently used intermediate input. The intermediate good y_t is in turn produced one for one with labor: that is, one unit flow of labor currently used in manufacturing the intermediate input, produces one unit of intermediate input of frontier quality. Thus, y_t denotes both, the current production of intermediate input and the flow amount of labor currently employed in producing the intermediate good. Growth in this model results from innovations that improve the quality of the intermediate input used in the production of the final good. More formally, if the previous state-of-the-arte intermediate good was of quality A_t; then a new innovation will introduce a new intermediate input of quality γA_t; where $\gamma > 1$. This immediately implies that growth will involve creative disruption, in the sense that Bertrand competition will allow the new innovator to drive the firm producing intermediate good of quality A out of the market, since at the same labor cost the innovator produces a better good than that of incumbent firm.

If z_t units of labor are currently used in R&D, then a new innovation arrives during the current unit of time at the Poisson rate λz_t. Henceforth we will drop the time index t, when it causes no confusion.

Two basic equations describe the growth process. The first is the labor market clearing equation:

$$L = y + z$$

reflecting the fact that the total of labor supply during any unit of time is fully absorbed between production and R&D activities (i.e. by the demands for manufacturing and R&D labor).

The second equation reflects individuals' indifference in equilibrium between engaging in R&D or working in the intermediate good sector. We call it the research arbitrage equation:

$$w_k = \Lambda V_{k+1}$$

Where w_k denotes the current wage rate conditional on their having already been k innovations from time 0 until current time t. And V_{k+1} denotes the net present value of innovating the next period (k+1) innovator, in other words the value function:

$$\rho V_{k+1} = \Lambda \pi_{k+1} - \Lambda z V_{k+1}$$

This equation states the annuity value of a new innovation (i.e. its flow value during a unit of time) is equal to the current profit flow k+1 minus the expected capital loss $\Lambda z V_{k+1}$ due to creative destruction, i.e. to the possible replacement by a subsequent innovator.

General Purpose Technology (GPT)

We assume now that the discovery of a new generation of intermediate goods comes in two stages. Firs, at time t a new GPT must come, and then an intermediate good must be invented that uses that GPT. Neither can come before the other. One needs to see the GPT before knowing what sort of good will use it, and people need to see the previous GPT in action before anyone can think of a new one. For simplicity, we assume that no one directs R&D toward the discovery of a new GPT. Instead, the discovery arrives as a serendipitous by-product of learning by doing with the previous one (Fig. 5).

The economy will pass through a sequence of cycles, each having two phases, as indicated in Fig. 5. GPT_i arrives at time Ti. At that time, the economy enters phase 1 of the ith cycle. During phase 1, the amount z of labor is devoted to research. Phase 2 begins at time $T_{i+\Delta i}$ when this research discovers an intermediate good to implement GPT_i. During phase 2 all labor goes to direct production until GPT_{i+1} arrives, at which time the next cycle begins. Over the cycle, output is equal to A_{i-1} F(L − z)

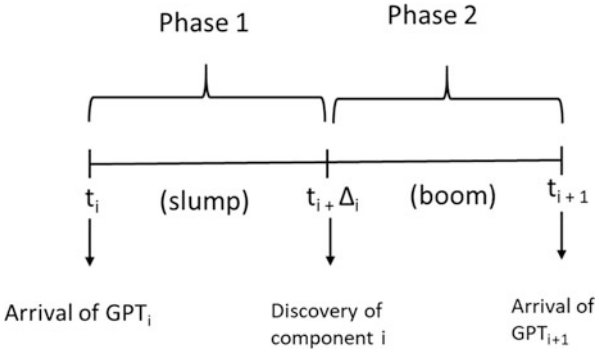

Fig. 5 Phases of GPT cycles

during phase 1 and to A_i F(L) during phase 2. Thus, the drawing of labor out of manufacturing and into research causes output to fall each time a GPT is discovered, by an amount equal to A_{i-1}[F (L) − F (L z)]. A steady-state equilibrium is one in which people choose to do the same amount of research each time the economy is in phase 1; that is, z is constant from one GPT to the next.

We can solve for the equilibrium value of z using a research-arbitrage equation and a labor-market-equilibrium condition. Let ωj be the (productivity-adjusted) wage, and vj the expected (productivity-adjusted) present value of the incumbent (intermediate good) producer when the economy is in phase j ϵ {1; 2}. In a steady state these productivity-adjusted variables will all be independent of which GPT is currently in use.

Because research is conducted in phase 1, but pays off when the economy enters into phase 2, with a productivity parameter raised by the factor, γ, the following research-arbitrage condition must hold in order for there to be a positive level of research in the economy:

$$\omega_1 = \lambda\, \gamma\, v_2$$

Suppose that once we are in phase 2, the new GPT is delivered by a Poisson process with constant arrival rate μ. Then the value v_2 is determined by the Bellman equation:

$$\rho v_2 = \pi(\omega_2) + \mu\, z\, [v_1 - v_2]:$$

By analogous reasoning, we have:

$$\rho v_1 = \pi(\omega_1) - \lambda\, z\, v_1:$$

Combining the above three equations, yields the research arbitrage equation:

$$\omega 1 = \frac{\lambda\gamma}{\rho + \mu} \left\{ \pi(\omega 2) + \frac{\mu\, \pi(\omega 1)}{\rho + \lambda Z} \right\}$$

Because no one does research in phase 2, we know that the value of ω2 is determined independently of research, by the market-clearing condition:

$$L = y(\omega_2):$$

Thus we can take this value as given and regard the preceding research-arbitrage condition as determining ω1 as a function of z. The value of z is then determined by the labor-market equation:

$$L - z = y(\omega_1)$$

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Analysing the Redistributive Effects of the Italian PIT with Tax Files

Paolo Di Caro

Abstract This chapter studies the redistributive effects of the Italian personal income tax by using novel individual tax returns. The application of a decomposition of the reranking term shows that the set of personal income tax instruments can have different effects on vertical and horizontal equity. The distributional analysis is conducted for Italy as a whole and for the twenty Italian regions in order to add a new dimension of inquiry to the study of regional income disparities in this country. Results for the two main tax expenditures for the owner-occupied house, the deduction for the main residence and the mortgage interest tax credit, throw new light into the total redistributive consequences of such tax expenditures in Italy. It is found that, the mortgage interest tax credit, a tax measure often criticised at both national and international level, has a small, positive effect on vertical equity, but it has negative consequences on horizontal equity. A discussion of the pros and cons of using administrative tax data for studying redistribution is also provided

Keywords Redistribution · Administrative data · Personal income tax · Horizontal equity

1 Introduction

Three main stylized facts are generally associated to personal income taxation. First, personal income taxes represent a relevant source of public revenues. In 2017, data from the Organisation for Economic Development and Cooperation (OECD), the share of personal income tax (PIT) revenues on the gross domestic product (GDP) counted for about 8.5% in the OECD countries and about 11% in Italy (OECD 2018). Italy ranked among the first five countries with major income sources from personal income taxation in the European Union. Second, rising income inequalities between and within countries are seen as by-product of the inability of current

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tax-benefit systems, where the PIT plays a crucial role, to deal with real-world income disparities (Cowell and Van Kerm 2015). The progressive narrowing of the personal income tax base, which does not include most of financial and property incomes that are subject to proportional tax treatment, is often considered as one of the main weaknesses of personal income taxation (Gordon and Kopczuk 2014). Third, personal income taxation is perceived as unequal and inefficient given the large number of tax expenditures, that is, preferential tax treatments of particular individuals and groups that are exempt from ordinary taxation (Poterba 2011). As for Italy, tax expenditures are quite large, by ranging between 5.5% (MEF 2017) and 6.5% (Tyson 2014) of GDP; and, in this country, the number of PIT's tax expenditures is the highest in comparison to other taxes (Andrle et al. 2018). It is not surprising, therefore, that the reform of personal income taxation is debated in many countries and it has progressively attracted consensus among the citizens. One of the most debated aspects during the last Italian electoral campaign was a substantial reform of the Italian PIT with two objectives: the reduction of tax expenditures and the lowering of tax rates towards a flat-tax scheme.

The aim of this chapter is to throw further light into the redistributive capacity of the Italian PIT, by relying on a novel dataset containing information on 80,000 individual tax returns: a number that is almost twice that used in previous studies conducted for the Italian case. In what follows, I provide new evidence on the effects of selected personal income tax expenditures on vertical and horizontal redistribution with the aim of helping the current discussion on the reform of the Italian PIT. This is timely today when the Italian PIT is under attack from different parts (Baldini et al. 2017). This is also interesting from an international perspective (Miyazaki and Kitamura 2016). In particular, I use a novel decomposition formula of the Reynolds-Smolensky (RS) index, which was developed in Di Caro (2019), in order to analyse the redistributive effects of the set of tax instruments present in the Italian PIT, namely deductions, tax schedules and tax credits. This method allows for the evaluation of the effects of the tax instruments on vertical and horizontal redistribution, as well; the latter being relevant for understanding how PIT's instruments interfere with the original distribution of income (Dardanoni and Lambert 2001).

Furthermore, I will investigate how the two main tax expenditures for the owner-occupied house, the deduction for the main residence and the mortgage interest tax credit, influence vertical and horizontal redistribution in Italy as a whole and in the Italian regions. The preferential tax treatments for the owner-occupied house have been criticised, particularly in the United States, from an efficiency and distributive perspective (for a recent discussion, see Slemrod 2018). The most relevant criticism is that excluding net income from the owner-occupied house is a further limitation of a comprehensive income taxation scheme (Poterba and Sinai 2008; Viard 2013). In addition, this preferential tax treatment, which requires a large amount of public resources to be financed, can cause overinvestments in housing and does not necessarily improve income redistribution (Brueckner 2014). In Italy, for instance, the resources financing the deduction for the main residence and the mortgage interest tax credit are equal to about 4,6 billion euro per year (MEF 2017). In

doing this, we contribute to the works analysing housing taxation in Italy (Baldini 2008; Pellegrino et al. 2011, 2012; Figari et al. 2012).[1]

The interest for the regional dimension is motivated by two main reasons. First, the PIT can have asymmetric redistributive effects across places that need to be studied: in this direction, Bonhomme and Hospido (2013) provided evidence on the Spanish case. Second, income disparities between and within regions are growing in Europe and in Italy: it naturally raises the question if the personal income tax is able to smooth income differences of taxpayers living in different areas of the same country (CEPS 2018).

The rest of the chapter is structured as follows. Section 2 provides an overview of the Italian context. Section 3 describes the data and the methodology. The results are presented in Sect. 4. Section 5 concludes with some policy suggestions.

2 Overview of the Italian Personal Income Tax

In 2017, the last year when annual data are available, the Italian PIT contributed to tax revenues on accrual basis for about 184 billion euro, almost twice the revenues deriving from the value added tax (MEF 2018). Labour and pension incomes represent the majority of individual taxable income, whit income generated from financial activities and property being subject to preferential proportional tax treatments. This is one of the reasons why the actual redistributive role of the Italian PIT has been questioned at both international and national level (Verbist and Figari 2014). A description of the main characteristics of the Italian PIT for the fiscal year 2014, which is the focus of the present analysis, is provided in Di Caro (2017a). Tax schedules included the national progressive tax schedule, the regional and municipal surcharges, and the proportional tax *Cedolare Secca*. The *Cedolare Secca* has two rates (21% and 10%) and, since 2011, it has been applied to some income deriving from rented properties that has been excluded from the ordinary personal income taxation. The two deductions considered here, namely the deduction for the main residence and the deduction for pension contributions, are the most relevant deductions in terms of number of beneficiaries and average amount. In what follows, I also consider seven tax credits that include the tax credits for family members and employment conditions, which are part of the original structure of the Italian PIT for achieving redistribution. The remaining tax credits are used for addressing specific economic and social purposes and can be considered as tax expenditures.

Table 1 shows some descriptive statistics of the main personal income tax instruments used in the analysis developed in the next pages, which derives from Di Caro (2019). Because I am interested in the specific tax expenditures for the owner-occupied house, I will focus the discussion on such tax instruments. The

[1]Elsewhere I have studied the redistributive effects of the proportional tax *Cedolare Secca* that is applied to particular rented property income (Di Caro 2017a).

Table 1 Italian PIT instruments, summary statistics

Item	Variable	% of taxpayers > 0	Average value for taxpayers > 0 (Euro)	Gini coefficient	Concentration coefficient
Tax schedules	Progressive tax schedule	94.61	5460.35	0.5320	0.5275
	Regional Surcharge	72.79	384.12	0.5705	0.5472
	Municipal Surcharge	62.20	176.80	0.6248	0.5679
	Cedolare Secca	3.35	1263.90	0.9853	0.7242
Deduct.	Main residence	42.78	494.68	0.7348	0.3155
	Pension contributions	11.16	4234.35	0.9395	0.4170
Tax credits	Dependent family members	31.21	1016.88	0.8069	0.1819
	Employm., retirem., others	88.19	1172.17	0.2980	−0.0810
	Mortgage interest	9.66	277.14	0.9440	0.4167
	Health expenditures	41.34	241.74	0.8304	0.4154
	House renovations	18.57	534.64	0.9399	0.5894
	Interv. for energy savings	4.29	788.27	0.9833	0.6511
	80 Euro Bonus	27.53	540.60	0.7634	0.0365

Source. Di Caro (2019)
Note. Gini and concentration coefficients are obtained for taxpayers with positive items

deduction for the main residence allows for the exclusion of the cadastral income (*rendita catastale*) of the main residence from the gross income. It is interesting to note that more than 40% of taxpayers benefit from the deduction for the main residence with an average amount of almost 500 euro. This deduction is also less concentrated than other tax instruments, by confirming that many taxpayers benefit from it. As for the mortgage interest tax credit, it is applied to the mortgage interest paid for the acquisition of the main residence of the individual taxpayers up to a maximum amount of 4000 euro. Observe that, less than 10% of taxpayers benefit from it for an average amount of about 280 euro. Notably, this tax credit shows a

quite high concentration coefficient in comparison to the tax deduction for the main residence.[2]

3 Data and Methods

3.1 Data Description

Tax return data are widely recognised as important source of information for studying personal income tax redistribution. Indeed, tax files outperform survey data by providing a better approximation of top income shares and reducing survey-specific issues such as measurement errors and attrition (Card et al. 2010; Atkinson et al. 2011). On a regional level, moreover, tax statistics usually rely on larger sample sizes than surveys by improving the spatial coverage of observations (Longford et al. 2012). Despite their attractiveness tax files have some intrinsic issues. Information on individuals with income below the tax threshold (i.e. non-fillers) and households are not taken into consideration by potentially reducing the external validity of distributional studies using tax statistics (Atkinson and Brandolini 2001). Tax returns can be influenced by underreporting, which is of particular importance in a country like Italy where evasion and avoidance are high in comparison to other developed countries and show significant regional differences (Schneider et al. 2015). Therefore, the results of the distributional investigations of personal income taxation based on tax statistics, as those discussed in this chapter, have to be read in combination with the findings of other studies using different non-administrative data (Bourguignon and Spadaro 2006; Ceriani et al. 2013). For a more complete discussion of the pros and cons of using tax statistics for distributional analyses, see Di Caro (2017b, 2019).

The sample of individual tax returns used in this chapter has been received by the Italian Ministry of Economy and Finance (MEF) for the fiscal year 2014. The dataset contains different information on individual characteristics, income categories, and personal income tax instruments (e.g. tax schedules, deductions and tax credits). The sample is representative of the total population of Italian personal income taxpayers, as discussed in Acciari (2016) more in detail.

When comparing the average gross and net income in the twenty Italian regions obtained from the sample of tax files used in this study and the data from the MEF tax-benefit microsimulation model differences, on a regional level, are not marked. The MEF tax-benefit microsimulation model is the official model used by the Italian government for making ex ante and ex post evaluations of personal income tax reforms (Di Nicola et al. 2015). The data used in the tax-benefit microsimulation

[2]In 2014, there were minor tax credits for housing in terms of average amount and number of beneficiaries, which are not considered here because they are not available in the data used in this chapter.

model provides a much richer description of gross and net income than tax files, by taking into account property income, income from financial activities and a large set of personal income tax instruments including benefits that are not considered here (Di Nicola et al. 2017). Notably, T-test results do not reject the null hypothesis of the equality of standard deviations across regions among the two datasets at 5% level of statistical significance. This suggests that the data used in this chapter approximate quite well regional differences in pre- and post-tax income conditions.

