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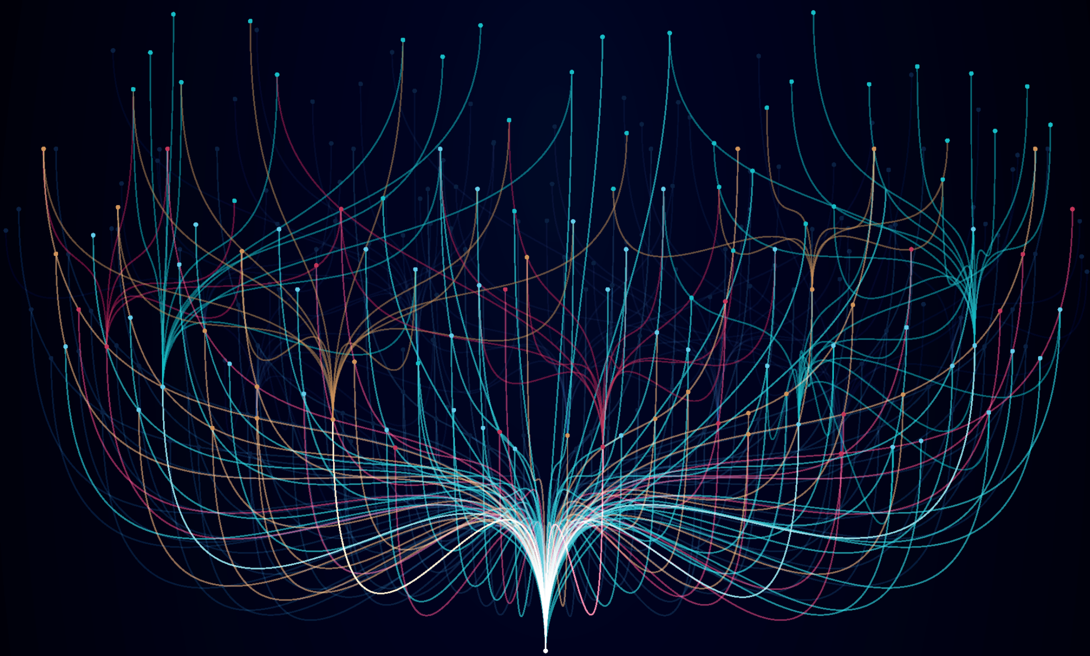

Common Market as a Common Commitment

Letters to the New EU Leadership 2019-2024

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Introduction

Europe has its own way of life. Different from that of many other countries. Every five years, a new EU government is formed and with the help of national bodies has the goal of sustaining and developing this idea. The EU leadership has a great role to play in fostering human development, sustainable growth and decreasing inequalities in Europe. Five years ago, we thought about the aftermath of the financial crisis, the eurozone was in disarray and there was little hope in the European project. Today, five years later, employment has risen to record highs and overall unemployment is low, but the undertaking still remains under threat.

Geopolitical tensions are more apparent after the Russian intervention in Ukraine, the US and China are at trade war, and since 2016 the European Union has been separated from the United Kingdom, which it should divorce in the coming months. 10 years on from the financial crisis, we can see that the process of economic convergence has slowed down or stopped in some regions of the euro area.

The May 2019 European elections with their increased voter turnout showed that citizens cared about Europe. At the same time, however, there are substantial differences of opinion about how to move forward. The European Parliament elected Ursula von der Leyen the next President of the European Commission with a slim margin of 9 votes, just slightly above the absolute majority of 374 she needed to be elected. Von der Leyen had the declared backing of the three mainstream, pro-EU groups – the centre-right European People's Party, the Progressive Alliance of Socialists & Democrats (S&D) and the centre-liberal Renew Europe group. Due to a split in the S&D group, she needed votes from Polish conservatives from the Law & Justice party and Italy's 5-Star Movement.

A couple of months ago, we started this internal discussion at the Polish Economic Institute and looking for what leading institutions in Europe thought about this. One of our recent papers, 'A Union of Nations 2.0', presents how Poland would see the changes in the institutions in the years to come, from the fight against tax havens to creating a European DARPA-like agency (Arak, Flis, Kutwa 2018).

We ended up creating eleven letters on specific subjects to the new Commissioners responsible for taxation, digital affairs, customs or the European Social Pillar. Not being part of the Eurogroup, Poland has a unique chance to be the voice of the minority stakeholders in the EU. Non-euro area Member States constitute just one-fifth of the EU's population or economy if the UK exits, and with no accession to the economic and monetary union in sight.

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We have not attempted to paint a complete picture. We only focused on those areas where we have expertise, bearing in mind our economic policy background. We did not always agree and these letters to the Commission, like all PEI publications, represent the views of their respective authors alone. However, they all share one objective: to provide concrete policy suggestions to the incoming leaders on how to deal with the challenges as we understand them and how, from our Central European perspective, they might help develop this part of the EU.

All chapters follow a common format. What the current state of affairs is, the presentation of the main issues concerning the specific section and what we believe the key challenges are for the next five years. Finally, we recommend some areas of intervention which in the authors' opinions could be the steps for policymakers to pursue. We take into account the constraints commissioners face, but some of the proposal might seem bold.

Each part could be read separately. But the new President of the Commission has to make her own decisions which areas are the most important to her.

Neither do we recommend any fixes to the EU as a whole. This is to be decided by all the governments forming part of the European Council. Strategic decisions such as tax harmonisation or further enlargement should be discussed by this group of decision makers.

> We believe that a shared purpose of the EU is trade, not at the top of the agenda in the last years.

However, we believe that a shared purpose of the EU is trade, not at the top of the agenda in the last years. The common currency, the euro, is seen as the most important economic project in the EU, but it is by no means comparable to the single market, a common commitment of everybody to play by the same rules and abide EU-wide regulations. The Commission needs to step up its game. Economic sovereignty, or the capability to pursue its own economic objectives, requires the EU to exercise power in a bipartisan way. This is a challenge for a union of sovereign states, but experience has shown that the Commission can pursue policies that are not always in favour of the biggest countries in the bloc.

The EU's 500m citizens live in a single economic zone much like America, with nothing to impede the free movement of goods, services, people and capital, but it varies widely – the EU Member States trade roughly half as much with each other as the US states. All the EU countries, with the exception of the UK and Ireland, trade more with each other than with the outside world.

We see the current trade war and protectionist measures within the EU as threats to the European project (Semeniuk, 2019). Without a true commitment to a freedom of business and trade, we will not be able to talk about further integration ("The Economist", 2019a). Jacques Delors, a former head of the European Commission who championed closer integration, rightly pointed out that 'nobody can fall in love with the single market' (CVCE, 2003). On average, each European country regulates the workings of nearly 200 professions, making it needlessly tricky for Europeans to move to where the jobs are ("The Economist", 2019b).

Abolishing barriers to trade in services is crucial. What stops services from moving across borders is how they are regulated by different countries. Some of that regulation goes back to medieval guilds. Tackling this kind of de facto protectionism is essential if the single market is to keep pace with Europe's ever more service-led business landscape. The single market disappeared off the agenda for several years, we want it back. Applying brick-and-mortar rules to a digital economy is a dead end and not a scenario of EU renaissance (European Commission, 2012).

We have a European tax gap. The EU Member States lost EUR 137 bn in value added tax (VAT) revenues in 2017, according to a study by the European Commission (European Commission, 2019). This is almost equivalent to the annual EU budget, as stated by the Prime Minister of Poland in a recent letter to Ms Ursula von der Leyen. The so-called 'VAT gap' is a real threat that Poland has managed to combat. Moreover, shifting profits by multinational firms to tax havens is a growing problem. Researchers from the University of California, Berkeley, and the University of Copenhagen estimate that more than $650 billion of multinational profits are shifted to tax havens each year, and 35% of the shifted profits come from EU non-haven Member States. Countries such as Germany, France, Hungary and the United Kingdom lose over 20% of their corporate income tax revenue due to this practice. Surprisingly, most of the profits shifted out of the EU non-haven countries are shifted to the EU tax havens, primarily Ireland, Luxembourg and the Netherlands (Torslov, Wier, Zucman 2019). This matter requires urgent agreement and action at the EU level. The VAT gap, profit shifting and the overall illegal tax evasion range between EUR 750bn and EUR 900bn (Kelly, 2019). These are additional sources of developmental aid and cohesion funds for the perspective of 2020–2027.

Climate change is not a distant challenge. It is visible, it is here and it requires huge efforts from all, but at the same time support in some regions. Europe has already taken a leading role, but no one should be left behind to deal with the issues of energy transformation alone. The EU needs to provide for a just energy transformation. The weakest and poorest should not pay for the years of industrial production in the West that accelerated the surge in temperatures.

Data protection and the digital sphere is one of the places where Europe keeps innovating. Not in the creation of IT hegemons, but in ways to regulate them. We export our privacy policies across the globe, being a digital champion that can regulate multinational companies that are in many ways the strongest forces in the world.

We need to be bold but also think about all stakeholders in the European dream. Europe is a lifestyle superpower and has enough economic might to remain one in the coming years.