Table 2 reports some measures commonly used for describing redistribution and progressivity in distributional studies (Cowell 2011). Specification I contains all the tax personal income tax instruments available in the dataset of tax files, but the mortgage interest tax credit, while specification II covers all the tax instruments. As expected, the mortgage interest tax credit produces an improvement of vertical income redistribution (i.e. RS index) and a worsening of horizontal equity (i.e. Atkinson-Plotnik-Kakwani index). Moreover, the Kakwani index passed from 0.2227 (without the mortgage interest tax credit) to 0.2249 (with all the tax instruments) by suggesting that the tax credit under consideration worked for reducing progressivity. The average tax rate passed from an average value of 19.82–19.90 when all the tax instruments are considered. For a more general discussion on the distributional aspects of personal housing taxation in Italy, see Baldini (2008) and Pellegrino et al. (2011, 2012).

Table 2 Personal income tax redistributive indexes, fiscal year 2014

Measure	I	II	Difference in %
Gini coefficient for gross income	0.4595	0.4595	0.0
Gini coefficient for net income	0.4059	0.4050	−0.2
Gini coefficient for net tax liability	0.6771	0.6775	0.1
Concentration coefficient for net income	0.4044	0.4036	−0.2
Concentration coefficient for net tax liability	0.6629	0.6639	−0.2
Redistributive effect	0.0536	0.0545	1.7
Reynolds-Smolensky index	0.0551	0.0559	1.5
Kakwani index	0.2227	0.2249	1.0
Atkinson-Plotnik-Kakwani index	0.0018	0.0017	−5.5
Suits progressivity index	0.2834	0.2868	1.2
Musgrave-Thin redistributive effect	1.0992	1.1008	0.1
Average tax rate (%)	19.82	19.90	0.4

Note. Specification I includes all the personal income tax instruments, but for the tax credit for the mortgage interest. Specification II includes all the personal income tax instruments and derives from Di Caro (2019). The table reports: the Kakwani index of tax progressivity; the Musgrave-Thin index of redistributive effect; the Reynolds-Smolensky index of redistributive effect; the Vertical Equity measure; the Atkinson-Plotnick- Kakwani index of horizontal inequity; the Suits' index if progressivity

3.2 Methodology

To calculate the redistributive effects of personal income tax instruments, I use the decomposition of the RS index discussed in Di Caro (2019). This decomposition formula is an augmented version of the generalised Pfähler-Lambert decomposition of the RS index (Onrubia et al. 2014), where the reranking term is also decomposed by using a geometric partition of the concentration index (Duclos 1993).[3] In short, the RS index has been decomposed as follows:

$$\Pi^{RS} = G_X - G_N = (G_X - C_N) + (C_N - G_N) \tag{1}$$

where G_X denotes the Gini coefficient of gross income, G_N the Gini coefficient of net income, and C_N the concentration coefficient of net income. Net income is obtained as the difference between the taxable income (i.e. $B = Y - D$), where D is the of the n deductions, minus the net tax liability T (i.e. $T = S - C$). S is the sum of l tax schedules and C the sum of the m tax credits. The difference $(G_X - C_N)$ in (1) represents the effects of a given set of tax instruments (deduction, tax schedules, and tax credits) on vertical redistribution, while the difference $(C_N - G_N)$ represents the reranking term and captures the effects on horizontal redistribution (Duclos 1993).

The main novelty of the decomposition of the RS index used here is that the reranking term describing the horizontal equity effects has been decomposed as follows:

$$C_N - G_N = R^D + R^S + R^C \tag{2}$$

where:

$$R^D = \left(Conc_{Y-T,\, Y-\sum_{i=0}^{D} d_i} - Conc_{Y-T,\, Y-\sum_{i=0}^{N} d_i} \right),$$

$$R^S = \left(Conc_{Y-T,\, Y-\sum_{i=0}^{S} s_i} - Conc_{Y-T,\, Y-\sum_{i=0}^{L} s_i} \right),$$

$$R^C = \left(Conc_{Y-T,\, Y+\sum_{i=0}^{C} c_i} - Conc_{Y-T,\, Y+\sum_{i=0}^{M} c_i} \right).$$

D, S, T denote the sum of deductions, tax schedules and tax credits, respectively. $N = 1, \ldots, n$ is the set of tax deductions; $L = 1, \ldots, l$ is the set of tax schedules; $M = 1, \ldots, m$ is the set of tax credits. The terms $Conc_{Y-T,\, Y-\sum_{i=0}^{D} d_i}$, $Conc_{Y-T,\, Y-\sum_{i=0}^{S} s_i}$, and $Conc_{Y-T,\, Y+\sum_{i=0}^{C} c_i}$ indicate that the concentration curves used to build the concentration indexes employ $\sum_{i=0}^{D} d_i$, $\sum_{i=0}^{S} s_i$, and $\sum_{i=0}^{C} c_i$, respectively.

[3] I follow the notation used in Di Caro (2019), wherever possible, where a full description of the methodology can be found.

4 Results

4.1 National Results

Table 3 reports the results of the decomposition of the RS index applied to the tax files for the year 2014. As before, specification I includes all the tax instruments present in the tax statistics used here, but the mortgage interest tax credit. Specification II includes all the tax instruments. The fact that I mostly focus on redistributive effects of the mortgage interest tax credit, leaving the deduction for the main residence on the background, is due to the relative major redistributive consequences of the former tax instrument with respect to the latter. In the next sub-section, however, I provide results for the Italian regions also for the deduction for the main residence. The results are similar to those presented and discussed in other related contributions (Di Caro 2018, 2019), where the reader can find a more detailed explanation. Vertical redistribution in the Italian personal income tax system

Table 3 Decomposing personal income tax redistribution in Italy

Tax instruments	Specification	
	I	II
Deductions (D):	**0.0123**	**0.0125**
Main residence (D_1)	0.0088	0.0090
Pension contributions (D_2)	0.0035	0.0035
Tax Schedules (S):	**0.4014**	**0.4012**
Progressive tax schedule (S_1)	0.3647	0.3645
Regional Surcharge (S_2)	0.0256	0.0257
Municipal Surcharge (S_3)	0.0125	0.0125
Cedolare Secca (S_4)	−0.0014	−0.0015
Tax Credits (C):	**0.6114**	**0.6119**
Dependent family members (C_1)	0.0767	0.0769
Employment, retirem., others (C_2)	0.4968	0.4965
Mortgage interest (C_3)	–	0.0006
Health expenditures (C_4)	0.0025	0.0025
House renovations (C_5)	−0.0122	−0.0122
Interventions for energy savings (C_6)	−0.0061	−0.0061
80 euro bonus (C_7)	0.0537	0.0537
Reranking (R):	**−0.0251**	**−0.0255**
Deductions (R^D)	−0.0010	−0.0010
Tax Schedules (R^S)	−0.0015	−0.0016
Tax Credits (R^C)	−0.0226	−0.0229
Total RS Index	**1.0000**	**1.0000**

Note. Values expressed as percentage of the total RS index. Specification I includes all the personal income tax instruments, but for the tax credit for the mortgage interest. Specification II includes all the personal income tax instruments and derives from Di Caro (2019)

is achieved through the national tax schedule and the two tax credits for family members (C_1) and occupational status (C_2). Residual effects on the total RS index can be associated to the other tax instruments, by confirming the limited redistributive weight of the set of personal income tax instruments for the Italian case. Similar results, even with a larger set of tax deductions and credits than those used here, were found by Barbetta et al. (2018).

As for the effects on reranking, which describes the interferences of the Italian personal income tax on horizontal equity, it is confirmed that tax credits have the largest impact on reranking among the tax instruments considered given that they are categorical benefits for selected individuals depending on various criteria (Ceriani and Verme 2012; Monti et al. 2015). Similar results for the Italian case were found by Pellegrino and Vernizzi (2018) with different data and techniques. Interestingly, from the comparison of the results for the specifications I and II, two aspects are worth commenting upon. When the mortgage interest tax credit is not included among the tax instruments (specification I) the relative contribution of the tax credits on vertical redistribution is slightly different than in the case of inclusion of this tax credit among the set *C* (specification II). Simply put, the mortgage interest tax credit plays a small, positive role on the total vertical redistribution of income among the Italian PIT taxpayers. As for the effects on horizontal equity, it is noticeable that the inclusion of the mortgage interest tax credit (specification II) contributes to increase the weight of the reranking term on the total RS index. In short, being a selected tax expenditure, the mortgage interest tax credit plays a negative role for horizontal equity. This result further supports the view that disentangling the effects of personal income tax expenditures in Italy on horizontal equity is important for assessing the overall redistributive consequences of tax expenditures (Monti et al. 2015; Di Caro 2019).

4.2 Regional Results

The analysis of the redistributive capacity of the Italian personal income tax from a regional perspective is instructive given that regional income disparities in this country are relevant and persistent (Fiorio 2011), and they have been widening since the crisis. Moreover, as recently documented by Mussida and Parisi (2018), Italian regional income disparities are relevant both across and within regions, the latter aspect needing further explanations (Di Caro 2018). In what follows, I report and discuss some of the results of the decomposition formula in (1) and (2) applied to the tax files for each Italian region. In particular, to describe the overall redistributive consequences of the selected tax instruments under observation the figures below compare their effects in terms of vertical and horizontal equity relative to total vertical equity, as calculated by the RS index net of the reranking (Duclos 1993).

Figure 1a shows the effects of the deduction for the main residence (D_1) as percentage of RS index net of reranking in the twenty Italian regions. In other words, this map illustrates how the specific deduction influence vertical redistribution in the different Italian regions. Positive effects are registered in all the regions

a

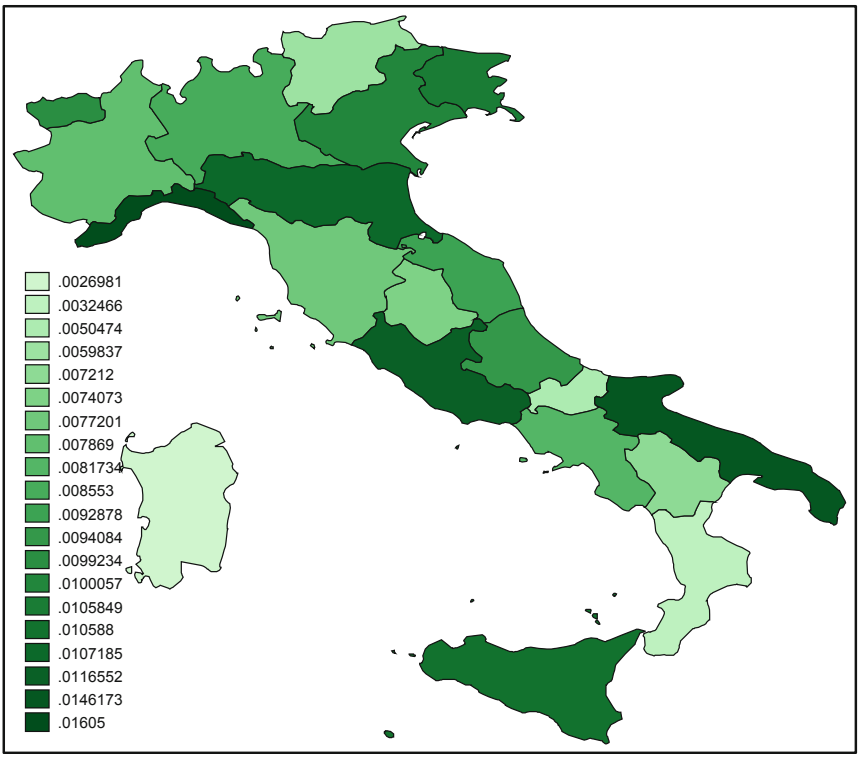

Fig. 1 (**a**) Vertical equity effects of the deduction for main residence, regional results. Note. Our elaboration, data for the fiscal year 2014. (**b**) Horizontal equity effects of the deduction for main residence, regional results. Note. Our elaboration, data for the fiscal year 2014

and, in some regions, such as Liguria and Lazio (Centre-North), and Puglia and Sicily (South) the effects are more marked. Figure 1b shows the effects of the same tax instrument on horizontal equity, calculated as the relative contribution of the deduction for the main residence on the reranking term in each Italian region, following the formula in (2). As expected, the deduction for the main residence negatively influence horizontal equity, that is, the effects on the reranking are positive in all the Italian regions. Yet, the more relevant effects are registered in the regions of the Centre-North, where there is a higher concentration of this tax expenditure than in the rest of the country.

Figure 2a shows the redistributive effects of the mortgage interest tax credit as percentage of total RS index net of reranking in the twenty Italian regions. Observe that, the mortgage interest tax credit positively influence redistribution in 11 out of 20 Italian regions, while in the remaining regions it negatively affect vertical redistribution. That said, in some regions like Sicily, Sardinia and Tuscany such tax expenditure worsens the vertical redistribution of income. Furthermore, from

a

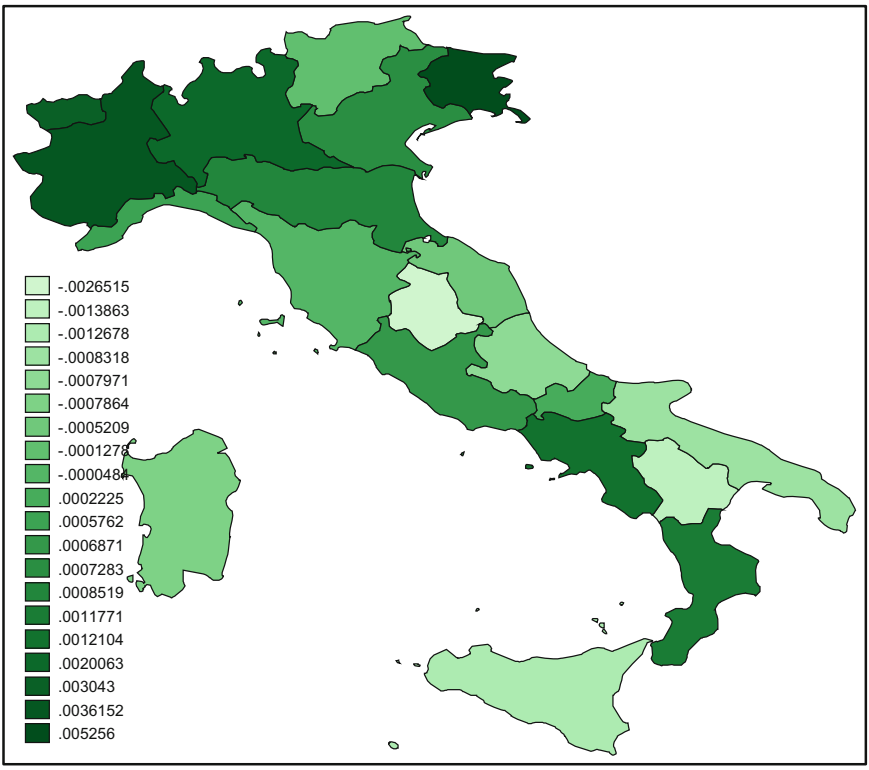

Fig. 2 (**a**) Vertical equity effects of the mortgage interest tax credit, regional results. (**b**) Horizontal equity effects of the mortgage interest tax credit, regional results

Fig. 2b, it can be noticed that the effects of the mortgage interest tax credit on horizontal equity are relatively higher than in the case of the deduction for the main residence shown in Fig. 2a. The effects on the reranking term lies between 0.14 and 0.15 and are quite evenly spread across Italy.

5 Concluding Remarks

The spread of wealth inequalities across and within countries requested new answers from distributional analysis, which is a broad research area within the economic inequality literature to which the usage of tax statistics added new emphasis and empirical challenges. With a more limited focus, in this chapter, I have contributed to the analysis of the redistributive effects of the Italian personal income tax by using original tax records for the Italian case and the methodology developed in Di Caro (2019). The main findings can be listed as follows. Additional evidence on the fact

that a very reduced number of tax instruments is able to explain most of the redistributive effects of the Italian PIT in terms of vertical equity. This is true on a national and a regional level, as well. In addition, the two tax instruments for owner-occupied house considered here, namely the deduction for the main residence and the mortgage interest tax credit play a small, positive role on vertical redistribution.