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1. Competition

By Piotr Semeniuk

STATE OF AFFAIRS

The past few years have increased the significance and recognition of the Directorate-General for Competition (DG COMP). Cases brought against Google for alleged abuse of dominance and challenges of Member States' tax exemption policies on the basis of state aid rules have shown that DG COMP has immense executive power. This power, if wisely used, can further economic interests of EU consumers and of the Union's citizens as a whole. DG COMP has not only become an active supervisor of the digital economy, prosecutor of tax avoidance practices, but it has also successfully persecuted cartels, from truck producers to the banking sector.

The Commission sees that DG COMP's enforcement of competition rules sometimes significantly outperforms enforcement by national competition authorities (NCAs). At the end of 2018, this led to the enactment of a directive aimed to 'empower the competition authorities of the Member States to be more effective enforcers'. While Directive (EU) 2019/1 attempts to regulate the operational independence of NCAs, it also refers to a need to secure NCAs' 'adequate human and financial resources'.

DG COMP also has to grapple with the changing paradigm of global trade and industrial policy. Growing protectionism and trade battles between economic blocs might reduce global economic efficiency, but they are a fact and the new reality one cannot ignore. Amid controversies and pressure, the Commission blocked the merger between Siemens and Alstom, Europe's largest suppliers in the rail market. This triggered governments' reaction: the German and French ministers tabled a 'Manifesto for a European industrial policy fit for the 21st Century' (Bundesministerium für Wirtschaft und Energie, Ministère de l'Économie et des Finances, 2019). The Franco–German proposal calls for updating the current merger guidelines 'to take greater account of competition at the global level' and introducing the Council's right to override the Commission's merger decisions. This proposal was criticised by many competition economists and lawyers arguing, among other things, that 'improving European competition law should not mean abandoning tried and tested sound legal and economic analysis' (Turner et al., 2019).

> DG COMP seemed to lose interest in one of its primary objectives: ensuring market access within the Union and reducing private market barriers for companies in different Member States.

Meanwhile, DG COMP seemed to lose interest in one of its primary objectives, at least the primary objective during the Commission's incipient years: ensuring market access within the Union and reducing private market barriers for companies in different Member States. As DG COMP stands firmly on the consumer welfare paradigm (although this paradigm is slowly cracking), the Directorate seems to initiate fewer of the so-called exclusionary abuse cases (at the expense of the so-called exploitative abuse cases). Today, a case such as the 1964 case of Consten and Grundig (where the Commission found a vertical agreement to infringe the EU rules on competition by causing anti-competitive exclusion and creating private market barriers) seems extremely unlikely. Also, we have witnessed a decline in cases launched by the Commission concerning Article 106 of the TFEU. Such cases involve protectionist actions by states (for example, governments limiting access to domestic markets via state-owned companies). In 2008–2017, the Commission closed two cases of this kind, compared to ten cases in 1998–2007. All this suggests that DG COMP has remained enthusiastic about its role as a consumer protector, but it has abandoned its function envisioned by the Union's founders: that of a guardian of the common market.

DG COMP's track record with respect to geographical allocation of its enforcement activities seems to be equally troublesome. This concerns competition as well as state aid enforcement. The data on the Commission's state aid cases show that between 2005 and 2018 DG COMP's decisions led to the recovery of state aid granted by the 'old' Member States (countries having joined the Union before 2004) proportionally half as often as with respect to state aid granted by the 'new' Member States (if one compares aid granted by a state to aid subject to DG COMP's recovery decision). France and Germany are particularly privileged in that regard. In addition, although the 'old' Member States grant nine times more state aid than the 'new' Member States, between 2005 and 2018 the Commission issued over five times more recovery decisions towards them than towards the 'old Member States. In addition, for unclear reasons, the Commission only uses the exceptional legal instrument of an injunction to suspend alleged state aid towards the 'new' Member States (Semeniuk, 2019). The suspicion of unequal treatment of the 'new' Member States is exacerbated by cases such as DG COMP's intervention on state aid grounds against Poland's turnover-based tax on the retail sector. The Commission issued a suspension injunction against Poland in 2016 (which suggested that the Commission had solid legal and economic grounds for intervention), yet the decision was later overturned by the General Court of the European Union. It is even more troubling that one of the reasons of the Polish government for the levy was to fight tax avoidance by retail corporations, the exact policy rationale used by DG COMP in order to question (on the same, state aid, basis) tax exemptions given to companies such as Apple or Starbucks. One cannot escape an impression that DG COMP is more eager to challenge tax avoidance schemes where they benefit US companies, but it uses a contrary logic if they concern undertakings (mainly) from the 'old' Member States which have to cope with national corporate taxation. As regards DC COMP's policy in abuse of dominance cases, since the EU's eastern enlargement of 2004, the Commission has adopted commitment decisions with regard to companies from the 'old' Member States much more often than for enterprises from the 'new' Union, subject to infringement decisions including the imposition of proportionally more fines (fine decisions are considered more severe than commitment decisions). All of the above might create in some of the 'new' Member States an impression of uneven attention or even a bias with respect to the enforcement of competition and state aid policy by the Directorate of Competition.

CHALLENGES

The key challenge for the next commissioner for competition policy will be to carry on enforcing EU competition rules in a way beneficial to EU consumers while not neglecting wider goals of ensuring true integration of the internal market (through the reduction of private market barriers) and of maintaining the EU's economic position at the global level. This will entail finding a way of embracing the industrial policy concerns tabled by France and Germany as well as those relating to private market barriers for companies from the 'new' Union and involving uneven geographical spread of DG COMP's attention (especially in relation to state aid policy). While embracing the above concerns is of utmost importance, it has to be done without losing the credibility and operational independence DG COMP has enjoyed in the past years. Therefore, any policy recalibration within DG COMP should be made within the confines of competition policy goals. This is, however, not that hard to achieve after all.

Firstly, industrial policy has always been part of competition regimes, even the oldest ones. Traditionally, the role of competition policy was to ensure competition and consumer well-being within the system, not outside of it (it is one of the reasons why the United States' legal system has an explicit exemption from antitrust rules for export cartels). As long as, in order to boost EU foreign competitiveness, anti-competitive harm might occur outside of the EU territory, DG COMP should not be a hindrance to industrial policy actions of another of the Commission's Directorates or of Member States themselves. It might even be argued that a competition enforcer such as DG COMP should tolerate a market outcome that might be detrimental for EU consumers as long as industrial policy gains achieved at the expense of competitors outside of the Union offset such harm to the Union's consumers (i.e. when increased profits or revenues for EU companies from greater exports compensate for potential harm to EU consumers from semi-monopolistic practices of such EU undertakings). While DG COMP's role in industrial policy should remain passive and not active, it should be nevertheless remembered that it is not Europe who ignited the industrial policy scramble between economic blocs and DG COMP should not deprive the Union of weaponry in that scramble if a need to use this weaponry arises. One must also remember that apart from a risk of 'regulatory capture' there is a risk of 'sectarian capture' as well. While it is true that any future commissioner for competition policy must be cautious not to succumb to political pressure of governments (or only to yield to such pressure when it makes sense from the standpoint of economic efficiency), neither should they give in to pressure exerted by competition policy insiders urging the Commission 'not to abandon tried and tested sound legal and economic analysis'. Not only such insiders might be imprisoned in their own 'bubble' and lack a wider perspective: they might not be free of selfish motives since the 'tried and tested' environment of EU competition law and policy is precisely the environment in which they have thrived for so many years.

Secondly, the reduction of private market barriers between Member States serves the purposes of competition policy since it increases foreign competition which benefits consumers in the long term. EU competition law has been described (mainly by Americans) as a system focusing on long-term rather than short-term consumer interest anyway. Economic gaps between countries of the 'old' and 'new' Union will decrease and, as they narrow, companies from the 'new' Union will seek to establish themselves in the markets of the 'old' Union. Such undertakings deserve the same active support of DG COMP in reducing private market barriers as that given by DG COMP in the 1960s or the 1970s to economic operators of the 'old' Union trying to penetrate each other's national 'submarkets'. DG COMP should recall how eager it was at the beginning of this millennium (and rightly so) in bringing cases against natural monopolies in Eastern Europe in order to open up infrastructural markets for foreign competition. Now, the time might have come for DG COMP to shift its attention to bringing exclusionary abuse cases against dominant or oligopolistic companies using price schemes, loyalty arrangements and patent or financial predation in order to prevent businesses from the 'new' Union from entering the Western European markets. Without a truly integrated single market, the 'new' Member States might be more sceptical in supporting global industrial policy activities of the Union, seeing such measures as beneficial to some of the EU Member States rather than to the Union as a whole.

Finally, remedying potential uneven geographical spread of DG COMP's enforcement actions is primarily an issue of resource allocation and does not change the substantive approach to a particular case. If DG COMP has indeed distributed its enforcement attention unevenly across different Member States, the Commission should simply resolve this problem by reallocating enforcement resources and recalibrating its competition policy priorities. It should be remembered that, while reallocating enforcement resources, DG COMP can consider resources of national competition authorities. Together with NCAs, DG COMP constitutes the European Competition Network (ECN) within which it might share cases. Some of the NCAs have already proven capable of taking precedential, transnational cases: one can mention, for example, the precedential 2019 decision of the German Competition Authority (*Bundeskartellamt*) in which the authority ordered Facebook to stop combining users' data through Facebook's own and external websites. Also, violations of competition and consumer rights in the digital world might sometimes be handled better by authorities other than antitrust bodies. In fact, in a recent (2018), widely acclaimed study on digital platforms conducted by the Australian Competition and Consumer Commission, the Australian authority suggested that a separate regulatory authority other than the traditional competition law enforcer would be better tasked with 'monitoring, investigating and reporting on the criteria, commercial arrangements or other factors used by relevant digital platforms' (Australian Competition and Consumer Commission, 2018).