I have also shown that for a complete understanding of the redistributive consequences of tax expenditures it is necessary to provide evidence on both the vertical and horizontal sides of redistribution. In short, some tax expenditures can be welfare improving from a vertical equity perspective, but they can interfere significantly on tax treatment of equal individual. Frome the results discussed beforehand, it emerges that the mortgage interest tax credit counts for about 0.15 of the total reranking term in Italy and in the Italian regions, as well, by suggesting an important role in affecting horizontal equity. From a policy perspective, this means that the evaluation of policy reform proposals aimed at modifying the current structure of the personal income tax, in Italy as elsewhere, which can imply the assessment of the effects of tax expenditures, must necessarily balance the redistributive consequences of the personal income tax instruments on vertical and horizontal equity. Borrowing the expression of Duclos (1993), the weight to attribute to either vertical or horizontal equity is a decision of policymakers about which taxpayers have to be necessarily informed.

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Great European Crisis: Shift or Turning Point in Job Creation from Job Destruction

Martino Lo Cascio and Massimo Bagarani

Abstract The new century globalization in trade and finance—both between euro area and other world economic areas and within euro zone—quickens the pace of "creative destruction" and thereby speeds the flow of technology across European countries. In a previous work, we proposed the category of labor as a product opposed to labor as a factor of production. Coexisting forms of labor in societies range from an upper class, the labor product class, to different types of post-Fordist labor, where, notwithstanding the intensity of technology, labor input is declining. Have the 2008–2014 crises and the delays in the reforms of institutional architecture shifted or modified the long term trends? This paper describes a naïve model of diverse forms of labor substitution developed using certain rules, which proved fruitful in describing the substitution of primary energy sources (constrained logistic functions). The model is used to answer the question and to measure the structural gaps between four different EU countries (Germany, Spain, France and Italy) compared to the UK economy.

1 Introduction

In our previous works, we introduced the category of labor as a product, as opposed to labor as a factor of production (Lo Cascio and Bagarani 2018, 2017).

From our point of view, in the labor market, two paradigms coexist:

1. The heritage of post-Fordism and the "Gospel" of the finance, where labor may be still considered as factor of production;
2. The emergence of the notion a new type of labor, the smart labor, that we call labor product, coexisting with labor as factor of production, in a context of a new

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global revolutionary communication systems (Internet, Google, social media, etc.);

In the current situation, models of post-Fordist era (coupled with traditional scale economies) and new forms of work organization determined, in addition to robotization, by ICT and digitization, such as Big Data, etc. would coexist (Carlota Perez 2002, 2006; Lo Cascio 2019). In Carlota Perez, the phase we are going through is characterized by a generalization to overall economy of Schumpeterian logistic paths at firm level and the emergence of the market penetration of "converging technologies" (Nano-Bio-Info-Cognitive). In this area, work, losing the nature of commodity supplied by employees, is no more a production factor. Coexisting forms of labor in societies range from an upper class, the labor product class, to different types of post-Fordist labor, where the intensity of technology is declining (Lo Cascio 2019).

This upper class of labor is characterized by high levels of innovation and job training, especially in the service sector, so to make this component the vital aggregate and the main driver of employment in the most advanced economies.

On the industry side, the old services sector may be split in three items:

1. Traditional;
2. Services outsourced by industry;
3. Improving productivity services on their own ground, due to knowledge technologies.

In the absence of specific statistic code regarding the labor product category, the NACE code employment in medium high-technology manufacturing and in knowledge-intensive high-technology services (named as HTC) allow a first analysis of the evolution of the labor market shares within the EU economic systems.

This paper describes an attempt to develop a naïve model of diverse forms of labor substitution using certain rules, which proved fruitful in describing the substitution of primary energy sources (constrained logistic functions, see Marchetti and Nakicenovic 1979).

2 Data

The analysis uses data provided by EUROSTAT in the database "High-tech industries and knowledge-intensive services" in the period 1994–2017. The taxonomy includes activities and workers, both at the top level and on the way to reach this level. In these statistics, a classification of the productive sectors according to the different levels of innovation and knowledge intensity in each productive sector in produced by EUROSTAT.

Appendix 1, shows the adopted classification scheme, provides for a division of the NACE Rev.2 sectors:

1. Agriculture, Fishing and Mining;
2. Primary energy sources;

3. High-technology manufacturing;
4. Medium high-technology manufacturing;
5. Low-technology manufacturing;
6. Medium low-technology manufacturing;
7. Knowledge-intensive services;
8. Less knowledge-intensive services.

In particular, the employment volumes by type, year and country are available in the statistics on "Employment in technology and knowledge-intensive sectors at the national level, by sex". Five countries were selected:

1. Germany;
2. Spain;
3. France;
4. Italy;
5. United Kingdom.

The sum of the employment in the eight groups, is equal to the overall total employment for each country.

3 General Overview

A first elementary elaboration was carried out on the employment shares of each typology out of the respective country total.

Figure 1 shows the changes in employment rates between 1994 and 2016 and allows an initial reflection on the model of structural change underway in the main EU countries (including the UK).

In all countries, all typologies lose quotas to the benefit of KIS (Knowledge Intensive Services), with the sole exceptions of the UK, with a small growth in the quotas of Electricity, gas, steam and air conditioning supply and Spain, with a more evident growth of the quotas of Less KIS. Be aware, the hi-tech manufacturing declining share is due to increasing robotization and mechanization, and a part of positive increase of KIS is due to outsourcing from other productive sectors. So in the value chain in productivity of a country is crucial the evolution of knowledge intensive services.

In general, the KIS typology increases its share of employment by more than 10 points in all the countries considered in the 22 years under analysis. The country with the lowest growth is Italy (+11.0), the countries with the highest growth are Germany (+13.4), France (+13.5) and Spain (+14.1).

In terms of volume of employment, Fig. 2 shows the annual average rates of the employment by class and country between 1994 and 2016.

In all countries, total employment increases at rates ranging from a minimum of 0.54% in Italy to a maximum of 1.88% in Spain. Employment by sector increases only in the macro-sector of services (both KIS and Less KIS), with few exceptions.

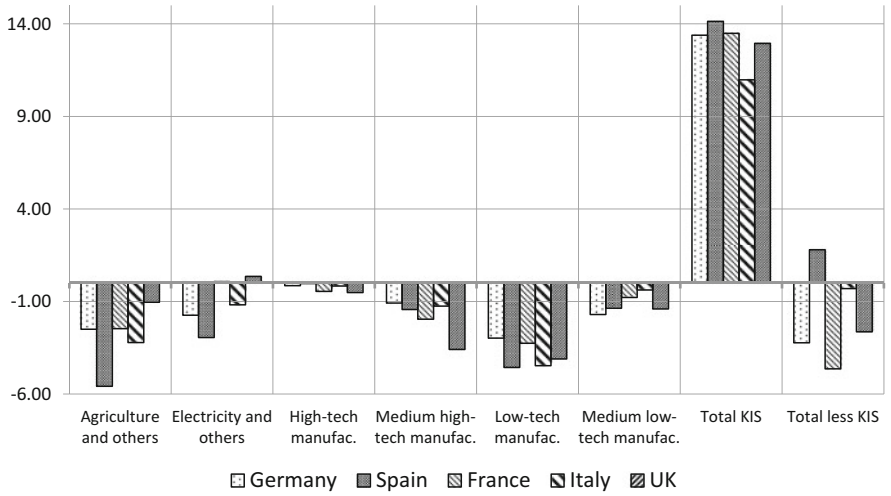


Fig. 1 Δ share of employment classes between 1994 and 2016. Source: Our calculations on EUROSTAT High-tech industries and knowledge-intensive services data

Among those countries, Spain is the one that shows the greatest deviations from the general model, due to the very low initial levels of employment. In Spain, employment grows in all typologies except Agriculture and Low-technology manufacturing. For all the other countries, the increase in employment in the KIS class made possible to absorb the reduction in the other employment classes, allowing countries to have an overall positive rate of change.

The common development model emerges also from the comparison of the historical series of KIS and Less KIS classes in the countries considered. Figures 3 and 4 show a persistent growth of shares for the KIS class. This growth is significantly larger after the 2008 crisis. On the contrary, the quotas for the Less KIS typology show a decreasing trend, strongly conditioned by the 2008 crisis.

Indeed, it is possible to highlight the existence, within the common model, of two groups of countries:

1. on the one hand, France, Germany and the UK with increasing shares of KIS and decreasing shares of Less KIS, in particular the latter due to the crisis;
2. on the other hand, Spain and Italy with increasing shares of KIS, although with lower speeds than the first group, and increasing shares of Less KIS after the 2008 crisis.

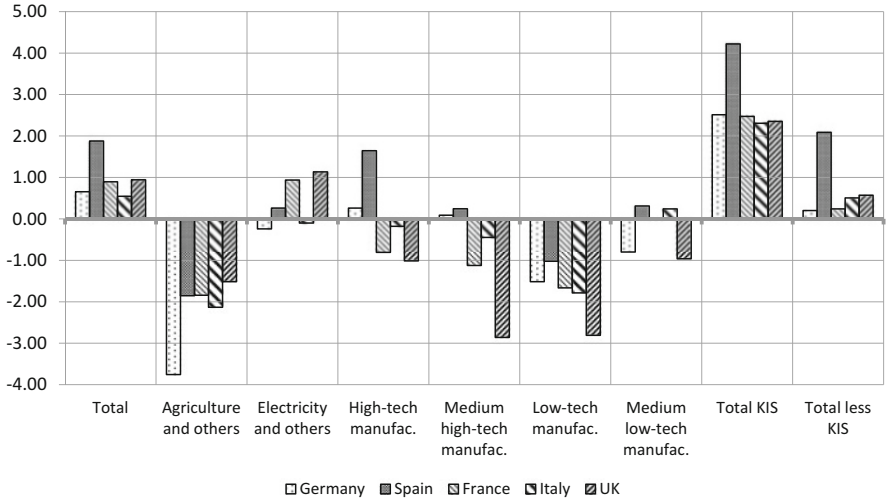


Fig. 2 Annual average change rates 2016–1994 for employees by class. Source: Our calculations on EUROSTAT High-tech industries and knowledge-intensive services data

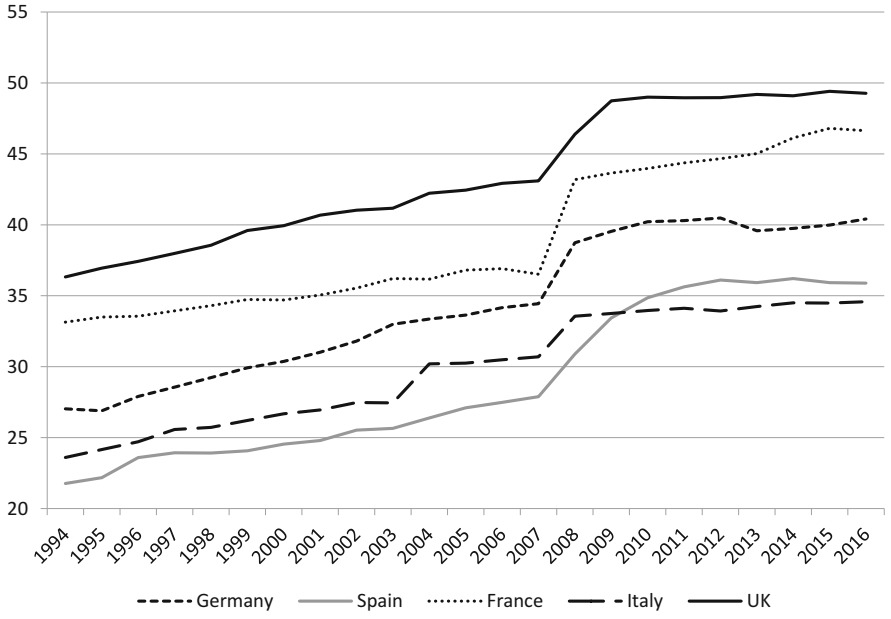


Fig. 3 Country-by-country trends in KIS sector (shares of total employment). Source: Our calculations on EUROSTAT data

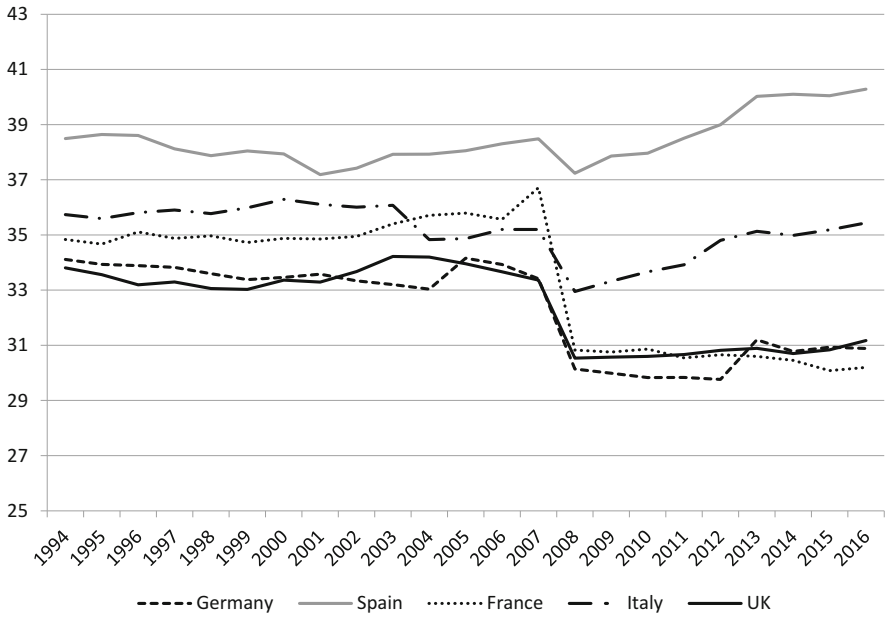


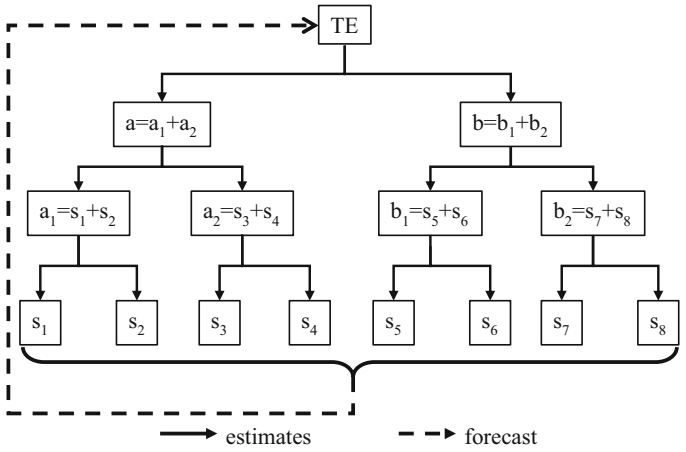
Fig. 4 Country performance of the sector Less knowledge-intensive services (shares of total employment). Source: Our calculations on EUROSTAT data

4 A Naïve Model

The data show a path of development of the labor market characterized by a process of substitution in which, for all the countries considered, employment in technologically advanced services tends to prevail over all other forms of work. High technology employment in manufacturing loses, on statistical ground, his weight on total employment due to the outsourcing of the productivity chain coupled with robotization and mechanization processes.

The relative position in time of the countries considered may be captured by a naïve model in analogy with the typical techniques used since the seventies for the study of substitution processes and market penetration of the different energy sources (Marchetti and Nakicenovic 1979; Marchetti 1980). "One general finding is that almost all binary substitution processes, expressed in fractional terms, follow characteristic S-shaped curves, which have been used for forecasting further competition between the two alternative technologies or products, and also the final takeover by the new competitor." (Marchetti and Nakicenovic 1979, page 1). In this case, the S-shaped curves are used to analyze the competition between two labor market alternatives and to identify which alternative can possibly take the lead in the labor market for the next few years. The estimation of the substitution processes took place through logistic functions based on odds ratios calculated for four elementary

groups of two sectors each and for the following nested groups up to the level of total employment per country. The following diagram shows the path taken by the study in the analysis of substitution processes:



s indicates the individual sectors, *a* and *b* indicate the groups and TE indicates the employment for the total of the sectors in the country.