RECOMMENDATIONS

1. Consider introducing industrial policy concerns to the merger review process. Updating merger guidelines to take greater account of competition at the global level as suggested by the Franco–German Manifesto for a European industrial policy seems to be a reasonable idea. Introducing a right of appeal against the Commission's merger decision for the Council, as suggested by the Franco–German Manifesto, might be too radical, but some forms of government participation dictated by industrial policy concerns (even in advisory capacity) in the enforcement of EU competition policy might be desirable. While considering the above changes, remember that there are established and reputable competition law systems with industrial policy safeguards and the existence of such safeguards does not automatically undermine the system's independence and reputability. In Germany, for example, in exceptional circumstances the Federal Minister for Economic Affairs has the power to authorise a concentration prohibited by the *Bundeskartellamt* if the

restraint to competition is outweighed by advantages to the economy as a whole (yet, the German authority is accused of government dependence less often than DG COMP itself).

2. As DG COMP presses for a more active role of Member States' NCAs in enforcing competition law and for their independence, it should not be automatically assumed that the conformity of procedural and material competition law is of key importance to effective competition law enforcement at the national level. It must be remembered that competition law is a flexible set of values reflecting various societal goals and such objectives may differ between Member States; this means that some NCAs might put more enforcement stress on tackling exclusionary practices, whereas other authorities might place more emphasis on preventing exploitative practices. Some NCAs might focus on pure consumer interest, others might be more avid advocates of market access. Some NCAs might concentrate their scrutiny on digital markets, others might want to give their attention to more traditional industrial markets. Also, some NCAs might incorporate industrial policy concerns into their enforcement activities, provided that such concerns coincide with competition policy goals. As long as those different goals and approaches of Member States' NCAs do not clearly contradict EU competition regulations, NCAs should be allowed to pursue them in an effective manner. While supervising the implementation of Directive (EU) 2019/1, remember that requiring procedural and material uniformity without taking account of Member States' varying competition-related goals and approaches might be perceived by certain Member States as breaching the proportionality principle. Lastly, remember that the Directive's guarantees of independence might be used by a given NCA as a tool to remain passive and rebut allegations of indolence from more active branches of the government.

3. Start paying closer attention to geographical spread of DG COMP's enforcement activities, especially where market access might be hindered by private barriers (competition policy) or public obstacles (state aid policy). Find out (perhaps by establishing a specialised *ad hoc* body) whether DG COMP's enforcement focus in competition and state aid cases is spread evenly across Member States and whether EU competition and state aid policy has abandoned its role in ensuring market access between Member States. If you find evidence of the above, react by recalibrating enforcement priorities or by institutional reform. Meanwhile, do not expect companies to bring to you evidence of anticompetitive exclusionary conduct that thwarts the functioning of the common market because businesses (especially SMEs and undertakings in the 'new' Union) are not often aware of the tools at the disposal of DG COMP or simply lack resources to tackle legal battles against richer competitors. Try to proactively look for cases where market access might be hindered by private or public barriers (the way DG COMP does today actively look for cases in digital markets).

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4. In order to pursue various policy goals, one should consider reallocation of resources, including delegating some of the work to NCAs or different authorities. In areas where interests of all Member States and their citizens seem to be aligned (such as digital market cases), some NCAs

are already well-positioned to handle such cases. Therefore, do not be afraid to step out of the limelight where precedential digital cases are concerned – NCAs can handle such cases as well. Directive (EU) 2019/1 is a good step in empowering NCAs (perhaps a further regulation mandating the government to secure financial resources for NCAs will also be desirable). In order to delegate more cases to NCAs, one should consider changing the relevant rules or soft law documents, such as the Commission Notice on cooperation within the Network of Competition Authorities. There should be a system of effective delegation of cases within the ECN to NCAs even when the territory of all the Member States' is affected by alleged anticompetitive practice. If all or the majority of NCAs agree that a case could be handled by one of them, the Commission should convince the NCA to examine the case. The ECN should be a system not only for sharing cases but also for assigning responsibilities (for example, some NCAs might be responsible for certain types of cases or certain sectors).

5. Lastly, DG COMP, together with other directorates, should initiate a debate on whether competition and consumer interest in digital markets would not be better protected by a separate agency or agencies at the EU or national level. Cases in the digital sector are often of a pan-European nature as the same services are offered all over Europe. By saving resources and delegating to the NCAs cases where the interests of EU consumers are aligned (i.e. cases in the digital sector), DG COMP might engage more in a proactive search for market access cases where interests of particular Member States might diverge (i.e. cases where DG COMP is truly needed as an independent arbitrator).

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2. Services

By Łukasz Ambroziak, Janusz Chojna, Hanna Kępka

STATE OF AFFAIRS

Services are an increasingly important part of the global economy. Access to them, along with their quality and cost, shapes countries' and regions' international competitiveness to a growing degree. In international trade, they exist directly, as part of cross-border trade, or indirectly, as part of servicisation, in the production of industrial goods. Horizontal and vertical services condition the functioning of global value chains. They are most significant in the chains' initial (R&D, design) and final (sales, marketing, advertising, after-sales service) phases, where the most value added is created.

Research by the Polish Economic Institute shows that the significance of servicisation in the European Union Member States' exports is greater in relative terms than in the case of other leading developed economies (the US and Japan) and the largest emerging markets (China and India).

Processes in the economic and regulatory spheres have a negative impact on the EU service sector's international competitiveness. In terms of productivity, the period after 2008 turned out to be a 'lost decade' in the sector. Improvement in labour productivity halted and is now half that in the US service sector. The catching-up done in the pre-crisis period was therefore wasted. On average, services in the EU cost 11% more than in the US (Sunesen, Thelle, 2018, pp. 8, 10).

In recent years, the decline in the creation of a single market for services has not helped improve productivity and competitiveness in the EU service sector. It is worth mentioning the problems with the implementation of the Services Directive, which began in 2009, the failure of new initiatives in this area, such as the services e-card or the Single Market Information Tool (SMIT), as well as the tightening of provisions on posted workers. As a result, the liberalisation of the service sector is much slower and significantly less advanced than in the single market for goods. Protectionist trends and insufficient political acceptance for further liberalisation of the service market are the main barriers (Semeniuk, 2019).

CHALLENGES

There is an increasingly visible contradiction between the growing importance of services in the global economy and trade, as well as in the creation of an innovative knowledge-based economy and smooth functioning of global value chains, and the EU's politically-conditioned inability to make significant progress in creating a single market for services, or – even more so – growing protectionism and progressive regression in the implementation and functioning of joint solutions in this area.

> There is an increasingly visible contradiction between the growing importance of services in the global economy and trade and the EU's politically-conditioned inability to make significant progress in creating a single market for services.

This contradiction could be a strategic threat to the future position of the EU and its Member States in the global economy. It may also reflect the growing conflict of interests between EU Member States, which could threaten the prospects for European integration in the future.

The key challenge for the European Commission is to end the stalemate. This would result in the rules on the single market for services being implemented more consistently and more effectively, including efforts to fully implement the Services Directive, as well as new initiatives in this area.

Clear progress in the integration of the European service market would help increase the range of services available, as well as their competitiveness in terms of quality and price. This would also improve the competitiveness of the EU industrial sector, increasingly subject to servicisation.

Special attention should be paid to tech-related services. The main challenge is to fill the emerging gap between progress in digitisation, automation and artificial intelligence in the EU and that in the United States and China. To address this challenge, regulatory solutions and programmes at the EU and national levels will be needed, along with financial support programmes.

RECOMMENDATIONS

Attempts to introduce new solutions to integrate the EU service market can have a two-track character: (i) resuming major, spectacular projects (such as the services e-card or SMIT), based on lessons learned from past failures and Member States' fundamental reservations to achieve the necessary scale of political support; (ii) a sectoral approach, focused on more modest, often technical efforts that do not raise political objections, but which, if properly identified, could have significant multiplier effects.

These approaches need not be mutually exclusive and can be applied in parallel. The horizontal approach can be particularly effective when it comes to digital development and the IT sector. Regulatory efforts should concentrate on increasing the security of trade in digital services (CASE, 2018b, p. 7).

However, since the general lack of political acceptance for large-scale, ambitious projects to deepen the integration of the European services market is likely to continue in the European Commission's current term, the sectoral approach seems more promising.

For it to succeed, identifying the right directions to intervene to liberalise service markets will be of key importance. This will require in-depth research on the sectoral and national system to identify particularly sensitive areas. Attention should focus on sectors that have been poorly liberalised so far – i.e. the most protected ones – and on the types of service activities that have the greatest influence on the servicisation of EU industry.

Research by CASE based on OECD data shows that the sectors with the most restrictiveness include: air transport services and rail freight transport, as well as accounting, legal, architectural and courier services (CASE, 2018a, p. 20).

> The general lack of political acceptance for large-scale, ambitious projects to deepen the integration of the European services market is likely to continue. Therefore, the sectoral approach seems more promising.

The following service sectors contributed the most to gross exports of industrial products by EU-27 Member States (excluding the United Kingdom), according to research by the Polish Economic Institute: wholesale trade, business services and administrative office services, land transport, financial activities and real estate market services[1]. Their liberalisation would be especially significant to supporting servicisation and EU industry's international competitiveness.