The logistic functions of the four groups of sectors have been estimated by minimizing a loss of information function of the odds ratios of employees in a sector as a function of time.

$$\ln\left(\frac{q_i}{1-q_i}\right) = \alpha_i + \beta_i * t + u_{i,t} \tag{1}$$

then

$$q_i = \frac{1}{1 + e^{-\alpha} * e^{\beta * t}} + f(u_{i,t}) \tag{2}$$

since

$$\exp\left[\ln\left(\frac{q_i}{1-q_i}\right) + \ln\left(\frac{1-q_i}{q_i}\right)\right] = 1 \tag{3}$$

then

$$\sum_i q_i = 1 \tag{4}$$

For k nested grouping of $i \subseteq \Sigma_k i$

The *LS* estimates of (1) are used for obtaining the theoretical values of a nested group chain satisfying the constraint (4).

The constraint (4) is always satisfied also because in the time interval of the analysis, no new sectors appear, nor do existing sectors disappear.

5 Common Behavior, Different Stages

The existence of a common model of labor market penetration, which emerged from the analysis of basic data above, is confirmed and strengthened in the case of the adoption of logistical functions for the interpretation of substitution processes between sectors. Furthermore, the position of single country in the trajectory of this common model emerges.

Figure 5 shows the estimated logistic functions for each country and for four production macro-aggregates (primary sectors, manufacturing, KIS, low KIS), over a long period.

The behavioral model is similar for the five countries considered:

1. Market shares of primary macro-sectors, manufacturing and non-technologically advanced services tend to decline over the long run;
2. The only sector with increasing market shares, for all five countries, is the KIS sector;
3. KIS share growth rates are rather similar for at least three of the five countries, Germany, France and UK (see Fig. 6);
4. Spain, but above all Italy, show a relevant delay in the KIS sector that seems not converging in the long run with the rest of the countries.

As in Fig. 7, the inflection point in each logistic function has already been reached before 2018, with the consequent modification of the curves and the relative growth rates. In fact, for each logistic function the beginning of the saturation phase, or, if you want, the loss of momentum of each economy compared to the previous period (where logistics indicated growth at increasing rates), is highlighted.

Figure 8 shows the results of a backward and forward projection outside the 1994–2017 period of estimation. The graph shows both logistic traits and, therefore, their inflection point.

It is interesting to note the substantially convergent trends of the three logistic functions estimated for the UK, Germany and France, which suggest the existence for the future of a single model for the three countries.

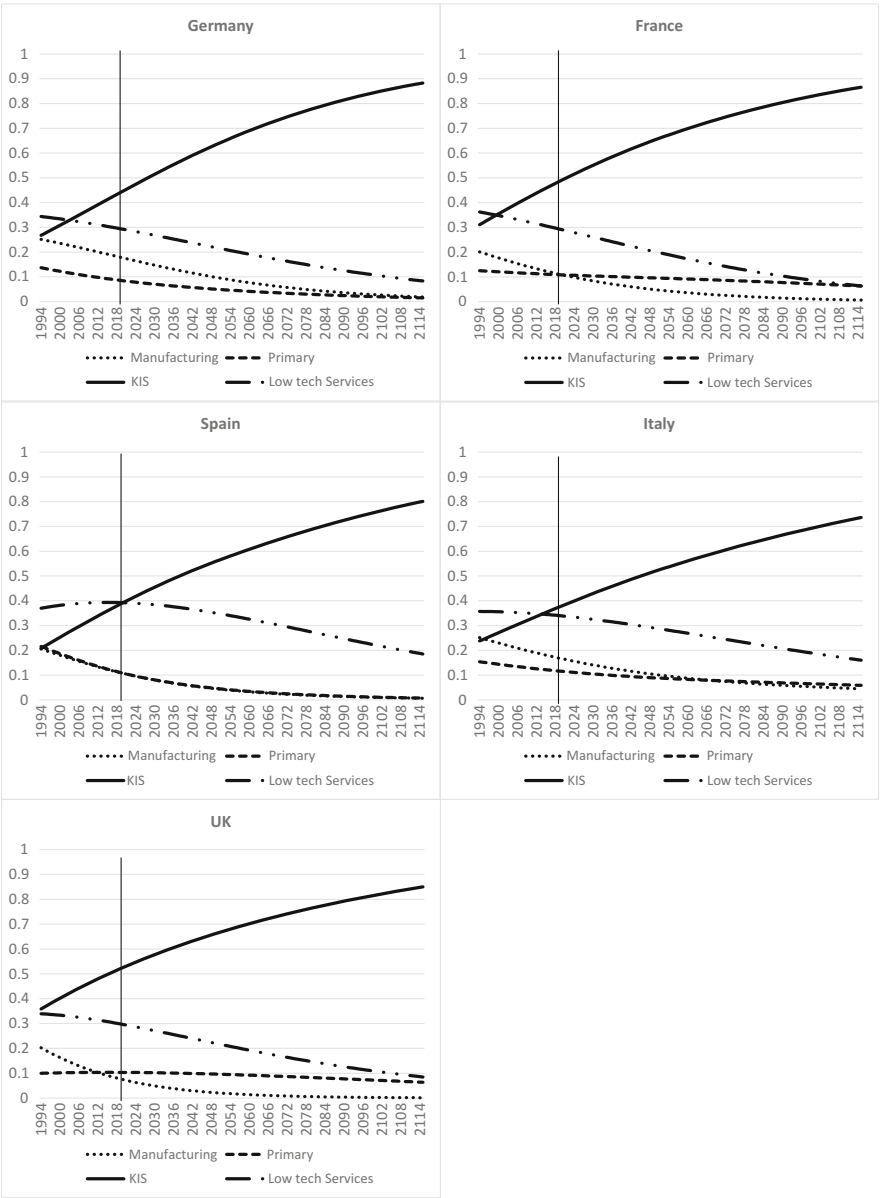


Fig. 5 A comparison among countries: same model, different stages

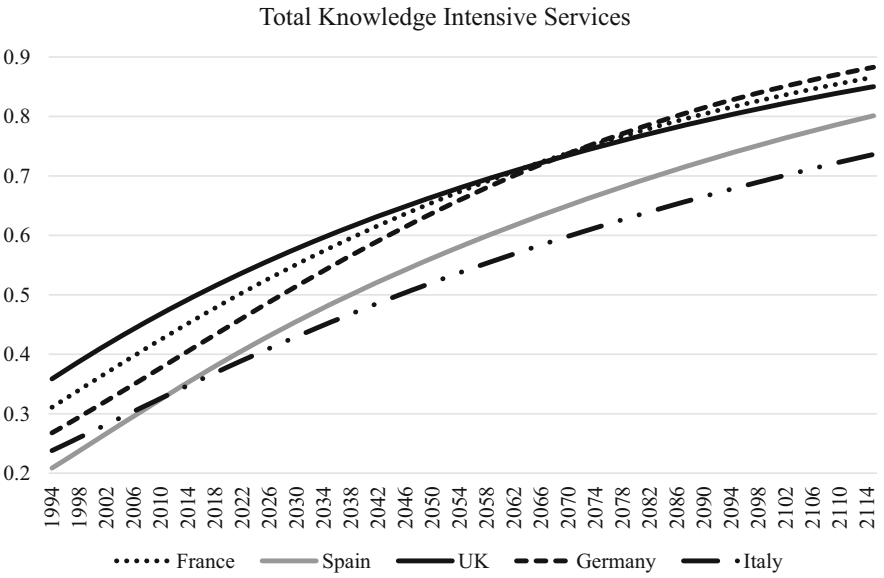


Fig. 6 Logistic functions for the Total Knowledge Intensive Sector (KIS)

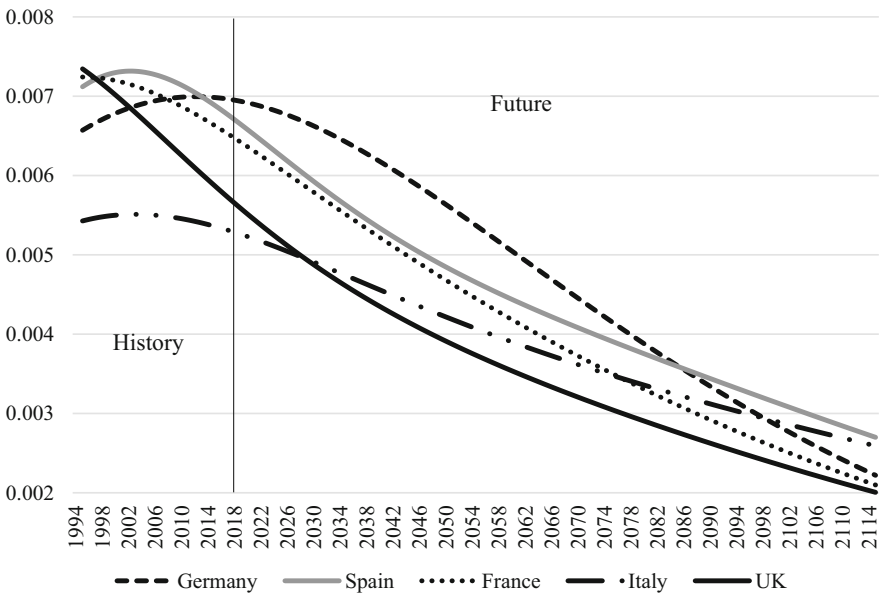


Fig. 7 Point derivatives of KIS logistic functions

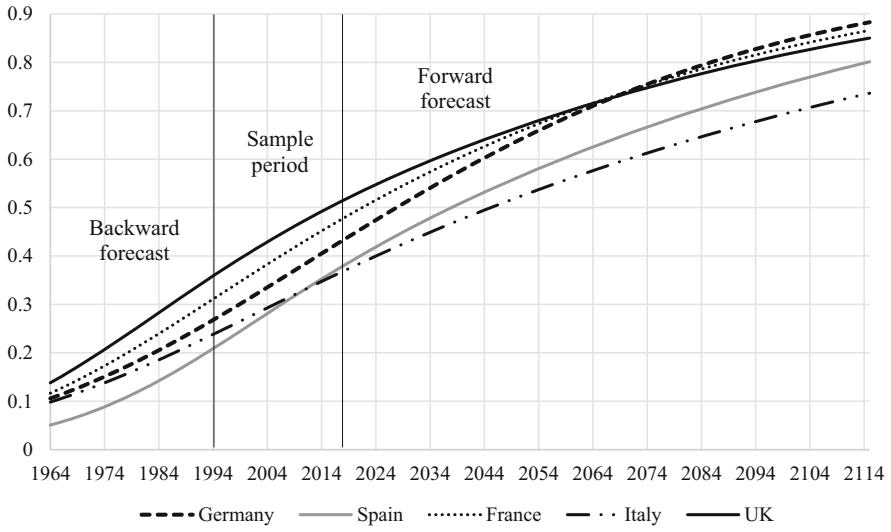


Fig. 8 Past and future of high tech services market shares at a glance

The behavior of the models for Spain and Italy is more differentiated. In particular, if for Spain the behavioral model seems to be similar to that of France, Germany and the UK, with lower dimensional levels, as far as Italy is concerned, the model seems to diverge in the long term with a growing dimensional loss compared to other countries.

A further feature of common behavior can be inferred again from the graphs presented in Fig. 5. As can be seen, for each country there is a progressive substitution between the Low KIS sector and the KIS sector during the sample period of function estimation (1994–2017), with the shares of employment in the KIS sector exceeding the Low KIS quotas in all countries, albeit at different times.

The logistic models show that the common behavioral model develops with different stages among countries. The UK is the first country where KIS sector quotas overrun the Low KIS sector. UK is followed by France, Germany, Italy and, finally, Spain.

6 The Impact of Financial Crisis and Final Remarks

The new century globalization in trade and finance—both between euro area and other world economic areas and within euro zone—quickens the pace of "creative destruction" and thereby speeds the flow of technology across European countries in the long terms.

In a previous work, we proposed the category of labor product as opposed to labor as a factor of production.

Coexisting forms of labor in societies range from an upper class, the labor product class, to different types of post-Fordist labor, where the intensity of technology is declining.

Question: the 2008–2014 crises and the delays in the reforms of institutional architecture have shifted or modified the long term trends?

From the analysis emerges:

(a) Structural models similarity;
(b) Different paths and delays;
(c) No turning point, only a breakdown and shift on previous trend;
(d) Critical position of Italy both on levels and trajectory estimates.

Appendix 1

Classification of technology and knowledge intensive sectors (NACE Rev. 2)

NACE activities	Description	NACE Code
Agriculture, forestry and fishing; mining and quarrying	Agriculture, forestry and fishing	A
	Mining and quarrying of energy producing materials	B
Electricity, gas, steam and air conditioning supply; water supply and construction	Electricity, gas, steam and air conditioning supply	D
	Water supply; sewerage, waste management and remediation activities	E
	Construction	F
High-technology manufacturing	Manufacture of pharmaceuticals, medicinal chemicals and botanical products	21
	Manufacture of computer, electronic and optical products	26
	Manufacture of aircraft and spacecraft and military vehicles	30.3–30.4
Medium high-technology manufacturing	Manufacture of chemicals, chemical products and man-made fibers	20
	Manufacture of electrical equipment	27
	Manufacture of machinery and equipment n.e.c.	28
	Manufacture of motor vehicles, trailers and semi-trailers	29
	Manufacture of railway locomotives and rolling stock	30.2
	Manufacture of other transport equipment	30.1–30.9

(continued)

NACE activities	Description	NACE Code
Low-technology manufacturing	Manufacture of food products	10–12
	Manufacture of textiles	13–14
	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	15
	Manufacture of wood and wood products	16
	Manufacture of pulp, paper and paper products	17–18
	Other manufacturing	31–32

NACE activities	Description	NACE Code
Medium low-technology manufacturing	Manufacture of coke, refined petroleum products and nuclear fuel	19
	Manufacture of rubber and plastic products	22
	Manufacture of other non-metallic mineral products	23
	Manufacture of basic metals and fabricated metal products	24–25
	Repair and installation of machinery and equipment	33
Total knowledge-intensive services	Water transport	H50
	Air transport	H51
	Information and communications	J
	Financial and insurance activities	K
	Professional, scientific and technical activities	M
	Employment activities	N78
	Security and investigation activities	N80
	Public administration and defense; compulsory social security	O
	Education	P
	Human health and social work activities	Q
	Arts, entertainment and recreation	R
Total less knowledge-intensive services	Wholesale and retail trade and repair of motor vehicles and motorcycles	G
	Transport and storage and communication (except H50 and H51)	H
	Accommodation and Food and beverage service activities	I
	Real estate activities	L
	Administrative and support service activities (except N78 and N80)	N
	Other service and activities	S
	Activities of households as employers	T
	Activities of extraterritorial organizations and bodies	U

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Multinationals: The Role of Consumers and a New European Fiscal Trend

Anna Pellanda

Abstract This chapter consists of three sections. The first discusses the role played by elasticity of demand in enabling multinationals to make profits. Consumers long for goods charged with meaning for their social prestige and self-esteem; thus the elasticity of their demand support the oligopolistic profit.

The second section focuses on how multinationals produce with a view to profit alone lowering production costs, paying very badly their workers and, in the case of the multinationals producing meat, exploiting animals. In so doing they pollute the environment, grab land and clear forest to grow larger and larger.

Another way to lower production costs is to avoid and/or elude taxation and this is the subject of the third section of this chapter. The proposal formulated during the Ecofin in Tallinn in September 2017 to levy a so-called *web tax* on multinational producing digital products is seen as a very important step against their power of damaging consumers, industrial relations, ecosystems, and their subtracting resources to finance public expenditures, social policies of the countries where they act.

The *web tax* could also be seen as a good step towards a possible common European fiscal policy.

1 Introduction

The huge growth in transport options and communications between different states of recent decades has provided the dual track along which the activities of multinationals have operated and prospered. These firms were born from the "direct investments abroad (IDE)" made by the various states, but they acquired specific characteristics that not even Balance of Payment Theory can explain any more. They are peculiar. From the end of the nineteenth century onwards, businesses had looked abroad to obtain the agricultural and mineral raw materials they needed to produce

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their goods at home, but soon after the Second World War, they started producing most of their industrial goods in foreign countries, and selling them all over the world. To conduct all these international activities, they needed banking, financial, and insurance services. Hence the arrival on the scene, in the 1960s and 1970s, of the so-called "post-industrial" multinationals.

Multinationals produce abroad through very well organized structures consisting of overseas branches, associated firms, and joint ventures, licensing and selling their products mainly through franchising agreements. They establish their physical headquarters in underdeveloped countries, very often by "land grabbing" in Sub-Saharan Africa, Latin America, and South-East Asia. They exploit very cheap labor in these areas, and do everything they can to prevent new firms from entering the market because their main goal is to make a profit. To do so, they monitor consumers' tastes, operate on a large scale, implement technological progress, and contain their costs.