Initiatives aiming to deepen integration in the EU service market should be accompanied by efforts to maintain existing achievements in this area. Above all, this means implementing the Services Directive consistently and preventing new restrictions at the EU and national levels; for instance, with regard to posted workers.

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3. Taxation

3.1. VAT

By Jan Sarnowski and Paweł Selera[2]

STATE OF AFFAIRS

Size of the VAT gap

The VAT gap, i.e. the difference between expected VAT revenues and VAT actually collected, provides an estimate of revenue loss due to tax fraud, tax evasion and tax avoidance, but also due to bankruptcies, financial insolvencies or miscalculations. According to the studies of the European Commission dated September 2019 based on the VAT collection figures available, the total amount of VAT lost across the EU in 2017 is estimated at EUR 137.5 billion (European Commission, 2019a). This represents a loss of 11.2% of the total expected VAT revenue. Overall, the VAT gap as percentage of the VAT Total Tax Liability (VTTL) decreased in 25 Member States, with the largest improvements noted in Malta, Poland and Cyprus, whereas it increased in three – namely Greece, Latvia and Germany (European Commission, 2019a). The most common form of VAT fraud is Missing Trader Intra-Community (MTIC) fraud. According to Europol, MTIC fraud costs revenue authorities around EUR 60 billion annually in tax losses (Europol, 2019). Europol has warned the European Parliament (EP) that a share of the estimated EUR 60 billion EU VAT fraud is going to fund terrorism. The documents found in a cave in Pakistan that Osama bin Laden used as a hideout led investigators to a criminal network based in Italy that stole GBP 0.9 billion through VAT fraud on CO_2 certificates (Avalara, 2019).

CHALLENGES

VAT definitive system – every reform at the EU level requires unanimity

In the current VAT system, trade in goods between businesses is split into two transactions: a VAT-exempt sale in the Member State of origin and a taxed acquisition in the Member State of destination. Amendments to the VAT Directive proposed by the European Commission in 2018 will define the cross-border trade of goods as a 'single taxable supply' which will ensure that goods are taxed in the Member State where the transport of the goods ends (Proposal, 2018). VAT would be payable by the supplier via the one-stop shop, unless the customer qualifies as a certified taxable person (in this case, a reverse charge will apply). Beyond the technical questions that this proposal

[2] This book contribution does only reflect the authors' private opinion and does not reflect the opinion of the Polish Ministry of Finance.

raises, it is striking that its implementation would require an unprecedented level of cooperation and trust between the Member States. This decentralisation of VAT collection opens new opportunities for fraud (Lamensch, 2019).

The present requirement of unanimity in the Council of the European Union in tax matters stops every deeper reform in VAT matters, including most probably the VAT definitive system. Although Commissioner Pierre Moscovici called for a gradual abolition of unanimous voting on tax issues, unanimity still exists (van de Leur, 2019).

The new level of cooperation between tax administrations is a second tool for combating VAT fraud; it includes, especially, a revolutionary tool to detect carousel fraud, recently developed and tested by Eurofisc, namely the Transactional Network Analysis (TNA). The TNA, in a nutshell, is based on data mining, using an algorithm to reveal networks between different operators, and targets and scores the risky operators (Lamensch, 2019). However, Member States can choose in which working field of Eurofisc they participate actively, which undermines the role of both Eurofisc and TNA as such.

Fighting against VAT fraud – still a priority for the EU Commission and EU governments

Pierre Moscovici, Commissioner for Economic and Financial Affairs, Taxation and Customs, said in May 2019: 'Criminal VAT fraud is one of the major issues facing our public finances today and its eradication should be a top priority for EU governments (European Commission, 2019b). This will also be one of the main priorities for the new European Commission.

RECOMMENDATIONS

Boosting regional cooperation instead of pushing into harmonisation

The European Commission is right when stating that both collecting taxes and combating tax fraud and tax evasion are the responsibility of the EU Member States' national authorities. However, much of the fraud happens across borders and a single country acting on its own will not achieve much (European Commission, 2019c). We believe that regional cooperation based on international agreements could be an effective tool in combating VAT fraud.

The essence of the agreement will be to provide signatories with automatic access to information, such as standardised databases of taxpayers and commercial registers, which is crucial for tax authorities to effectively detect VAT frauds. The comparability and high quality of the data provided will be achieved, among other things, through the implementation of best legal practices, which may be modelled on the solutions already implemented in Poland. It will include measures such as common rules for the verification of the VAT registration process as well as creating black and white lists of VAT payers. The third step will be to create a unified legal framework for enhanced technical cooperation and joint controls.

Instead of an EU-wide harmonisation, which does not work due to the resistance of some countries, the Commission should work towards a new approach based on voluntary cooperation between

Member States, and the creation of a coalition of those willing to combat criminal groups involved in VAT fraud, combining respect for each country's national sovereignty with maximal effectiveness.

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3.2. Corporate taxation

By Jan Sarnowski and Paweł Selera[3]

CHALLENGES

As stated by the Commission in its 2015 Communication on fairer taxation (European Commission, 2015), the current rules for corporate taxation no longer fit the modern context. Corporate income is taxed at the national level, but the economic environment has become more globalised, mobile and digital. Certain companies are exploiting this situation to artificially shift profits to the lowest tax jurisdictions and minimise their overall tax contribution (the so-called 'aggressive tax planning' via transfer pricing policy, cost sharing methods, etc.).

RECOMMENDATIONS

Compensatory taxation

International companies applying different planning methods do not pay a fair share in the Member States where they mainly operate. One solution is the so-called compensatory taxation based on Base Erosion and Anti-Abuse Tax (BEAT), recently introduced in the United States. The American BEAT concerns the largest corporations that make extremely large payments to foreign affiliates, such as interest, royalties and certain service payments.

[3] This book contribution does only reflect the authors' private opinion and does not reflect the opinion of the Polish Ministry of Finance.

In order to calculate a possible compensatory tax liability under the BEAT regulations, it is assumed that, in principle, all foreign payments resulting in a reduction in the tax base in the source country erode the tax base. Such payments are disregarded when calculating the alternative tax base. A special form of the minimum tax has also been introduced in Austria, where companies, despite the lack of income, are obliged to pay income tax as a percentage of their share capital. Compensatory taxation could serve as a concept to be introduced at the EU level, eliminating aggressive tax planning practices.

Public procurement against tax haven abuse

According to a DatLab study (DatLab, 2019), tax haven-based companies win roughly 5% of the value of public tenders across the EU Member States. In this analysis, DatLab found about 10,000 government suppliers that were co-owned from countries such as the Bermudas, Curacao or the Cayman Islands – officially blacklisted (or greylisted) as tax havens by the EU. Those companies have been awarded public contracts worth about EUR 56 billion over the past 12 years, almost doubling their share of the market over the last decade.

Public procurement is the ideal ground where governments can start pushing against tax haven abuse. Public procurement could be used at the EU level to protect the tax base of the Member States. Such protection may consist in (1) making participation in a tender subject to certain tax compliance conditions, (2) additional benefits for high standard compliance taxpayers or (3) monitoring and controlling remuneration for public contracts (e.g. in the form of split payment where part of the remuneration would be transferred to income tax, which would be a form of minimum tax in certain situations).

More transparent taxation of international companies

Corporate taxation must be more transparent especially in the case of tax planning methods applied by companies. A good example is the obligation to make tax strategies public by the largest groups of undertakings operating in the United Kingdom. Corporations present not only their tax results, but also how they manage tax risk, their attitude to tax planning, how the business works and any other relevant information relating to taxation (HMRC, 2019). In our view, these rules regarding the disclosure of information on tax strategies should apply to all the European Union Member States in a standardised format.

> Corporate taxation must be more transparent especially in the case of tax planning methods applied by companies.

Another aspect of transparency is public tax rating or a tax register of corporations. On 1 January 2016, the Hungarian Tax Administration introduced a new rating category for group taxpayers and VAT-registered taxpayers listed in the trade register. Accordingly, taxpayers may be classified under three rating categories: (i) general taxpayers subject to the previously applicable, general rules; (ii) reliable taxpayers subject to rules more relaxed relative to the previous rules and (iii) risky taxpayers subject to rules stricter than the previous rules. Ratings may also be enquired through the 'ügyfélkapu' government web portal, (https://ugyfelkapu.magyarorszag.hu/). Rating rules could be set for international groups of undertakings at the EU level and taking into account tax compliance in all EU Member States. Such rating categories could also be a useful tool for VAT purposes.

Boosting regional cooperation through more effective access to and exchange of standardised data

Regional cooperation should also be enhanced by the European Commission in the field of direct taxation.

European Union Member States use various analytical solutions aimed at detecting tax fraud and tax avoidance. Many of those solutions could work in other EU Member States or be the subject of joint procurement. In addition, it is recommended to extend the concept of automatic exchange of tax information (CRS) by creating a uniform EU database of tax and financial entities to facilitate analytical processes.

Prolonged work on a Common Consolidated Corporate Tax Base (CCC TB) forces Member States to search for ad hoc solutions. It is advisable to support the European Union in constructing regional agreements regarding elements of the income tax system that will limit the possibilities of tax avoidance. Regional agreements can be a good starting point for creating broader agreements for all Member States.