One way to contain costs is through lower taxation. The costs of taxation can be reduced either by not paying it in the country where multinationals produce their goods (*tax evasion)*, or by paying taxes in countries where they are extremely low (*tax elusion*). The more the goods are intangible, such as digital products, the easier it is to avoid taxation. Today, intangible goods are demanded and produced more and more, spread by knowledge-based economic systems.

Up until recently, there was a commonly-held belief that it is impossible to limit the multinationals' power for the simple reason that they straddle national borders. But a very important Ecofin meeting took place on September 29th, 2017, at Tallinn in Estonia, where four countries—France, Germany, Spain and Italy—with the support of another 19 countries, and the opposition of seven, agreed to fight tax evasion and elusion by multinationals. The result of this cooperation will be the "*web tax*", to be levied on Google, Apple, Facebook, Amazon (the so-called GAFA), and others at the end of 2018. Years ago, similar battles were led by single countries. Now the war will be waged by four countries together—and in unity lies strength.

If this new cooperation works, it will be highly significant, not only in the fiscal sphere, but also in strengthening the European Union. Certainly the coming European taxation on digital multinationals will be just the first step on the way towards a common European fiscal policy. Taxes on firms' production (like the Italian IRAP), on workers' income (like the Italian IRPEF), on economic activities (like the Italian IVA), and so on, are bound excessively to national systems, and it is very difficult to harmonize them. It is perfectly feasible, however, to levy taxes on multinationals because their activities take place in many countries, though they belong to none of them. If, in the coming years, the European Union (born in 1957 as a monetary union) succeeds in implementing another economic measure—the fiscal one—this would confirm that economic matters can prompt that unity that political and social reforms are unable to build.

These are the issues discussed in the present contribution, which analyzes three questions: (1) the peculiar relationship between consumers and multinationals; (2) the capability of multinationals to produce products much in demand by consumers at relatively low prices, by lowering their costs and exploiting scale economies. (3) Evading taxation is one of the means used by multinationals to lower costs,

and this aspect is discussed in relation to EU fiscal rules, and the possibility of a fiscal union.

Taking one step at a time, we will see that the power of multinationals is deeply related to consumer demand and behavior. The oligopolists' success can only be clearly understood by stressing the importance of the *elasticity of demand*. It is the consumers themselves, with their attitudes, who support the multinationals. One such attitude is described as a high elasticity of demand for *coveted new products*. The introduction of new products is generally seen as the typical action of innovative, dynamic entrepreneurs, as Schumpeter (1911) taught us. But demand—with its love of prestigious products and its willingness to pay high prices rather than to renounce them—encourages the oligopolist strategy.

Oligopolists provide new products, but are well aware that their prices cannot be too high if they want to sell them (all), so they act in two ways: they adopt discriminatory prices to cope with the elasticity of different demands; and they *lower production costs*. Their cost reducing capability relies on their *large dimensions,* and on their use of real *economies of scale*. Multinationals fit this picture perfectly: their large size and presence on global markets are essential when they seek to lower their costs—and one of the solutions they find is to avoid *taxation*.

Producing goods in one place and paying low taxes somewhere else is a characteristic that distinguishes multinationals from large national firms. International codes have thus become absolutely necessary to govern the economic conduct of multinationals. The possible formulation of a *European fiscal policy* represents one of the best ways to bring order in this globalized economic world, at least as far as the activities of multinationals are concerned.

A good example of how all these matters play out comes from the meat market, in which consumers' tastes and the elasticity of their demand, the prices of goods produced at lower costs, and the need for international fiscal control over multinationals are all particularly evident. Another market that typically embodies these characteristics is the market for digital products, which will be discussed in the third section concerning the "*web tax*".

2 Multinationals and Elasticity of Demand

The concept of elasticity of demand was first studied by Alfred Marshall in 1890, but was placed in relation to different market organizations by Joan Robinson in 1933. The latter economist explained that profit does not exist in a state of perfect competition; it appears when there is imperfect competition and rules in monopolistic market situations, depending on the elasticity of demand. She pointed out that it is the slope of the demand curve that generates a wider or narrower gap between this curve and the Cournot (1838) point, enabling the formation of profit.

As shown in Fig. 1, if the demand curve (or average price, DD') is less elastic, the distance DP between this supposed demand and the market price (PO) decreases, and so does the segment E'C, revealing the difference between the average price

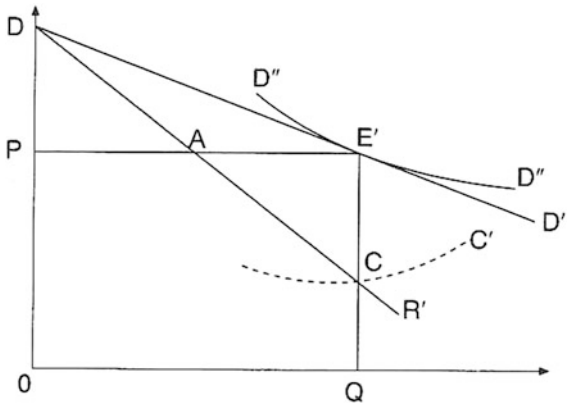

Fig. 1 Marginal curves derive from average curves. Source: (Robinson 1969) reproduced with permission of SNCSC

(E'Q) and the Cournot point (C), which indicates profit. DP and E'C are equal by construction. If the market price goes down, the demand curve is less steep, its elasticity becomes <1 and the profit is bound to shrink. If it makes no profit, a multinational dies because its only purpose is to make profit. The distance DP must therefore be preserved for these firms to survive.

There are two main ways to keep a sufficient distance DP: one is to work on elasticity of demand; the other is to contain production costs. In this section, we look at how to keep the demand curve elastic.

Classic and marginalist theories explain the demand curve with the aid of the marginal utility concept, with the exception of the Giffen Paradox (Giffen 1883) and the extreme cases of perfect elasticity and perfect inelasticity. This is classified as a micro approach because it considers the demand of individuals, and certainly reflects a belief in the rationality of consumers, who would only buy useful products. We had to wait for Keynes (1936) to take a macro approach, relate the demands of consumers as a group to their income, and introduce the elasticity of income. This formulation is likewise based on reasonableness, if not on rationality.

Psychological and sociological motives were included in the study of demand with Duesenberry in 1949, and later on with Simon (1956) [though Veblen (1899) and the Wisconsin School should not be forgotten]. These latter theories introduced historical elements in the economic analysis, and demand was no longer seen as having only a price and/or income elasticity. It was seen to vary according to consumers' tastes, fashions, the influence of advertising, and new needs induced by big producers like the multinationals. The price/quantity and income/quantity pairs certainly are much easier to calculate, whereas the psychological issues and sociological influences are much more complicated to quantify. Given the huge impact of psychological and sociological components on the formation of prices, however, the above-mentioned scheme of elastic, anelastic, and inelastic curves remains valid in explaining the slope of the demand curve.

Contemporary theories of demand are characterized by this broad approach and try to describe consumers' behavior more realistically than classical and marginalist

theories. Even Keynes's theory is considered insufficient to explain consumers' choices, though the assumption that consumption is a function of income remains as a fundamental basis of any analysis. The other determinants of demand are emotional stimuli and motives of social prestige. Consumption, related to income by Friedman (1962) and Modigliani (1966), is seen by Duesenberry (1949) and Kahneman-Tversky (1979) as an element of self-esteem, a means to climb the social staircase. These are the most famous theorists of demand, but many others can be included in this line of contemporary economic thought. What they all share is the "old" belief that the slope of the demand curve (DD' in Fig. 1) has to remain elastic for the formation of profit (E'C) to be preserved. Should the demand become inelastic, the profit would disappear. It is the elasticity of demand that supports oligopolistic profit.

Oligopolistic producers must consequently work on the psychological and sociological reasons behind consumer demand, advertising the quality and prestige of their products, underscoring the constantly-renewed novelty of their goods, inducing new needs in the consumers' vision. These are the typical methods oligopolists use to manipulate consumers' tastes and orient their choices where elasticity of demand is high. The consumers' emotional weakness is the big producers' strength.

The meat multinationals embody all these elements. Rifkin (1992) says that meat has represented the satisfaction of desires and the achievement of social status for centuries. Even today, he writes, the British "culture of meat" and the American conquest of "new consumption frontiers" are the main myths that explain the enormous meat consumption in the Western world. Other goods, such as motor cars and digital products, are overcharged with meanings of personal achievement and social relevance too, but the meat consumption encouraged by multinationals carries the additional problem that meat in the diet is hard to replace, a problem that does not affect the production of other "symbolic" goods. As mentioned before, the Keynesian statement of consumption as a function of income cannot be omitted from any explanation of demand but—as Duesenberry made the point with his theory of "relative income"—if cars become too expensive, people can take other means of transport or carry on using obsolete automobiles. Only the demand for meat remains elastic because multinationals exploit the "meat culture" and, at the same time, keep prices relatively low. They lower the production costs, exploit land grabbed from underdeveloped countries, pollute the ecosystem more than any other industry, take advantage of cheap labor, and disregard animal welfare. How this can happen is discussed in the next section.

3 Multinationals: Huge Dimensions, Low Costs, Environmental Damage

To attempt a theoretical explanation for the phenomenon of multinationals, we need to step away from mainstream economics because multinationals break away from some of the most accepted economic explanations. Starting from the concept of *profit*, and moving on from the theories of Cournot (Cournot 1838), Schumpeter (Schumpeter 1911) and Chamberlin (Chamberlin 1933) to the fundamental work by J.S. Bain (1956) in 1956, we can see that it is accepted that profit—as the difference between revenues and costs—cannot survive if prices are low and the elasticity of demand <1. But multinationals are able to sell their products at relatively low prices to meet a demand that is not inelastic.

Another concept traditionally used to explain the activities of monopolists and oligopolists is that the goods they produce are either homogeneous (as Cournot and Robinson theorized), or new and not imitable (as Schumpeter said). More clearly than any other economist, Schumpeter linked monopolistic profit to dynamic states. Multinationals undeniably produce new goods that are much in demand, but they do not care about statics and dynamics, or any other analytical distinctions. Their behavior is framed in institutional settings of developed and underdeveloped countries. They look for places where obliging authorities consent to their land grabbing, and offer very cheap labor, as Vernon wrote in 1977. They are mainly interested in gaining larger and larger market quotas, as S. Hymer explained in 1974 (Hymer 1974).

Who are these multinationals? They are monopolistic firms that *adopt an international structure, because at home they run the risk of losing control of the national market under the pressure of another incoming national monopoly*. This is the case of Coca-Cola and Pepsi Cola, which have been battling with each other since they were first established in 1886 and 1898. Such national monopolies usually become multinationals by merging with smaller firms, or forming trusts with equally big firms. An example of the former is Glaxo, which merged in 1995 with the smaller (but competitive) Wellcome company: it was only by joining forces that they could face the market power of SmithKline in the world of pharmaceutical products. Fiat and Chrysler are an example of the latter: in 2014 they formed a trust between two already big businesses (though Chrysler was in very bad shape), giving rise to a new model of industrial relations that met with President Obama's approval.

Multinationals often have the *support* not only of *national governments,* but also of *international organizations* like the International Bank for Reconstruction and Development and the World Bank which grants them loans through the International Finance Corporation (IFC). They can generally finance themselves, however, and achieve enormous turnovers. Exxon Mobile, for instance, is said to make a turnover with its oil production (even today) that exceeds the gross domestic product (GDP) of Egypt. The enormous amount of capital the multinationals generate is used: (1) to buy important patents, as in the case of Glaxo-Wellcome for medicines, and Xerox for printing goods; (2) to launch advertising campaigns that praise the (often non-existent) features of the products they supply or appeal to consumers' personal

or social ambitions; (3) to play on consumers' lack of information and adopt discriminatory prices, both for the same products in different areas, and for after-sales services. It is essential for them to keep track of consumers' rapidly mutable tastes in order to maintain their strong position on the global market.

Their huge size is necessary to avoid decreasing returns, and to exploit real scale economies: primarily by utilizing *human capital* and *technical progress.* Multinationals of the digital economy, internet, and web economies have their roots in human capital, training and constant updating. The most important raw material they use is knowledge. Technical progress is essential to the production of new, desirable goods full of meaning for the consumer. Firms and individuals long to buy the latest models of computers and smartphones, which are often sold through e-commerce networks. People are ready to pay high prices at a pressing pace because these products are constantly being modernized and renewed, and are consequently very fashionable. That is why the elasticity of their demand remains high.

It is difficult to keep track of where these goods are produced and distributed, and this facilitates tax evasion, as we shall see in the third section of this paper. Meat multinationals are considered here because, alongside all the above-described traits, these firms also have some peculiar features that make them not only powerful, but also very dangerous. Meat multinationals are a particularly good example of the path that leads the power of a few to become a risk to us all, which passes through a massive fraud. The path is covered in the following steps:

POWER OF THE FEW
thanks to their huge size, lower production costs, and higher profits

MASSIVE FRAUD
concealed by the hypocrisy of producing coveted goods at low prices for the biggest demand

NATURAL AND SOCIAL DISECONOMIES
due to pollution, famine, damage to human health and animal welfare, stealing of public resources

The biggest food multinationals can be called the "ten sisters of agribusiness", borrowing from the idea of the "seven sisters of oil". They are Associated British Food (ABF), Coca-Cola, Danone, General Mills, Kellogg's, Mars, Mondelez, Nestlé, PepsiCo, and Uniliver. Like all multinationals, they thrive on big dimensions and real scale economies, and particularly on intensive animal breeding (cattle, pigs, chickens, small fish). For these organizations, it is not technical progress that matters, but low production costs, low-paid labor, and cheap raw materials (the animals and their food). Since the assembly line was invented in the nineteenth century to save time at the slaughterhouses of Chicago, coupled with the invention in 1869 of refrigerators for storing butchered meat in railroad carriages, the technical advances in intensive breeding have mainly consisted of conveyor belts for delivering feed to, and collecting manure from animals unable to move, and machines for milking cows, and cutting pigs' tails and chicken's beaks. The huge advantage of the companies' large dimension lies in that they have enormous physical spaces where

they can squeeze as many animals as possible into narrow rows where they can barely stand, and from where they are never taken to graze. Cows are fed not with hay and grass, but with soya beans and cereals, mixed with hormones to make them grow faster, and antibiotics to prevent them from becoming ill in such unhealthy conditions. The numbers involved are enormous: to give an example, recent data on the new intensive breeding installation at Finale Emilia (Italy) forecast that it will contain 3000 pigs, 900 sows, 85,000 chickens, and 60,000 hens. The workers needed to run intensive breeding farms are comparatively few. Apparently just one worker is in charge of 100 chickens. Workers at such breeding farms and slaughterhouses are very poorly paid (and it is difficult to obtain data on their wages). But from Jonathan Foer (2009) we know that they are usually people with no qualifications, often with a history of drug addiction, with all sorts of personal problems that induce them to behave very cruelly with the animals. Worker exploitation is not only a skeleton in the cupboard of the food multinationals, of course. The once Dutch, now American De Beers company employs children in its mines, for instance. Latin American, Australian and Asia-South Pacific multinationals offer wages so low that it is appropriate to speak of modern slavery. But if their costs are kept low, there remains a good gap between the Cournot point and the demand line, and profits are consistent. The profit generated by intensive breeding is the product of worker exploitation and animal suffering.

The fraud implemented by these multinationals lies in that they present their activity as a heroic effort to feed the world by mass producing meat that every consumer can afford. The price of the meat they sell is certainly low, but we cannot ignore how this is achieved. As Lymbery and Oakeshott (2014) write: "the true cost of cheap meat" lies in high profits made at the worker' and animals' expense. This sort of industry is also highly polluting. Our air and water are damaged by carbon oxide (and 60% if this gas is produced by cattle breeding), and by manure draining into rivers (where its nitrogen and phosphorus content make algae bloom). Forests are cleared at an alarming rate (in Brazil, Congo, Indonesia, and so on) to sow soya for animal feed. Meanwhile, people die of thirst—especially in Africa, where 87% of the available water is absorbed by the meat industry—and hunger (as Rifkin put it, one third of the world's cereal production is used to feed cows and other cattle, while more than a billion people are undernourished). As Franco Fragassi (2014) reports, Coca-Cola, Philip Morris, Texaco, and Monsanto also pollute the water where they produce their goods, and so did British Petroleum when its platform in the Gulf of Mexico exploded in 2010, while Nestlé clears forests to produce palm oil, and McDonald's does so to breed cattle and chickens. But multinationals care not at all about the environmental havoc they wreak. They only care about profit, and will accrue it by any means, which includes paying taxes not where they produce their goods, but where taxes are the lowest possible.

4 Multinationals and European Taxation

The Physiocrats, with their strong belief in "*laisser faire, laisser passer*", may have inspired the four freedoms of the Single European Act of 1986, but they certainly did not forecast the enormous freedom that big international firms would have awarded themselves. Nor, with their physical (or rather agricultural) idea of the net product ("*produit net*") as the only surplus to be taxed, could they have possibly even imagined a "digital" (dematerialized) production of profit needing to be governed internationally.

The worldwide search for the most convenient place to produce goods, and somewhere else where taxes are lowest is the extreme result of the *laisser faire*. What is new, perhaps, for every economy is how important the production of immaterial goods like knowledge and information has become. Major operators like Google and Facebook spread these immaterial products through social media like Apple and Microsoft, while Amazon helps them to sell without stores (to use James Patterson's definition) (Patterson and Di Lallo 2017). Of course, producers of food (like those described earlier) and other agricultural products, or of cars, medicines, transportation, and so on, still create material goods and obtain a physical "*produit net*". So the difficulty lies in reconciling the production of some multinationals and the taxation of all of them. The European approach to a new fiscal policy starts with rulings concerning the most ungovernable multinationals, those in the digital industry.

This European fiscal project is based on two concepts: *taxation of sales* and *stable organizations*. The first involves taxation levied on the proceeds of sales instead of on profits, because profits are too volatile, while proceeds are better indicators of real gains. Both concepts emerge more clearly if we look at a couple of cases in the history of the European fiscal project: Italy and Ireland.

The European Economic Union has been trying to produce fiscal rules for the activities of multinationals for years. The problem was tabled at several G20 and G7 meetings, but it was only in 2015 that a concrete step was taken in the digital sector, on a local level: Italy accused Apple of tax evasion amounting to 880 million euro between 2008 and 2013, and inflicted a (somewhat measly) sanction of 318 million euro, promptly paid by CEO Tim Cook. The situation in Ireland was similar, but more complicated. The European Commission accused Apple of evading 13 billion euro worth of taxes on gains made all over Europe from 2003 to 2014. Apple does actually pay taxes in Ireland, at 1% or even less, instead or the normal Irish rate of 12.5%. Ireland does not want to see Apple settle its bill for fear of losing the firm's investments in Ireland, so Ireland and the European Commission have different opinions on the matter. Ireland claims that Apple actually has production activities in Cork (in the province of Munster), while the Commission maintains that it is only a place to which it assigns gains made all over Europe. This is a typical case in which the concept of stable organization is absolutely necessary to decide where and how taxes are due. Based on this concept, it is not necessary to physically produce in a country, but only to sell there, in order to be liable for tax.

The problem is very complicated, as Gabriel Zucman (2013) explained in October 2015 during an international meeting in Lima, attended by the IMF and the WB. Then, to complicate matters further, there is the *American attitude*. Many multinationals are Americans (roughly 134 out of 500 multinationals are active in the States), and when the European Commission tries to fine them for tax evasion, the American government steps in to defend them. They use two main arguments: one is that American multinationals have to pay tax in the States; the other is that the USA are damaged by any such tax evasion abroad. As a matter of fact, no American administration—despite its belief in economic competition since the approval of the Sherman Act in 1890—has enacted any measures to prevent monopolies, typical cases of which were when AT&T merged with Time-Warner in 1994, the and the very recent Chrysler takeover by Fiat.

It seems that only Europe is serious about fighting tax evasion. In Tallinn (Estonia), on the 29th of September 2017, France, Germany, Spain and Italy jointly proposed to the European Commission that digital multinationals be liable to a "*web tax"*, either on profits or on proceeds of sales. Unfortunately, Europe is divided on this issue: while Austria, Bulgaria, Greece, Latvia, Slovenia, and maybe another nine countries agree, the Netherlands, Ireland, Luxemburg, Cyprus and Malta do not. Fiscal decisions relating to the European Union need to be unanimously approved, but one way to avoid the Tallinn proposal being rejected is to allow each country to levy a transitional web tax. Italy, where it is estimated that the amount on which digital multinationals do not pay tax runs into the billions, opted to introduce the transitional web tax on November 26th 2017 at a rate of 6% and the concept of stable organization on Massimo Muchetti's ("Presidente della Commissione Industria del Senato") plan. But On December 18, 2017 Francesco Boccia ("Presidente della Commissione Bilancio della Camera") proposed to reduce the tax to 3% and to revise the need for stable organization. This sort of controversy found solution in the "Legge di Bilancio" 2018 with the approval of a web tax at 3% starting from January1, 2019 and without any stable organization for firms making less than 3000 operation per year. This measure is expected to yield 114 million euro a year from 2019 (Economia-Ansa 2017). Banks and other financial institutions will be in charge of collecting the tax. Agricultural firms and the e-commerce (e.g. Amazon) will be exempted. The sharing economy working on digital platforms, like Uber and Airbnb, will be later on ruled. The ideal policy would be to adopt the same fiscal system all over Europe, however. To arrive at a common policy, the Commission's Vice President Pierre Moscovici proposed abolishing the need for unanimous votes on fiscal matters. Another plan would involve launching a "reinforced cooperation" by the end of 2018 or early in 2019, that would consist in taxing the country not taking part in the shared European web tax project.

The goal is very ambitious because, if a web tax could be levied on digital multinationals by all European countries, this could be *the first step on the way to a common fiscal policy regarding all multinationals, whatever they produce.* A European fiscal union operating together with national fiscal regimes would represent a fundamental step towards a deeper European Union.

5 Conclusions

This contribution on multinationals consists of three parts. The first discusses the part played by elasticity of demand in enabling multinationals to make profits. If consumers longed less for goods charged with meaning for their social prestige and self-esteem (be they meat, cars, digital products, or others), then multinationals would be compelled to change. The second part of the paper focuses on how multinationals produce with a view to profit alone. This is illustrated in the example of the meat multinationals, which profit as much as possible by lowering their production costs, exploiting animals and workers. But all multinationals abuse of their workers, paying them very badly and compelling them to work in environments and according to schedules that border on slavery. Moreover, all multinationals pollute the environment, grab land, and clear forests to grow larger and larger. Another good way to lower production costs is to avoid or elude taxation, and this is the subject of the third part of this paper. The proposal formulated during the Ecofin in Tallinn (September 2017) to levy a so-called 'web tax' on multinationals producing digital products is seen as a very important step towards reigning in the vast power of multinationals and their dangerous behavior.

Like all oligopolies, multinationals damage consumers by preventing competition, and cheat them by presenting their activities as having the benefit of reaching as many customers as possible and ensuring low prices. But their (relatively) low prices are achieved by means of very uncivilized methods and a lack of respect for people (in all fields), animals (in the food industry), and the ecosystems of developed and underdeveloped countries. The social costs of their severely "polluting" production methods and disregard for industrial relations are very high, and we all have to pay for them. Among the types of damage caused by multinationals there are also financial losses. With the exception of Bill Gates, who spends a good deal of Microsoft's gains on philanthropic initiatives, like a modern-day J.D. Rockefeller, all the other CEOs of multinationals financially damage the countries where they produce and sell their goods by not paying their taxes. In so doing, they subtract resources needed to finance public expenditure and investments, and social policies, and thus make it difficult to deal with inequalities.

In the light all these considerations, the present paper aims to emphasize the role of consumers and the importance of the new fiscal trend inaugurated with the web tax, in the hope that more conscientious consumers will change their purchasing habits, and more active countries will help to make Europe fiscally stronger.

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Realizing a New Social Market Economy in Europe in the Coming Years

Otto Hieronymi

> *The Union shall work for the sustainable development of Europe based on balanced economic growth, a* ***social market economy****, highly competitive and aiming at full employment and social progress, and with a high level of protection and improvement of the quality of the environment. . .It shall combat social exclusion and discrimination and shall promote social justice and protection. . .It shall promote economic, social and territorial cohesion, and solidarity among Member States. . .*
> ("Article 3: The Union's Objectives", Draft Constitutional Treaty, in Norman, Peter (*2003*): The Accidental Constitution. The Story of the European Convention, EuroComment, Brussels, pp. 352–353, emphasis added)

Abstract Powerful centrifugal forces of nationalism and protectionism are currently threatening the economic, social, and political achievements of Europe and the Western community, undermining the prospects for sustained growth, employment, productivity and social progress. They could reinforce rather than reverse the fateful trend of growing inequality of income and wealth within and among nations. The shortcomings of globalisation, such as the excessive role of volatile short-term finance, make it difficult to benefit from its advantages. Among the large spectrum of different models of market economy implemented in Europe since the 1940s, the "social market economy" has been by far the most successful in both economic and societal terms. Today many elements of the social market economy are incorporated in the tradition and policy "rulebooks" not only in Germany, its country of origin, but also in numerous other European countries, and the European Union itself. There have been two major distinct trends with respect to the model of the social market economy: (1) the original version developed and implemented by Ludwig Erhard that put the emphasis on growth and social progress, and (2) the one promoted by the "Ordo-liberals" with their emphasis on austerity and market fundamentalism. The

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conclusion of this chapter is that the European Union and its member countries should work together to develop a new social market economy for the years to come inspired by the original first version of the social market economy with emphasis on growth and social progress.

1 Introduction

The renewing of the economic and societal models at the national, European Western, and universal levels represents the most important challenge for theory and political practice in the years ahead. The subject of the 30th Mondragone International Seminar was highly topical because of the continued crisis and uncertainty in the world economy, the current confusion in economic and social theory and policy, the political tensions in Europe and in the United States and last but not least because of the unprecedented centrifugal forces in the Western Community. Thus, the present author argues that the time is ripe for creating a new economic and societal model that will be based on the original principles of the social market economy.

This chapter is divided into four main sections: (1) success and failure of economic and societal models and theories and the search for a new consensus in economic theories and policies; (2) the main features of the original model of the "social market economy"; (3) two trends and the main aspects of the "social market economy" currently relevant for Europe, the Western Community and the world economy; (4) the conditions for building a social market economy for the twenty first century.

2 The Success and Failure of Economic and Social Theories and Policies and the Search for a New Consensus

The achievements of Europe, the United States and Japan—the Western Community as a whole—have proven to be much more solid and far reaching than it was expected or hoped for at the start in the second half of the 1940s. These achievements were spectacular in each of the three principal convergent areas: politics and political order, the economy, and the domestic and collective security of each of the member countries.[1]

The transformation and changes have been probably the most profound and most visible in Europe. A decisive break with some of the most pernicious traditions of the

[1]See Hieronymi, Otto, Bensky, Daniela and Stoyanova, Teofana (2008): "Quale Ordine Politico Interno e Internazionale Futuro per l'Europe et per il Mondo?" in: La Politica, Festival della Modernità, Spirali, Milano, pp. 101–147.

European nations, which had brought decades and centuries of war and suffering to themselves and to the rest of the world, was and remains the single most important feature of this new reality.

2.1 *The Competing Models and Schools of Economic and Social Order*

The following were the main competing schools and models actually implemented at various times in Western European countries since the late 1940s: (1) the welfare state; (2) Keynesianism; (3) indicative planning; (4) monetarism; (5) post 1970s neo-liberalism (to be distinguished from the original concept of neo-liberalism that had been part of the theory of the social market economy) and (6) the social market economy.[2]

All six models were essentially variations of the market economy, with different degrees and types of government controls and responsibilities. Under all six systems governments play an active role—this was also true for monetarism, neo-liberalism and the social market economy and not only for the first three approaches listed above.

[2]From the literature on the social market economy see the following examples: Hieronymi, Otto (2002): "Wilhelm Röpke, the Social Market Economy and Today's Domestic and International Order", in Otto Hieronymi, Chiara Jasson and Alexandra Roversi, Editors: Colloque Wilhelm Röpke (1899–1966), The Relevance of His Teaching Today: Globalization and the Social Market Economy, HEI-Webster University, Cahiers HEI, Geneva; Hieronymi, Otto (2005): "The "Social Market Economy" and Globalisation: The Lessons from the European Model for Latin America", in Emilio Fontela Montes and Joaquin Guzmàn Cueva (Eds): Brasil y la Economia Social de Mercado, Cuadernos del Grupo de Alcantara, pp. 247–300; Hieronymi, Otto and Lo Cascio, Martino, Editors (2016): A New Social Market Economy for the 21st Century Emilio Fontela: Economist and Global Researcher, ARACNE Editrice, Roma; Lenel, Hans Otto and Others, (Editors) (1997): Soziale Marktwirtschaft, Anspruch und Wirklichkeit Seit Fünfzig Jahren, ORDO, Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft, Band 48, Lucius und Lucius, Stuttgart; Müller-Armack, Alfred (1946, 1990): Wirtschaftslenkung und Marktwirtschaft, Kastell Verlag, München; Müller-Armack, Alfred (1949): Diagnose unserer Gegenwart, C. Bertelsmann Verlag, Gütersloh; Müller-Armack, Alfred (1971): Auf dem Weg nach Europa, Erinnerungen und Ausblicke, Gemeintschaftsverlag Rainer Wunderlich, Tübingen und C.E. Poeschel, Stuttgart; Müller-Armack, Alfred (1974): Genealogie der Sozialen Marktwirtschaft, Frühschriften und weiterführende Konzepte, Verlag Paul Haupt, Bern; Posluschny, Myra (2006): Walter Eucken und Alfred Müller-Armack: Ein Vergleich ihrer Konzeptionen des Ordoliberalismus unde der Sozialen Marktwirtschaft, GRIN Verlag GmBH, Norderstedt; Röpke, Wilhelm (1950): Mass und Mitte, Eugen Rentsch Verlag, Erlenbach-Zürich; Röpke, Wilhelm (1951): "Austerity", reprinted in Röpke Wilhelm (1962): Wirrnis und Wahrheit, Eugen Rentsch, Erlenbach-Zürich; Röpke, Wilhelm (1958): Ein Jahrzehnt Sozialer Marktwirtschaft in Deutschland und Seine Lehre, Verlag für Politik und Wirtschaft, Köln-Marienburg; Schlecht, Otto (1990): Grundlagen und Perspektiven der Sozialen Marktwirtschaft, J.C.B. Mohr (Paul Siebeck), Tübingen; Wünsche, Horst Friedrich (2015): Ludwig Erhards Soziale Marktwirtschaft—Wissenschaftliche Grundlagen und politische Fehldeutungen, Lau Verlag, Reineck, München.

An important objective of the "common policies" at the European and the universal levels has been to influence or even shape the national models and policies. There is no doubt, however, that the "national models" have played an important role, and continue to play also today in shaping rules and policies at the European and global levels.

2.2 The Three Levels of Economic and Societal Order and Policies: National, European and Global

Since the second half of the 1940s three levels of rules and policy-making structures and models have been shaping the economic and monetary development of the European countries: (1) their own national "economic and societal" models; (2) the rules and structures developed in the process of European integration and the European Union in particular; (3) the "global economy" and the universal rules and institutions of "globalization".

The various aspects of these three levels have been at times conflicting and at times converging. Much of the academic and policy debate turns around the relative importance of each of these levels (and their respective hierarchy) and how the three levels can and should be adapted in order to better achieve national and global objectives.

The principal objective of the international economic and monetary organizations and of their rules and decisions was to create a favourable *international* economic order that would serve the interests of all member countries. The broad features as well as some of the specific details of this new international economic and monetary order had been defined in a complex dual process: political negotiations and inspiration from economic theory, new and classical.

In recent years level 2 (European Union) and level 3 (globalization) have received a growing emphasis, increasingly at the expense of level 1 (national model and policy-making). Although the autonomy of national economic and monetary policy making has been systematically diminishing ever since the end of World War II in all market economies—and not only in small countries but also in the large leading ones like the United States, Japan or Germany—the national models and the quality of national policies remain crucial in the positive or negative results at the national and global levels.

2.3 Internalization and Integration

The adoption of detailed, binding international rules on economic and monetary policy was one of the main innovations of the post-1945 international order. This trend, which started with the League of Nations, gained momentum with the

planning and the implementation of the so-called Bretton Woods institutions. Its scope and importance greatly increased with the Marshall Plan institutions (OEEC and EPU) and subsequently with the start and progress of European integration.[3]

The emphasis on rules related to international economic relations—trade and currencies—was based on the collapse of the international economic and monetary order in the 1930s and its disastrous economic and political consequences. Also, theories, concepts and policies related to international economics played a central role in designing the international economic and monetary organizations and their rules.