3.3. Digital tax

By Ignacy Święcicki

STATE OF AFFAIRS

Taxation is an issue that stretches far beyond the digital commissioner's portfolio and also beyond EU borders. There is a widespread agreement that the current framework for taxation of multinational enterprises needs to be modified, in the face of the digitisation of globalisation. Over 100 countries are engaged in the discussion, yet no agreement is in sight (OECD, 2019b). The emergence of 'digital' companies moving their tax bases with ease between jurisdictions has in consequence led to a presumption that such undertakings pay taxes at undeserved, low tax rates. Countries other than those where such companies are headquartered feel especially stricken, even as effective tax rates are similar between digital companies and brick-and-mortar industry champions (Bauer, 2018).

There are, broadly speaking, two strands of discussion. On the one hand, some countries wish to keep the current principles of international taxation, but adjust the details in order to take into account new business models. On the other hand, another group of countries points to more far-reaching changes in tax arrangements, which would broadly address the issues of eroding tax bases. Those discussions are grouped by the OECD in two pillars of the work on taxation in the digital economy (OECD, 2019a).

The two directives proposed by the European Commission in March 2018 were nested in the first pillar of what the OECD is working on. As the pan-European regulation failed to gain the required majority in the Council, the countries moved ahead on their own, including Italy and France, with advanced proposals in Spain, Czechia, the UK, Austria and Slovakia (KPMG, 2019). However, the regulations differ in their scope, which adds to the fragmentation of the digital single market in Europe. And it is fragmentation of the digital single market that was mentioned by the European Commission as the main risk that the proposals were to avoid (European Commission, 2018b).

Tailoring taxation for digital companies is a difficult task. The work at the OECD is based on the premise that there is no need to separate digital from the rest of the economy since currently the whole economy is digital. But as European governments have moved ahead, there is a need to keep unity and mitigate negative consequences of barriers within the EU single market.

A narrow approach, limited to digital companies and to income taxes, can indeed blur the wider impact of digitisation on public finance and social protection systems. Even agreeing on definitions may be challenging. Take the sharing economy as an example. The once simple models focused on putting underutilised resources on the market have evolved into giant companies, with huge revenues and destabilising established market segments. But this evolution resulted in difficulties in attributing new businesses to the existing regulatory categories. Whereas Uber has been ruled a transport service company, which means it must accept heavier regulation (Bowcott, 2017), Airbnb may soon be declared a digital service provider, putting it under the light-touch regime of the e-commerce directive (Boffey, 2019). These developments have not discouraged some from still talking about the 'sharing economy' as a uniform phenomenon, whereas studies document the professionalisation of the platform, as measured, *inter alia*, by the concentration of listings (Gyódi, 2017).

It is also difficult to measure the digital economy, namely the impact that digital companies have on the market. There are currently no reliable data as to the number of users, the number of transactions or any other data that considered to be a reference point for taxation. Applying a new tax would have to be accompanied by additional reporting obligations and more bureaucracy.

Most of the digital companies that are to be affected by the tax are based in the USA, which adds a geopolitical aspect to the proposal. On the one hand, the US administration has its own issues to solve with tech giants, related to competition, fake news or influence on public debate; on the other hand, President Trump lost no time to criticise the French attempts to legislate digital tax and threatened retaliation.

CHALLENGES

The work at the OECD proceeds, albeit at a pace that may be intrinsic to negotiations in large international organisations, but far too slow to match the ambitions of European governments, notwithstanding the pace of digital transformation. The initial proposals put forward by the Commission failed to gain full support in the Council, but this does not mean that they should not be continued. As more countries go on their own with new tax measures, the main challenge will be to put all efforts to stop the fragmentation of the digital market and get as many countries as possible onboard for a common European solution. This should also extend to the international fora where European countries should back a common approach to reforming the international system of taxation. Facing opposition from across the Atlantic, only the joint action of EU Member States may be effective.

European countries should back a common approach to reforming the international system of taxation. Facing opposition from across the Atlantic, only the joint action of EU Member States may be effective.

Finding common ground should be accompanied by an in-depth analysis of the problem and making sure that the definitions being proposed are comprehensive and future proof. The last thing that should be an outcome of new regulations is increased rent-seeking of digital companies. If wrongly designed, the new regulation may harm European undertakings as digital giants always have more means to optimise taxes and minimise red tape.

There is also another challenge, underpinning the issue of taxation. As users provide their data in exchange for certain services, and the data are further monetised, such users receive no consideration. In other words, there is no direct financial compensation for one of the factors of production – data. From an economic point of view, a mechanism where users are paid for their data may offer a solution which allows to bypass the tax-based solution. As data, and especially data provided by individuals, are at the core of the problem, putting the right price on data may be a solution. Currently individuals are not often aware of the value of the data they provide to digital companies. It is also far from straightforward to set a price for a given data set. Nevertheless, imagining individual data accounts, which allows users to earn their share and at the same time gives a sense of control over data, could be a welcome solution. Even if difficult to put into operation in the short term, it may serve as an indication of the importance of understanding and modelling underlying phenomena, not just their most visible manifestations.

The issues that the Commission is trying to solve through digital taxation may be only the tip of an iceberg. The financial and social impact of new economic models stretches well beyond taxation and even beyond influence on public finance. As more people work as freelancers or offer their services through platforms, the current system of health and social insurance and the pension system is becoming more inadequate. As Bruegel (Petropoulos, Marcus, Bergamini, 2019) points out, all social security systems in Europe are to some extent based on labour market participation and none is purely universal. In addition to individual risk, the changes in the labour market bring quantifiable losses to the central treasury. The challenge for particular countries and the EU as a whole is to assess the impact of the new economic models on the whole of public finance.

RECOMMENDATIONS

As mentioned before, your task as the Commissioner responsible for digital affairs would be to find a unified solution for the willing European Union Member States. Time works to your disadvantage; the more individual countries introduce their laws, the more difficult it would be to reverse the fragmentation. An instrument that should be considered in this case is enhanced cooperation. This instrument, successfully used for some civil law cases, still has to prove its merit in a more complex regulation, such as taxation. The only example to date, the financial transaction tax, should be taken as a warning rather than as a benchmark. After six years of work, there is still no binding solution in place. With the digital tax, both the Commission and the Member States involved have to act more swiftly. Given the discussions that have already taken place, chances are that an agreement could be reached.

> The more individual countries introduce their laws, the more difficult it would be to reverse the fragmentation. An instrument that should be considered in this case is enhanced cooperation.

Furthermore, to ease the discussions on the fairness of appropriating revenues from this new tax, if digital tax is approved by all Member States, the proceeds could become a part of the EU's budget own resources. Forthcoming Brexit will lower revenues to the EU budget, and digital tax may be one of the instruments to compensate for that.

Applying any new tax needs an in-depth analysis of the pass-on effect, i.e. an assessment of who will pay the tax in the end, in the form of higher prices or reduced profits. The Commission's analysis shows that a significant part of the tax will be borne by the digital companies themselves, through reduced profits (European Commission, 2018a). There are, however, many studies indicating that the levy will be ultimately paid by the consumers and businesses that use such platforms (Copenhagen Economics, 2018; Deloitte and Taj, 2019). The divergent results suggest that further research should be provided. It is particularly important, given the fact that the platforms are used by many small enterprises, and that the tax burden may be passed on to companies in some segments more than in other sectors. If the new tax is to gain support in the EU, your proposals should be based on sound and detailed analysis.

Another element of building support for your proposal and minimising distortionary impacts on the European economy is the issue of double taxation. The idea to tax revenues rather than profits may lead to a situation where a company paying its taxes in one of the EU Member States, adhering to national rules, will be additionally burdened by the new tax. The new proposal should take this into account and be reinforced in terms of avoiding double taxation; for example, through clear rules on how the new duty is deducted from the tax base. Even if no new comprehensive proposal is in place, the role of the Commission should be to help align the rules introduced by individual countries. If the regulations differ, the risks of double taxation (and double non-taxation) increase and the same revenue can be taxed twice, with distortionary effects on the market.

Addressing taxation issues related to the digitalisation of the economy should only be the first step towards a general assessment of the impact on public finance of the ongoing transformation. The European social systems are largely built around participation in the labour market and the resulting transfers and benefits (Petropoulos, Marcus, Bergamini, 2019 for an analysis of challenges from digitalisation. In order to fully grasp the effects, you should, in collaboration with the Commissioner responsible for economic and financial issues, prepare a methodology and report on the broad impact of digitalisation on the state of public finance. Just as regular reports on the impacts of ageing societies project the effects of the older population on public finance, similar forecasting of digitalisation would be useful.

> You should, in collaboration with the Commissioner responsible for economic and financial issues, prepare a methodology and report on the broad impact of digitalisation on the state of public finance.

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4. Agriculture

By Piotr Arak

STATE OF AFFAIRS

The Common Agricultural Policy is losing friends instead of gaining. In 2019, the European Commission proposed the shape of the Common Agricultural Policy (CAP) after 2020, i.e. shortly after presenting the draft EU Multiannual Financial Framework for 2021–2027. The EC assumed the CAP budget at EUR 365 billion. This is definitely less than in the current financing period, with over EUR 408 billion allocated for that purpose. Considering the inflation rate, it means a real decrease in CAP funds by more than 10%.

Most of the EU funds – EUR 265.2 billion – would go to the first pillar, i.e. direct payments. However, EUR 78.8 billion would be allocated to rural development. An amount of around EUR 20 billion is planned by the EC for retaining various market support mechanisms.