At the same time it was also evident that the state of the international economy was closely related to the conditions of the national economies, the national policies and the basic economic models adopted by the various countries. The fact that there is a close link between international economic and monetary policies and national economic "models" was one an assumption shared at by the architects of virtually all of the major international economic organizations. By and large this assumption has been proven correct over many years of practice.

The objectives, scopes and rules and functioning of the international economic organizations have evolved over time partly because of changing conditions in the national and world economy, and partly because of changing theories and policy objectives.

In this process international economic and monetary organizations have tried time and again, with greater or lesser success to influence and even bring about major changes in the "economic model" of their member countries.

2.4 The Main Features and the Crisis of Globalization

Globalization represents the broadening, deepening and widening of trends that had started in the post-war period. It is the continuation of a trend towards a gradual opening of national economies to competition from abroad. Thus, international economic relations and competition in general are the primary elements of the concept. Globalization, however, also has an important domestic dimension both in terms of the role of states and the functioning of markets.

[3]The thinkers who were responsible for the concept of the social market economy also played an important role in the development of the post-war liberal international economic order. This was especially true for Wilhelm Röpke and the other members of the so-called "Geneva school". See: Hieronymi, O. (Ed.). (1982). International order – A view from Geneva,. Geneva: IUHEI. Graduate Institute of International Relations; Hieronymi, O. (Ed.). (1987). Technology and international relations. London: Macmillan; Hieronymi, O., Bensky, D., & Stoyanova, T. (2008). Quale Ordine Politico Interno e Internazionale Futuro per l'Europe et per il Mondo? In La Politica, Festival della Modernità (pp. 101–147). Milano: Spirali; Slobodian, Q. (2018): The Globalists, the End of Empire and the Birth of Neoliberalism, Harvard University Press, Cambridge, Mass.

Two major factors gave a strong boost to this phenomenon: (1) the changes that led to the renewed emphasis on markets, private initiative and limiting the economic role of the state in the 1970s and 1980s, first in the United Kingdom and then in the United States, followed by the large majority of the OECD countries and parts of the developing world and (2) the collapse of the system of planned economy in the Soviet Union and its European satellites.

The principal aspects of globalization include the following:

1. Liberalization of markets (including labour markets) and in particular of international trade, as well as of payments and services (the liberalization of the movement of people—migration—across borders receives less emphasis.
2. Deregulation, i.e. the reduction or elimination of government regulations for individual sectors, products, etc. For many it also means reducing or even eliminating legislation to enforce competition.
3. Privatization and the withdrawal of government from all "economic activities". This also means the replacement of traditional "public services" by profit-motivated private companies.
4. The prohibition of all forms of government subsidies and "industrial policies".
5. Prohibition of government intervention in foreign exchange or financial markets.
6. A systematic effort to reduce "social expenses" and the rights of organized labour.

The greatest challenge for economists and even more for policy makers is: how to deal with the current important shortcomings of globalization[4] without destroying its undeniable positive features and the lasting stimulus for economic growth and well-being that result from international economic integration.[5]

Among the main concerns about globalization one can mention there is a need for correcting and rebalancing the various features and objectives of globalization (de-emphasizing the primacy of global finance,[6] correcting the prevailing "short-

[4]See Chapter 1 on "From 'Global Finance' to the Crisis of Globalization" in Hieronymi, Otto, Editor (2009b): Globalization and the Reform of the International Banking and Monetary System, Palgrave, Basingstoke, pp. 1–69 and Hieronymi, Otto (1998): "Agenda for a New Monetary Reform", in Futures, Vol. 30, No.8, pp. 769–781, Pergamon, Elsevier Science Ltd.

[5]"The first decades after World War II were marked by an expansion of free trade. This process was until the break in 1973/74, especially in Europe through in Europe associated with a massive expansion of the welfare state. The stabilization of incomes by social benefits facilitated the descent from economic protectionism and, combined with the general increase in wealth, reduced the resistance against the change of economic and social structures. Against these tendencies to civilize capitalism towards a decidedly social market economy, there have been strong counter-movements since the 1980s, especially in the United States … and in the United Kingdom. Ritter, Gerhard A. (2010), Der Sozialstaat. Enstehung und Entwicklung im internationalen Vergleich, Dritte, erweiterte Auflage, R. Oldenbourg Verlag, München p. 255.

[6]"The growing recognition in recent years of the shortcomings of the orthodoxy prevailing until 2008 by some their most vocal exponents and practitioners especially in central banks has been a major positive development. This radical shift of perception can be illustrated by the case of Martin Wolf, Chief Economics Commentator of the Financial Times." in Hieronymi, Otto (2016): "The

termism" and bringing back a more balanced approach to solidarity and competition), and the need to redefine the scope of government responsibilities vs. the market. Under globalization the scope of national government economic policies has become more and more restrained by explicit international agreements and by the interpretation of what is and what is not compatible with a properly functioning market economy. This rule and its implementation are at the heart of the perception of how "globalization" functions or ought to function. It is, of course, one of the principal sources of criticism of globalization: both from the side of "market fundamentalists" and from the enemies of the market economy.[7]

3 The Main Features of the Original Model of the Social Market Economy

The social market economy is a "rule-based" system, where the quality of both the laws and official decisions and of the institutions plays an important role for the economy as well as for the society as a whole. It has been widely recognized that "the European model of a Social Market Economy has been able to deliver high levels of prosperity, growth and social cohesion for the past 60 years in Western Europe and in many other countries in the world. For a long time, the Western world, and particularly the European Union, has been seen as a success story."[8]

The concept of the social market economy originated in Germany and played an essential role in the success of the post-war reconstruction of the German economy and society based on the principles of freedom and solidarity, democracy and respect for human rights. At the start the concept was far from uncontested. In the long run the social market economy also played an important role in the orientation of European integration. Ludwig Erhard was not only the "father of the social market economy (and of the Germany economic miracle) but also had a major role in the orientation of the efforts towards of European integration along liberal lines towards

Crisis of International Finance, the Eurozone and Economic Growth", in Rossi, Stefania A. and Malavasi, Roberto, Editors (2016): Financial Crisis, Bank Behaviour and Credit Crunch, Springer, New York, pp. 14–15.

[7]George Soros, one of the most famous and successful financial speculators of our time showed considerable contrition in the light of the near-meltdown of the world economy as a result of the 2008 crisis: "The prevailing paradigm cannot explain what is happening. The case for abandoning the prevailing paradigm is even stronger: The belief that markets tend towards equilibrium is directly responsible for the current turmoil; it encourages the regulators to abandon their responsibility and to rely on the market mechanism to correct its own excesses." Soros, George (2008): The New Paradigm for Financial Markets. The Credit Crisis of 2008 and What it Means, Public Affairs, New York, p. 102.

[8]In European People's Party (2009): The Social Market Economy in a globalised World, Congress Document adopted by the EPP Statutory Congress Bonn, 9–10 December 2009.

a common market, rather than on the model of government control and cartel agreements that was the blueprint of the European Coal and Steel Community.[9]

The main features of the original model of the Social market economy can be summed up in the following ten points:

1. The social market economy is a liberal economic and societal model—it is superior to the state-controlled models (socialism) both in terms of economic efficiency and political freedom.
2. However, the social market economy also requires appropriate government policies and in particular effective social policies.[10]
3. Thus, the 19th (Manchester) model as well as the ultraliberal ("libertarian") approach advocated in the latter part of the 20th century was rejected by both the original authors and practitioners of the social market economy.
4. Competition is an important dimension of the market economy. However, "social Darwinism" is rejected in the original model of the social market economy. Social policies have multiple objectives: to support the losers in the competitive process, encourage political acceptance of the market mechanism and fulfil common tasks that cannot be dealt with through private initiative ("public service").
5. The price mechanism is an essential part of the market economy. One of the tasks of government policies is to assure the appropriate working of the price system and to handle necessary price controls and price interventions in the least intrusive way.
6. The social market economy is not only an economic but also a political and societal model. One of its most important features is the recognition that there has to be an informed and open debate about the division of tasks between governments and markets and the private economy. The encouragement of small and medium-sized enterprises is necessary for political and economic reasons.
7. Monetary stability is a key condition for the success of the social market economy. Inflation is perceived as a threat to both economic efficiency and social stability. Also, sound fiscal policies are important both for political and economic reasons. Systematic "austerity policies" are however the sign of a failure of government policies and lead to a dangerous "vicious circle" of stagnating or falling living standards and pressures on output and productivity.
8. The overall objectives of the social market economy are sustained growth and social and economic progress for all. All should benefit from expanding output:

[9]See Müller-Armack, Alfred (1971): Auf dem Weg nach Europa, Erinnerungen und Ausblicke, Gemeintschaftsverlag Rainer Wunderlich, Tübingen und C.E. Poeschel, Stuttgart.

[10]By the beginning of the twenty first century, when the liberal market economy had triumphed beyond all previous hopes, points (1) and (2) were among the key elements of the social market economy that came to be most systematically forgotten and denied in our globalized world and world economy. Hieronymi, Otto (2002): "Wilhelm Röpke, the Social Market Economy and Today's Domestic and International order" in Otto Hieronymi, Chiara Jasson, Alexandra Roversi (editors): Colloque Wilhelm Röpke: The Relevance of His Teaching Today. HEI-Webster University, Geneva, p. 11.

a constant widening in income and wealth among the few and the lower classes is fundamentally wrong and is a sign of the malfunctioning of the market economy. The "proletarization" of large portions of the population (today's "marginalization") contributed to the rise of communism and national-socialism. The social market economy was designed to avoid repetition of similar developments.

9. The social market economy is open to the world and exports and imports increase both the welfare of the community and the efficiency of the national economy. However, cut-throat competition is not any more acceptable in foreign trade than it is among domestic companies.
10. European and global economic integration are welcome but there is a danger in excessive bureaucratization of international organizations. National policy-makers need sufficient room for responsible policies that take into account the specific conditions they have to deal with. The importance of local conditions and of autonomy has to be recognized within a federalist framework.

The validity of the basic concept of the social market economy is not limited to Europe and even less to the German speaking countries on the Continent. The international recognition of the theory and practice of the social market economy compared with Keynesianism can be illustrated with a quote from the famous British economist and biographer of Keynes Lord Skidelsky: "Those who value the market as an institution must be concerned to keep its support system in good repair. The state's role is essentially threefold: (a) to create and maintain an appropriate legal framework for market exchange; (b) to limit and supplement the market where necessary; and (c) to ensure that the market is politically acceptable. A social market economy is, above all, one which is embedded in social arrangements regarded as "fair"...The German model had the great advantage of concentrating attention on the legal, social, and technical conditions required to make a market economy work well. Such clarity was never achieved in Britain, where old-fashioned capitalism, socialism, the Welfare State, and Keynesian macroeconomics were wrapped in an ill- assorted package labelled the 'mixed economy'. The consensus which sustained this mixture proved to be highly vulnerable, because it concealed a basic ambivalence about the justification of markets, and indeed about the private enterprise system itself."[11]

[11]Skidelsky, Robert (1989): The Social Market Economy, Social Market Foundation Ltd., Paper no. 1, London, pp. 3 and 6.

4 Two Trends and the Main Currently Relevant Aspects of the Social Market Economy

The overall conclusion of the present chapter is that the experience of the post-war model of the social market economy provides the best starting point in the search for a new common economic and societal model for the European and Western countries as a whole. However, over the years one could observe a growing rigidity in the academic interpretation of the theory and practice of the social market economy. Both the critics and the defenders of the social market economy have tended to reduce the concept to the so-called "ORDO liberalism" and the "Freiburg school".

The issues on which this narrowing of the focus of the social market economy has been particularly evident included the "social dimension", the role of the State and the international dimension. Another issue was the issue of "bigness" and the concentration of private economic power, this time not through cartels, but through mergers and acquisitions (buying out the competition in the name of "greater efficiency")."

The three names most closely associated with the theory and implementation of the social market economy were Ludwig Erhard, for many years the Minister of Economy in the cabinet of Chancellor Konrad Adenauer, and subsequently the second chancellor of the Federal Republic, Professor Wilhelm Röpke an economist and philosopher who had escaped from Hitler's Germany and lived in exile in Geneva, and Alfred Müller-Armack, for many years the closest collaborator of Erhard in the Ministry of Economy. Incidentally, Müller-Armack is generally credited with having coined the term "social market economy".

4.1 A Flexible, Rule-Based Order

The social market economy is a rule-based system. Yet, in many respects it has proven to be more flexible and adaptable than some of the competing models.

The principal areas where the lessons of the social market economy may prove to be particularly helpful today and in the future include the following: (1) finding the balance in the division of tasks between private initiative and markets and government responsibilities; (2) balance between competition and social justice and support; (3) dealing with monopolies and the abuse of economic power; (4) balance between diversity and convergence; (5) stimulating sustained growth and social progress[12]; and (6) balance between national models and rules and European and global institutions and structures.

[12]"The democratic welfare state is not the finished product of history in the last 150 years. Much more, like the parallel phenomena of the nation state, the constitutional state and the constitutional state, it is necessarily unfinished. Its survival will depend on its ability to adapt to the changing economy, society and politics and to withstand the tension between freedom and social security.

The theory of the social market economy does not lend itself to the kind of definitions and presentations that gave such a powerful boost to the word-wide triumph of Keynesianism in academic and policy circles after the death of the master.

One of the major strengths of the social market economy is the linking of different levels of economic and social policy and the "macro" and the "micro" levels of the economy. For a didactic approach this is a handicap as is the lack of the analytical tools developed in the form of the aggregates of the national accounts based on Keynesian theory. (Richard Stone, an eminent disciple of Keynes, played an important role in this crucial development).

4.2 The Original and the ORDO Version of the Social Market Economy

One can distinguish two main currents at the level of both theory and practical implementation:

1. The first and original and most important version is the one associated with the names of Erhard, Röpke[13] and Müller-Armack. It was also the one that corresponded to the actual policies implemented by Erhard. This version puts a greater emphasis on economic growth combined with social progress and helping the "losers" in the competitive market process. Röpke and Erhard both insisted that the social market economy represented a clear break with 19th century liberalism and laissez-faire. Also, it is important to mention that under this heading economic growth and social progress were more important than "austerity": "Erhard did not seek to implement a theoretical ideal of a market economy, but pursued a successful policy that upheld the values of human dignity and personal autonomy. He carried out this mission and declared that the freedom of modern economic activity and social security require a material well-being in which all can share. He stated time and again that the basic objectives and foundations of a liberal policy are: prosperity for all (Wohlstand für Alle), full employment, performance-based pay, price stability and stable and sustained economic development."[14]
2. The second current is linked to the so-called "ORDO-Liberalism". The principal names to remember here are Friedrich Hayek (who rejected the very word

Ritter, Gerhard A. (2010), Der Sozialstaat. Enstehung und Entwicklun im internationalen Vergleich, Dritte, erweiterte Auflage, R. Oldenbourg Verlag, München p. 220" (1989 edition).

[13]In many respects the earliest and most influential book for the subsequent development of the model of the social market economy was the first volume of his famous trilogy written by Wilhelm Röpke (1942) under the title Die Gesellschaftskrisis der Gegenwart. Der Dritte Weg (The Societal Crisis of Our Time. The Third Way) Eugen Rentsch Verlag, Erlenbach-Zürich.

[14]Wünsche, Horst Friedrich (2015): Ludwig Erhards Soziale Marktwirtschaft – Wissenschaftlich Grundlagen und politische Fehldeutungen, Lau Verlag, Reineck, München p. 338.

"social"), Ludwig von Mises, Walther Eucken and their disciples. The ultra-liberals who gained ground since the governments of Mrs. Thatcher in Britain and of Ronald Reagan in the United States, and who basically reject the concept of the social market economy belong to the followers of Hayek and von Mises.

One can find many aspects of this concept in the rules incorporated into the framework and functioning not only of the German or Swiss Governments, but most importantly also of the European Union. There are elements in the EU "rule-book" and practice that reflect the first version, others are more directly inspired by the second ones. These aspects include the belief in the virtue of "austerity" and rigid respect of "rules" versus policies. It should be emphasized at this point that the version of the social market economy that most people outside Germany have come to experience is this second version.