According to the Commission's proposal, Poland would receive ca. EUR 21.2 billion under the CAP for 2021–2027. This is much less than in the previous financial perspective for 2014–2020 in which we were entitled to receive approximately EUR 32 billion. The EC also wants a different distribution mechanism. More funds are to be allocated to environmental and climate goals and to introducing innovation to agriculture. The manner in which direct payments are distributed would also change, to support small and medium-sized farms more strongly. In addition, under the new CAP perspective, Member States are to be given more freedom in the distribution of funds.

> The question is how to reconcile increasing competitiveness with further improving the quality of life in the countryside. In many ways, those goals do not go hand in hand.

Expectations are that the entire agricultural sector in the European Union will be more and more efficient and competitive on the international arena, thus more effectively competing with agriculture from the USA, Brazil or Australia. The question, however, is how to reconcile increasing competitiveness with further improving the quality of life in the countryside. In many ways, those goals do not go hand in hand.

CHALLENGES

Agriculture has been and remains a key element of the European dream. In the wake of World War II, European nations experienced food shortages and famine, and were less than 50%

self-sufficient in food. The European Economic Community was therefore built on ambitious commitments towards increasing food production and securing farm incomes in line with overall income developments.

Today, we are at the brink of monopolies in this subsidised market. Consolidation within and across the commercial inputs, farm machinery, processing and food retail sectors is advancing at unprecedented rates on the back of recent mega-mergers (IPES-Food, 2017). 70% of the global agrochemical industry is now in the hands of only three companies, and up to 90% of the global grain trade is controlled by four multinationals (Murphy, Burch, Clapp, 2012). In 2011, the five largest food retailers in thirteen EU Member States had a combined market share of over 60% (European Commission, 2014). In this context, dominant food industry players have been able to drive down prices and working conditions affecting seasonal migrant labourers. Farmers, in particular, are paying a high price: input costs rose by 40% between 2000 and 2010 and from 2003 to 2013, more than 1 in 4 farms disappeared from the European landscape (Eurostat, 2015). Approximately 20% of all farms receive 80% of the subsidies in the UE, which makes the Pareto rule hold, but prevents the convergence model of European agriculture from happening.

> Direct payments, within the CAP, were once meant to ensure survival for farmers who had low farm income and no real alternative employment – the current economic situation in the NMS is different. There is a shortage of people in various professions across CEE. Therefore, you can already think about how to allocate funds to perform a social support function more efficiently.

In terms of rural development, Poland and other countries in Central and Eastern Europe are still at a different stage than agriculture in the western EU. Hence the undoubted necessity of continuous investment not only in improving the income of farmers (especially those who run smaller farms), but also in enhancing infrastructure and other income opportunities in the countryside. The need to take into account the local specificities in individual regions of the EU is one of the reasons why the EC wants to increase the role of subsidiarity in the EC and leave more freedom to Member States regarding strategic plans. Direct payments, within the CAP, were once meant to ensure survival for farmers who had low farm income and no real alternative employment – the current economic situation in the NMS is different. There is a shortage of people in various professions across CEE. Therefore, you can already think about how to allocate funds to perform a social support function more efficiently.

Climate change is the biggest challenge for agriculture. Not only in Poland or in the EU, but all over the world as well. In the past 2 to 4 years, we have seen how strongly the rapidly changing weather conditions have affected the profitability of agriculture, e.g. in the fruit industry. We still do not protect biodiversity or aquatic ecosystems to the extent that we have set ourselves. This is due to, among other things, agriculture chemistry and the sector's contribution to water pollution. As a result, e.g. bird species diversity fell by 30% in the entire EU. Agriculture desperately needs adaptation programmes for climate change, e.g. programmes that provide access to water during the months of summer drought. It will be very difficult to achieve without EU support. Not only in Poland, but throughout the EU. Farmers cannot do it alone. It should also be remembered that agriculture is no longer just food production, but a set of services for the ecosystem – e.g. in the field of renewable energy.

RECOMMENDATIONS

Today almost half of farmers' income, not only in CEE but throughout the EU, comes from subsidies. With a smaller budget and high environmental requirements.

> Direct subsidies should be linked to the farm's production efficiency and effectiveness in terms of climate change mitigation. Smaller agricultural holdings must not be sacrificed on this altar of efficiency, we need to help them focus on less labour-intensive production orientations.

We need to rethink financing within the CAP. Generally, direct subsidies should be linked to the farm's production efficiency and effectiveness in terms of climate change mitigation. Smaller agricultural holdings must not be sacrificed on this altar of efficiency, we need to help them focus on less labour-intensive production orientations, e.g. organic farming, using the possibilities of direct sales and agricultural retail trade, as well as for some household members to work outside farms. Perhaps micro-lending initiatives for development of small and medium-sized agricultural enterprises in rural Europe might be a good idea.

Organic farming is on the increase throughout Europe as people begin to distrust food produced with the aid of high concentrations of fertilisers and pesticides. Genetically modified produce has been rejected by consumers across Europe. We need to sustain the growth of this business which decreases the monopolies created in the global market.

Another issue is the surge of counterfeit plant protection products, which requires a coordinated response at the EU level. Losses caused by the sale of counterfeit plant protection products in the EU reach EUR 1 billion, nearly 10% of annual sales. Last year, the police checked ports and airports, controlled borders and warehouses in 27 EU Member States, including Poland. Investigators detected 360 tonnes of counterfeit pesticides. That amount would be enough for spraying in the area of Denmark (Ptak-Iglewska, 2019). China is the main source of fakes. Other countries – India, Malaysia, Indonesia, Turkey and Ukraine – play a smaller role. The main gates to the EU are the largest sea ports, such as Rotterdam or Antwerp. Because of this, state budgets directly lose revenue due to non-paid taxes, whereas the fake market also affects producers by depleting sales. However, the problem is more serious than economic costs; it also harms the environment as the products are not certified, so the shadow economy in this case harms the budget but the planet as well.

We need to mitigate the effects of climate change on small farms. Due to the growing awareness of the potential impact of climate change on agricultural production in recent years, this topic has become the subject of numerous scientific studies. Some businesses need a kind of reorientation fund in order to change their crops and breeding animals to those more sustainable with the changing climate and decreasing the negative effects to the environment (Ciscar et. al., 2018). Some countries might benefit from climate change thanks to new possibilities available to their agricultural sectors.

There has also been a marked increase in European ecological tourism. Farm holidays are increasingly fashionable. 'Back-to-nature' has become a popular theme for attracting customers to rural tourism. Moving outside the city is gaining in popularity, but it is not an option for everyone. The creation of instruments for co-financing tourism in rural areas – agritourism, but also nature tourism and the reconstruction of historical heritage in rural areas (castles, palaces), with funds other than the CAP, is at hand.

Agriculture 4.0 needs help. R&D in agriculture is no S-F. We need to link agricultural to other policies to boost further growth. Funds allocated for this purpose are treated within sectors, lacking connection with other EU policies, e.g. cohesion policy, which could support those activities. The main barriers that hinder the development of entrepreneurship in rural areas are complicated legal provisions, poor infrastructure and limited access to capital. There are, however, accelerators of growth, e.g. the Internet of Things, big data, blockchain, drones or augmented reality. We used not to believe in electric cars, and today they are everyday life. Creating structures that would support the development of digital technologies will also boost opportunities to find remote work in modern professions. Various types of start-ups, also agricultural ones, working in favour of agriculture, are already emerging, e.g. they analyse NASA and ESA satellite measurements and, based on them, provide information about the status of crops in the fields or produce drones that help create orthophotomaps or monitor field irrigation. Precision agriculture, backed by smart data usage, can identify parts of a farm that will deliver an investment return or would be better delivering sustainability and conservation outcomes. Through smart data use, it is possible for farmers to better understand their output practices and understand what changes can generate the greatest value. Going in this direction is a great opportunity, also providing more funds for research, technologies in the age of industry 4.0 in order to replace outdated equipment, which could be financed by the European Investment Bank or a specific agricultural agency of the EU.

> Agriculture 4.0 is more than just a movement. The concept has come into use as a catch-all term for the next step forward in agriculture: a smarter, more efficient industry that fully utilises big data and new technologies to benefit the whole supply chain.

As the last recommendation, European governments should prevent rural depopulation. Help is needed to support infrastructure development and the quality of life – the CAP plays an important role in the CEE region as a measure of sustainable growth. At this phase of development, we need to implement something more active, innovative and focused for the European agricultural sector to truly become innovative and competitive. One of the oldest European policies, present in the united Europe since the 1960s, will again need to transform and respond to the challenges facing EU – including Polish – agriculture. Hopefully, not the last time.

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5. Monetary Union

By Konrad Popławski

STATE OF AFFAIRS

The outbreak of the euro crisis revealed structural weaknesses of the European Economic and Monetary Union, such as a vicious circle between sovereign debt and banks (European Commission, 2015), too lax fiscal policy, macroeconomic imbalances (Van Rompuy, 2012) and the lack of stabilisation funds. Several reforms – which have significantly centralised the executive power of the EU institutions – have since been adopted or are under preparation:

- The European Stability Mechanism (ESM) was established in 2012 as an instrument to support, in the form of loans, the euro area members in financial distress. In order to obtain such loans, the borrowing countries are required to follow specific policies and implement specific reforms, negotiated on a case-by-case basis. The ESM, which could be regarded as the European version of the IMF, has a lending capacity of EUR 500bn.
- The Stability and Growth Pact has been strengthened, so it would be more difficult to veto financial sanctions for not obeying the fiscal rules. In the framework of the Fiscal Compact, accepted by 22 EU Member States (the euro area members, Bulgaria, Denmark and Romania), new measures of medium-term objective have been introduced and an obligation to reduce public debt to the level required by the Stability and Growth Pact. The Treaty on Stability, Coordination and Governance in the Economic and Monetary Union ratified by 25 Member States (the euro area members and partly by Bulgaria, Denmark, Romania, Hungary, Poland and Sweden) obliged them to implement its provisions into national law. Additionally, the European Commission obtained enhanced surveillance powers, being entitled to accept EU Member States' draft budgets.
- The coordination of economic policies of the euro area members by the establishment of the European Semester and the Macroeconomic Imbalance Procedure, offering recommendation for economic policy and sanctions for excessive macroeconomic imbalances, has been strengthened.
- The European Central Bank obtained a mandate not only to keep the prices low, but also to create programmes (such as the Outright Monetary Transactions Programme, the Public Sector Purchase Programme and the Long-Term Refinancing Operations – LTRO) to support the economic momentum and to increase prices in the case of deflation risk.
- The process of creating the banking union was initiated. Two out of the three pillars are already in place. The first pillar, i.e. the Single Supervisory Mechanism, gave the ECB certain supervisory tasks with regard to the systemically important banks in the euro area. The second pillar, the Single Resolution Mechanism, was established to resolve failing banks in an orderly manner. The third pillar of the banking union, the European Deposit Insurance Scheme, has

not yet been initiated due to disputes between the eurozone member countries which are creditors and those being debtors (Brunsden, Khan, 2018).

- The process of creating the Budgetary Instrument for Convergence and Competitiveness (BICC) was initiated (European Council, 2019). The full scope of it has not yet been agreed upon, but the framework should grant financial, non-refundable assistance to the euro area Member States (and, to some extent, to ERM2 members) in exchange for reforms improving their competitiveness and enhancing convergence.

So far, the process of coordinating reforms between the euro area and other EU Member States has been quite smooth. The non-euro Member States (Bulgaria, Croatia, the Czech Republic, Denmark, Poland, Romania, Sweden, Hungary and the United Kingdom) took an open and pragmatic position, acknowledging the fact that problems of the euro area could destabilise the whole EU. During the escalation of the eurozone crisis (2012–2013), the economic momentum of the whole EU was significantly lower than that of other developed economies. The non-euro Member States agreed to amend the Treaty on the Functioning of the European Union to facilitate the creation of the ESM (European Commission, 2012). Despite that, there were some controversial issues with regard to the coordination of the euro area reforms. Several non-euro EU Member States, having no opt-out clause, expected a possibility to take part in the Eurogroup summits as observers. They were afraid of not taking their national interests into account, especially in the field of banking sector restructuring. This tension was partly reduced when the non-euro Member States were allowed to accede to the banking union. The procedure of double simple majority was proposed as a way to proceed on some cases in the framework of the European Banking Authority (European Banking Authority, 2014). The non-euro Member States accepted the need for the ECB to act decisively to rescue the euro area with operations such as the LTRO, which could adversely affect the banking sectors of the non-euro Member States.

CHALLENGES

Keeping the political unity of the whole EU after Brexit

Thus far, the EU and euro area institutions have avoided creating divisions between the euro and non-euro Member States. However, Brexit could create a completely new situation. When the United Kingdom, the largest of the non-euro Member States, leaves the EU, the balance of power between the euro and non-euro Member States will change significantly. It could lead to the situation that the interests of the non-euro Member States are marginalised. After Brexit, the voting power of those states in the double majority system will decrease markedly. For example, the non-euro Member States will lose one Commissioner and one vote in the European Council. Perhaps the most significant bargaining power loss will occur in the European Parliament, where the number of MEPs elected from a given country depends on its population. Currently, the non-euro Member States are inhabited by 33.3% of the whole EU population. Once the UK leaves the Union, this percentage will drop to 23.5%. Consequently, blocking some decisions unfavourable for the group of non-euro Member States could become difficult.

> When the United Kingdom, the largest of the non-euro Member States, leaves the EU, the balance of power between the euro and non-euro Member States will change significantly. It could lead to the interests of the non-euro Member States being marginalised.

The idea of deepening the divisions between the euro and non-euro Member States could be devastating for the stability of the European Union. The group of the non-euro countries is quite heterogeneous, but they have one thing in common. All of them are strongly attached to the EU economic model that is centred around the single market. Thus, isolating this group after Brexit could lead the euro area (and, as a consequence, the whole EU) in the direction of less economic openness and free market orientation. Furthermore, the political cohesion of the EU is needed in times of geopolitical strains such as turbulence in global trade or negotiations on the global standards for digital economy. Divisions within the EU itself could encourage the actors outside the EU to take advantage and play the EU Member States against each other.

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It is important to take into account that deepening the division between the euro and non-euro Member States would also mean splitting the EU economy and making it less integrated. Even though the share of the non-euro Member States in the GDP of the whole EU will decrease significantly (from 27.1% to 14.3%) after Brexit, they will still represent the most dynamic part of the EU economy. Between 2009 and 2018, the GDP of the euro area increased annually, on average, by 1.4%, whereas the GDP of the non-euro EU Member States (excluding the UK) went up by 2.9%. Thus, neglecting the interests of the non-euro Member States would mean weakening the competitiveness of the fastest growing and stable EU economies.

Protecting the single market and pan-European value chains

The greatest economic achievement of European integration was the establishment of the single market, creating conditions for the development of intra-industry trade and pan-European value chains. The largest EU multinationals have suppliers and subcontractors both in the euro and non-euro Member States. For example, Slovakia is not characterised by a higher level of economic integration into the eurozone than the Czech Republic. Moreover, economic ties between some euro and non-euro EU Member States are often stronger than within the euro area. For instance, the trade turnover between Germany and Poland is greater than between Germany and Spain and Slovakia is more closely economically integrated with Czech Republic than with any other euro area member state of a similar size. Non-euro Member States, such as the Czech Republic, Denmark, Hungary, Poland or Romania, play an important role in value chains of Germany, a country that is driving the euro area current account surplus the most. The high level of economic integration is a positive factor and makes the EU multinationals able to compete in the global markets.

It is essential that the reforms of the euro area should no weaken the level of the whole EU economic integration by undermining the principles of the single market. The ECB's unconventional monetary policy, since its introduction, has raised doubts that it might serve economic policy goals other than stabilising inflation (Matussek, 2019). The ECB created programmes not only to support some euro area Member States, but also certain financial institutions. It could pose a challenge for the non-euro Member States as some of the ECB's unconventional measures could favour euro area companies at the expense of non-eurozone undertakings. There is some evidence that this policy has affected the market structure and changed conditions (Bats, Hudepohl, 2019) for the euro and non-euro banks (Daetz et al., 2018). LTRO is a valid and recent example of this problem. Not only does the LTRO alleviate difficulties in accessing liquidity for the banking sector of the euro area and reduce the systemic risk, but it also could be interpreted as a system of subsidies granted to the euro area banks on non-market terms (European Financial Congress, 2019). The programme targets not only banks of the euro area which struggle with liquidity problems, but also banks in better financial condition which can apply for low-interest financing as well (IMF, 2011). At the micro level, less efficient companies from the euro area could crowd out more efficient businesses from the non-euro countries due to the advantage of cheaper financing. The ECB admitted that before the introduction of the LTRO programme it had not fully analysed its consequences for the competition in the EU (European Central Bank, 2012). Since the ECB still moves in a new territory with an unknown impact on the sphere of economic policy, more EU institutions should be engaged in *ex ante* and *ex post* evaluation of its effects on the single market.

Another controversial issue is the Budgetary Instrument for Convergence and Competitiveness (BICC). Before the process of its creation started, it seemed that the BICC should primarily serve the goals of improving competitiveness and stabilisation of business cycles, as eurozone Member States experienced asymmetric shocks. The lesson from the euro area crisis is that there could be a problem with keeping stable public investment expenditures when an asymmetric economic slowdown occurs. In such a case, the Stability and Growth Pact obliges the governments to reduce expenditure when private demand significantly decreases. However, quite unexpectedly, in the BICC the aim of stabilisation was rejected and the goal of convergence introduced. This could be problematic from the perspective of the EU institutional framework as there is a risk that the BICC, by mimicking the basic functions of the EU cohesion policy, could marginalise it. It is important to take into account that economic disparities within the euro area are lesser than those between the euro and non-euro Member States. The BICC should not weaken the tools and budget of the cohesion policy. The cohesion policy proved to be successful in reducing disparities in the EU Member States (European Commission, 2016; Institute of Structural Research, 2016; Crescenzi, Fratesi, Monastiriotis et al., 2017). Furthermore, it should be taken into account that the euro area Member States in financial distress have already obtained financial assistance. Greece, for example, thanks to low interest rate loans, saves EUR 12 billion (6.7% of its GDP) on an annual basis (Regling, 2018).