When referring to the "original concept of the social market economy" in the framework of the present article, it is the concepts respectively the policies developed by Röpke, Erhard and Müller-Armack that we have in mind.

While there have been important common features in the thinking of Walter Eucken on the one hand and Röpke, Erhard, and Müller-Armack, on the other hand, the latter three did not belong to the Freiburg School or the Ordo tradition.[15] They were all "economic liberals" in the sense that they recognized the necessity of building and maintaining market economy with a properly working price system and private property and economic freedom. At the same time, one of the common traits of their thinking was the rejection of the ultra-liberal 19th century version of capitalism.

5 Conditions for Building A New Social Market Economy

Europe and the Western Community as a whole face the most severe crisis since the 1950s. The tsunami-like centrifugal forces are threatening to tear apart the European and Western Communities and are undermining the very foundations of the highly successful post-war liberal and democratic international economic and political order.

[15]According to a recent comparison of Müller-Armack's and Eucken's theories: "Eucken's ordo-liberalism and the social market economy of Müller-Armack are by no means the same two interchangeable concepts for one and the same theory. Rather, it is about two separate models. . .Muller-Armack argues that Eucken does not sufficiently consider social and sociological problems . . . According to Muller-Armack, the market economy requires additions in two directions. On the one hand through social policy, which brings the ethical values of social justice and social security. . ., and on the other by a societal policy that integrates fundamental common values (including individual freedom) that make competition and the market economy politically acceptable." Posluschny, Myra (2006): Walter Eucken und Alfred Müller-Armack: Ein Vergleich ihrer Konzeptionen des Ordoliberalismus unde der Sozialen Marktwirtschaft, GRIN Verlag GmBH, Norderstedt.

A common feature of these problems and the solutions being sought is that they all have to do one way or another with the responsibilities (and power) and policies of governments (and of their international tools, i.e. international organizations and international law) and with human freedom, security and prosperity (and with the threats to economic prosperity and to social justice and progress).

The "solution" or rather the "solutions" at most levels require a combination of innovation and reparation and confirmation of what is working and the replacement of what is not working (or is outright harmful), rather than a sweeping series of revolutions. What we need is a firm but balanced approach that may have to include the necessary dose of trial and error: one may call it "radical centrism".

This requires reducing the relative weight of short-term financial decisions in the economy; correcting the "austerity-inspired" approach to fiscal balance and the debt problem; bolstering and reforming the international monetary system of which the euro and the dollar will remain the main pillars; improving the respect of social standards in the so-called developing world; combating the rise of nationalism and political extremism; strengthening solidarity between and within national economies.[16]

5.1 Austerity Is Not the Solution

The principal conditions for the building a new social market economy in Europe and in the Western Community include economic, political and ethical issues at the micro, macro and global levels.

As stated previously it is in the original concept of the social market economy that emphasized "prosperity for all" rather than "austerity" (without trying make a carbon copy that would be contrary to its very spirit and would ignore the changed circumstances) that we can find inspiration in the search for a new balanced economic and societal order. Part of the conclusions of the author is that many of

[16]Following the collapse of the communist regimes in 1989–1990 in Eastern Europe, the logical choice for the model for reconstruction and regime change would have been the social market economy. Yet, the only leader to have chosen this path was Prime Minister Jozsef Antall of Hungary. His government received no encouragement whatsoever from their foreign partners (including the Federal Republic of Germany) the major international organizations. See: Hieronymi, O. (1990). A 'Grand Design' for Balanced Growth, International Economic Integration and the Development of a Modern Social Market Economy in Hungary. In O. Hieronymi (Ed.), Economic policies for the new Hungary (pp. 10–18). Columbus, OH: Battelle Press ; Hieronymi, O. (2001). Du Communisme à l'Economie du Marché Sociale. Du Socialisme à l'Economie de Marché, sous la direction d'Andras November, Nouveaux Cahiers de l'IUD, No. 12, Genève; Hieronymi, O. (July 2013). Regime Change in Hungary, 1990–1994, the Economic Policies of the Antall Government, Hungarian Review, Budapest, pp. 36–47; Hieronymi, O. (1996). International capital markets and the financial integration of the transition countries. Unpublished Manuscript; Hieronymi, O. (2000). The main features and the current relevance of the European Model of the Social Market Economy. Unpublished manuscript.

the current interpretations of the concept and the tradition of the social market economy are more harmful than useful in pursuing this objective.[17]

The first condition is to redefine the fundamental principles and goals of the future economic and societal model: sustained economic growth together with social progress and the protection of the environment; the full use of current and future human resources; free and liberal economy without the recent excesses of ultraliberal ideology; reversing the growing inequality within and between the national economies; a new concept of competition at the national and internal levels; balance between the responsibilities of government and the private sector; a new federalism that will allow an efficient interaction between the national, the European and the global levels.

It is important to recognize and redefine the link between market efficiency and equity and social justice. Under this heading the single most important task is to reverse the pernicious trend of income and wealth concentration in fewer and fewer hands. This is certainly not a call for replacing the market economy with socialism which not only failed everywhere in terms of economic efficiency and wealth creation: it was also a failure in terms of creating sound social policies.

There is a need both to strengthen and to modernize social policies.[18] Well-designed and well-implemented social policies are among the principal sources of an efficient and dynamic economy. They contribute to the development of a healthy, well-trained work force and stimulate entrepreneurship across all social groups and classes. Importantly, they are also an essential condition for people to accept and adjust to change and not see them as an existential threats for themselves and for their children.

The philosophy and practice of the social market economy were among the factors that made competition and the risks of being on the loser side (at least temporarily) politically acceptable to the so-called working classes. The concept and practice of "labour peace" (Arbeitsfrieden, la paix du travail) did not mean the absence of potential tensions and disagreements between employers and unions. It provided them, however, with a shared view that employers and owners, on the one hand, and wage earners, on the other hand, had a common interest in efficiency and growth. Thus, it was also an important factor in raising productivity and in job creation.

The key developments that have marked the evolution of the national economies and of the European and world economies in recent decades, and are likely to have a

[17]The mistaking of austerity for stability can be the principal obstacle to economic growth, the solution of the debt problem and the realization of a successful social market economy, See: Hieronymi, O., & Stephanou (Eds.). (2013). International debt – Economic, financial, monetary, political and regulatory aspects. Basingstoke: Palgrave; Blyth, M. (2013). Austerity. The history of a dangerous idea. Oxford: Oxford University Press.

[18]In the strategy for growth adopted by the European Union the social dimension plays an important role. The Pillar of Social Rights is about delivering new and more effective rights for citizens. It builds upon 20 key principles, structured around three categories: (1) Equal opportunities and access to the labour market (2) Fair working conditions and (3) Social protection and inclusion.

continued role in the policy debate and practice, include globalization, information-related technological change, the relentless widening of the gap between the "successful" and the "less successful or outright losers" and the excessive weight of short-term finance on the real economy. These developments, directly or indirectly, have contributed to the ideology that "social policies" that aim to ease the burden of the consequences of these trends should not be considered as "anti-market", "unnecessary costs", but rather, if well designed and implemented as "necessary costs", cost that are indispensable for sustained growth and for the proper functioning of a liberal (social) market economy.

5.2 The European Union, Subsidiarity and Solidarity

Today there is a tendency to visualize the economic and social policy debate and conflicts within the European Union as the result of unbridgeable differences between the traditions of the "South" and the "North" as if economic policies were the results of geographic and ethnic factors. This approach is confusing and misleading in many respects. Its adoption and spreading to the highest levels of decision-makers (not to mention real or pseudo scholars) can have severe consequences. Although many German politicians and economists believe that the "social market economy" is not an "export product", this is an expression of intellectual nationalism. Helping to build a successful "social market economy" across Europe—with the emphasis on growth and social progress, rather than on just "discipline" and austerity—is also the interest of Germany.

One of the challenges of our time is to find a balanced approach between (1) common policies, at the European and global levels and (2) policies that take into account local and national policies. This is a requirement not only in Italy but also in Germany or France: "subsidiarity" is a central feature of this model which does or should allow keeping important policy functions and responsibilities at the national and provincial levels, including the fiscal domain. This is well illustrated by importance of the German "Länder" and of the Swiss "Cantons" in shaping in particular a local competitive business friendly environment (the famous "Rahmenbedingungen")

5.3 GDP Is Not Enough: The Importance of Qualitative Growth

The quality of life and the need to respect the humane dimension of technology, industrial production, and economic activity in general, have been among the important aspects of the concept of the social market economy developed by Wilhelm Röpke as early as the1940s and 1950s. At the time—just as today—this

was considered to be non-conventional economics that could be ignored by policy makers according to both Keynesians in the 1950s and 1960s and ardent monetarists and market fundamentalists in later years. However, Röpke's ideas remain highly relevant also for the new version of the social market economy to be implemented in the twenty-first century. (See Hieronymi 1987; Röpke 1942, 1950.)

In the 1980s the Swiss government created a working group on "qualitative growth" in order to give more substance to the issue of managing the environment in its legislative program. One of the problems raised in the working group was the difficulty to compare the by then traditional measures of GDP and its components with the natural-science based indicators used in the discussions on the protection of the environment. The group recognized the problem lack of an effective cost-benefit approach to deal with environmental quality and the benefits of environmental protection that would be as transparent and easy to deal with as the Keynes-Stone national account system. Today this is still a major problem both for analysis and policy alternatives and for public debate in general. Yet, mainstream economists and environmentalists have been slow to recognize the need to find a solution for this problem.

The truth of the statement "GDP is not enough" has been only gradually accepted. The current search for finding an adequate solution can be illustrated by the work carried out in the framework of the OECD under the awkward-sounding title "advancing research on well-being metrics beyond GDP". (The three most famous names associated with this on-going work are Joseph E. Stiglitz, Amartya Sen and Jean-Paul Fitoussi). The latest report (November 2018) recognizes the importance of the search for new "quantitative-qualitative" tools that are robust and user-friendly: "There is no simple way of representing every aspect of well-being in a single number in the way GDP describes market economic output... We need to move beyond 'GDP'... Different metrics...could have shown that the consequences of the recession (2008–2010) were much deeper than GDP statistics indicated, and governments might have responded more strongly to mitigate the negative impacts of the crisis."[19]

5.4 The Euro and International Monetary Order

For many years important elements of the social market economy have been present in European economic and social policy making. They have thus contributed to the unprecedented achievements of the European countries in terms of living standards and social standards. The importance of the framework and tradition of the social market economy has been more systematically recognized by political leaders than

[19]OECD (2018), *Beyond GDP: Measuring what counts for economic and social performance*, OECD Publishing, Paris—https://doi.org/10.1787/9789264307292-en

by the economics profession. This was true both at the national level and the level of the European Union.

Upholding the euro is an essential condition for the successful implementation of the social market economy at the European level. This was demonstrated by the European Central Bank and its President Draghi who had the courage to go beyond the narrowly defined initial (Bundesbank-inspired) mandate of the ECB. Chancellor Helmut Kohl was probably the most important advocate and architect of the European Monetary Union (EMU). He also belonged to those who implicitly or explicitly followed the Erhard, Müller-Armack, Röpke tradition of a social market economy open towards the world.

On both accounts he differed significantly from the negative Bundesbank-ORDO view of European integration and the common currency: "Within the framework of consensus and co-operation Kohl found himself operating with two loose but discernible coalitions of actors in constructing a negotiating strategy for EMU (European Monetary Union)—which can be characterized as the 'security' coalition and the ordo-liberal coalition. . .What united the security coalition was the belief that EMU was centrally about binding Germany into Europe. EMU was perceived as at the heart an historic and political issue of making European unification irreversible. . .The Bundesbank's. . .officials harboured a deep-seated caution about entering and discharging external commitments like the EMU."[20] Today the importance of the euro for the success (and even survival) of the European project, and hence of the social market economy, is recognized by some American economists who in the past tended to belong in the camp of the euro-sceptics.[21]

For many years the present writer has argued that the "euro is not enough" and that one of its greatest shortcomings was that it by-passed the issue of the absence of a stable rule-based Western or global international monetary system: "One of the principal conditions to assure the long-term development and success of the liberal international economic and political order is the return to a stable, equitable and rule-based international monetary order."[22]

In an earlier article (the first version of which had been published in Japanese) I argued in favour of an "expanded EMS: "The goal is not that the United States and Japan should 'join' the EMS or the European Monetary Union as such, but that they should negotiate with the European Union a monetary system that will have similar objectives and similar rules to those of the original EMS."[23]

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[20]Dyson, Kenneth and Featherstone, Kevin (1999): The Road to Maastricht, Negotiating Economic and Monetary Union, Oxford University Press, Oxford, pp. 261–262.

[21]"This book has shown that the euro can be saved, should be saved in a way that creates the shared prosperity and solidarity that was part of the promise of the euro." Stiglitz, Joseph E. (2018): The Euro. How a Common Currency Threatens the Future of Europe. With a New Section on Brexit, W.W. Norton & Co., New York, p. 325.

[22]Hieronymi, Otto (October 2009a): "Rebuilding the International Monetary Order: the Responsibility of Europe, Japan and the United States", Revista de Economia Mundial, Madrid, No. 29, pp. 197–226, p. 197.

[23]Hieronymi, Otto (1995) "The Case for an 'Extended EMS': A New International Monetary Order to be Built by Europe, Japan and the United States", in SZABO-PELSOECZY, Miklos (Editor):

A similar preoccupation with international monetary instability was expressed by the Japanese central banker Toyoo Gyothen, although, in good Japanese fashion he stopped short of suggesting that Japan should take the initiative towards a new system: "...Japan, even more than the United States, needs a system of multilateral rules rather than ad hoc, bilateral negotiations under mutual threats and accusations."[24] It is paradoxical that several decades later it is an economist associated with the ultra-libertarian Cato Institute who comes to suggest that President Trump, the proven enemy of all forms of multilateral cooperation should take the initiative to create a new rule-based international monetary system.[25]

6 Conclusion

This chapter on a new social market economy for the twenty first century, may be concluded with a reference to an article written in 1978 ago on the occasion of the 50th anniversary of the Marshall Plan and of the start of European integration. The article called for a new approach to domestic and international monetary reform for the following main reasons: (1) the increasingly dogmatic character of dominant monetary and financial theories and policies; (2) we are in uncharted waters: the world has changed profoundly since the 1970s (3) the deflationary bias of the dominant doctrine and the danger of a protectionist-interventionist backlash. (See Hieronymi 1998)

The article did not offer set solutions for all these issues. Its conclusion was, however, that without such a debate and a consensus on a balanced new approach, there was a real threat of a backlash, the threat of losing the advantages of liberalization and globalization, and of a return to increased monetary and economic nationalism[26] and excessive government intervention and control. Unfortunately some of this analysis has proven to be correct.

Since then we have seen the 2008 world financial and monetary crisis, BREXIT, Boris Johnson and President Trump and their attempts to destroy the post-war international order through protectionism, xenophobia and nationalism, Viktor Orban whose illiberal democracy aims at undermining the values and traditions of the free world. All this, however, should not serve as an excuse for pessimism and

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The Global Monetary System After the Fall of the Soviet Empire, (In Memoriam Robert Triffin—1911–1993, Sixth Conference of the Robert Triffin-Sziràk Foundation, Sziràk, 1993), Averbury, Aldershot, 1995, p. 63.

[24]Toyoo Gyothen in Volcker, Paul and Gyothen, Toyoo (1992) *Changing Fortunes: The World's Money and the Threat to American Leadership*, Times Books, New York, 1992, p. 66.

[25]"We have not had a rule-based international monetary system since President Nixon ended the Bretton Woods Agreement in August 1991. Today there are compelling reasons—political, economic and strategic—for President Trump to initiate a new international monetary system." Shelton, Judy (2018): "The Case for a New International Monetary System", in Dorn, James A., Editor (2018): Monetary Policy in an Uncertain World. Ten Years After the Crisis. Cato Institute, Washington, DC, p. 291.

[26]On the nature and risks of economic and monetary nationalism see Hieronymi (1980).

inaction about building a new social market economy in the years ahead in Europe and across the Western Community. The enemies of the liberal domestic and international order are far from having earned a final victory. We should rather remember and seek inspiration in the lessons of how the world had been saved by democracy, the courage and hard work of previous generations and how the corrupt and authoritarian regimes built by earlier strong men have disintegrated under their own injustice and intolerance. (On democracy and peace see Huntley 1980, 2001, 2006.)

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