There are also questions concerning the way of financing the BICC. It is essential that the taxes to be introduced to finance the BICC should not impede trade between the euro and non-euro

Member States. For example, introducing some kind of CO_2 tax only in the euro area could result in the need to implement some kind of carbon border tax, which could distort trade flows, as stated by Ms. Ursula von der Leyen (von der Leyen, 2019) in her application speech for the position of the European Commission President. As regards financial transaction tax, often referred to as a potential income resource for the BICC, it could divide the EU financial market. If a special corporate tax is introduced only in the euro area, it should be clearly explained under what conditions companies from other non-euro Member States should be burdened with additional public levies.

More determination in reducing macroeconomic imbalances

A valid instrument to improve convergence of the business cycles in the euro area could be the macroeconomic imbalance procedure, even though, so far, it has not been used sufficiently well (Bricongne, Turrini, 2017). Excessive macroeconomic imbalances weaken the efficiency of the single monetary policy and carry a threat not only to the economic stability of the euro area, but also to other EU Member States. In recent years, insufficient adjustments of labour costs, inflation differentials, credit growth and the current account balance have been observed (Pierluigi, Sondermann, 2018). It is important to continue adopting an approach that current account imbalances need to be corrected by deficit as well as surplus countries. High stock in public and private debt has not been reduced, especially in the Member States most affected by the euro area crisis. There is only modest progress in certain surplus countries, where faster wage growth partly reduces current account surplus, but there is still inadequate adjustment of high corporate savings and compressed household consumption (IMF, 2019). The euro area carrot and stick approach to introducing policy corrections seems to be weak and too inconsistent. Although some countries have recorded long-standing imbalances since 2012, their balances have been not labelled as excessive.

RECOMMENDATIONS

Brexit poses a challenge to the relations between the euro and non-euro EU Member States. Thus, the EU should stick to the rationale that as much as the statement that the stability of the euro area is essential to the stability of the non-euro Member States is true, the opposite is also true. Thus, it is crucial to avoid creating any divisions between those groups of countries, e.g. through insufficient dialogue or ignoring the interests of the non-euro Member States in the process of reforming the euro area. As after Brexit almost all non-euro EU Member States (except for Denmark) will have an obligation to join the eurozone they should be informed about the reform plans of the common currency area, especially if those affect the single market or change the rules for entering the monetary union. This could build trust as well as convince and encourage the non-euro Member States to eventually adopt the euro. New dialogue mechanisms could be helpful for preparing a common response to the next economic crisis and make the euro area more robust without fragmenting the single market. There is a need for a precise clarification of the relations between the EU and euro area institutions and it should be ensured that their competences do not overlap.

New euro area mechanisms should not lead to single market fragmentation, since it could adversely affect value chains of European corporations. On the one hand, the measures undertaken to reform the monetary union stabilise the euro area; on the other hand, they could have an adverse impact on the integrity of the single market. As the ECB with its unconventional policy still moves in a new territory, more EU institutions should be engaged in *ex ante* and *ex post* evaluation of its effects on the sphere of the real economy and the single market. The European Commission should analyse whether the ECB programmes, such as the LTRO, influence the market position of the euro area banks in other EU Member States. In this respect, there is a growing need of more activity, greater speed and more transparency of DG COMP in assessing the ECB policy impact on the integrity of the single market. DG COMP should present new analytical tools to examine whether ECB activities do not distort the single market. Introducing a permanent coordination mechanism between the ECB and DG COMP could be proposed. If the analysis proves that the ECB measures are necessary to stabilise the euro area, new sterilisation measures could be offered from the national banks for the non-euro area banks to limit the effect of the ECB policy on their competitive positions.

It should be verified whether the new euro area instruments, such as the BICC, do not imitate the existing EU mechanisms. It would be valuable for the BICC to focus on smoothening the business cycle by keeping public investments stable in the event of asymmetric shocks rather than by lowering income gaps and mimicking EU cohesion policy functions. The most transparent way of financing the BICC would be direct intergovernmental transfers as it is structured in the case of the Multiannual Financial Framework. It would be the least distortionary for the single market. It should be clearly defined how BICC resources could be used by the ERM2 Member States. Thus far, it seems probable that the BICC expenditures will be set once every 7 years, with some flexibility allowed. It is important to create some opportunity to use those resources for the EU Member States entering the ERM2 or the euro area when the financial plan for the following years is already set.

The euro area should focus more on the execution of the macroeconomic imbalance procedure. The whole carrot and stick framework could be proposed to accelerate the process of imbalance reduction. It is important that excessive current account imbalances should be reduced by deficit as well as surplus countries.

> New euro area mechanisms should not lead to single market fragmentation, since it could adversely affect value chains of European corporations. As the ECB with its unconventional policy still moves in a new territory, more EU institutions should be engaged in *ex ante* and *ex post* evaluation of its effects on the sphere of the real economy and the single market. The European Commission should analyse whether the ECB programmes, such as the LTRO, influence the market position of the euro area banks in other EU Member States.

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6. Energy

By Magdalena Maj, Aleksander Szpor

The Energy Union, the overarching goal of the EU climate and energy policy for 2015–2019, has materialised in three major outcomes[4]. Firstly, it is the development of energy infrastructure[5] across all the EU Member States; secondly, the adoption of a new legislative framework, the 'Winter Package'[6]; and thirdly, the establishment of ambitious targets for 2030. All the three elements strengthen the EU political mandate to further advocate for global efforts to limit climate change. These outcomes were built upon the five key issues outlined in the strategy: (a) security, solidarity and trust; (b) a fully integrated internal energy market; (c) energy efficiency; (d) climate action – decarbonising the economy; (e) research, innovation and competitiveness, to be discussed below.

The idea of the Energy Union was created under a strong impact of the gas crisis from 2012 and earlier 2009 and 2006. Therefore, the energy security was an opening issue of the strategy. The main goal was to diminish the energy dependence on fuel imports, yet it was not achieved. This was primarily a result of economic growth which returned to Europe a few years after the 2008 economic crisis and led to a rise in energy demand. Depleting domestic fossil fuel reserves also played a role. In contrast to what was assumed initially, measures related to energy efficiency – another important issue of the Energy Union – or the adoption of renewable energy sources (RES) have only had a limited impact. On a positive side, basic strategic infrastructure has been built (or, in some cases, is about to be built) to improve the functioning of the gas and electricity markets. In the gas sector, new routes of imports have been created. This has a potential to limit the scope for external political pressure of the main exporters and, at the same time, to bring down gas prices closer to the market price level in all the Member States. Secure supplies of gas at a competitive price are particularly important to coal-dependent countries as it is considered a vital part of the fuel mix which can make the energy transition happen (European Commission, 2019). Investments in interconnectivity, both in gas and electricity, were also a good direction. In the electricity sector, however, this may not be sufficient to ensure that all the Member States manage to reach interconnectivity at a declared level of 10% of their installed electricity production capacity by 2020 (Roldan-Fernandez et al., 2018).

[4] The Energy Union was drafted in 2014 and adopted by the European Commission on 25 February 2015.

[5] The main strategic investment projects include 6 cross-border gas interconnections, 2 LNG terminals and 4 electricity cross-border interconnections. The main instruments of the EU support to development of the strategic energy infrastructure are trans-European energy networks (TEN-E) and projects of common interest (PCI) (financed from the Connecting Europe Facility).

[6] The Clean Energy for All Europeans package contains 4 directives: Energy Performance of Buildings Directive 2018/844, Renewable Energy Directive (EU) 2018/2001 (recast), Energy Efficiency Directive (EU) 2018/2002 (revised), Directive (EU) 2019/944 on common rules for the internal market for electricity and 4 regulations: Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action, Regulation (EU) 2019/941 on risk-preparedness in the electricity sector, Regulation (EU) 2019/942 establishing a European Union Agency for the Cooperation of Energy Regulators, Regulation (EU) 2019/943 on the internal market for electricity.

Actions undertaken to improve the energy security vastly contributed to the realisation of another key issue of the Energy Union, i.e. the integration of the energy market. However, regardless of the efforts to build an internal energy market for gas, there are still notable differences in gas prices and the degree of competitiveness among EU regions. Historically, it was a result of the lack of gas supply diversification, especially in Central and Eastern Europe (CEE) (Dudek, Szlagowski, 2019). Some measures have been adopted in order to build a more competitive, customer-centred, flexible and non-discriminatory electricity market. Investments in transmission grids and storage capacity aimed at improving the market flexibility. Changes in the electricity market allow for better RES integration and offer access for consumers' production, which increases the degree of competitiveness. Despite that, the main tools applied are not fully in place yet, which can be observed, for instance, in increasing – at least in some Member States – energy market concentration in retail markets (CEER, 2018). As a result of the EU's commitment to the full ratification of the Paris Agreement, the Energy Union gave attention to climate action, which has a serious side effect of pushing up electricity prices. Achieving ambitious climate goals may contribute to a growing problem of energy poverty and thereby general discontent with climate policies. The overall use of uptake instruments such as subsidised loans for thermal retrofitting or subsidies to electric cars, since both are exclusively targeted at the middle-income or even high-income groups of the population, will certainly not help to solve this problem.

> Regardless of the efforts to build an internal energy market for gas, there are still notable differences in gas prices and the degree of competitiveness among EU regions. Historically, it was a result of the lack of gas supply diversification, especially in Central and Eastern Europe.

Much effort has been put to stream the research and innovation in the direction that would speed up decarbonisation and develop clean energy technologies in order to boost the EU's competitiveness. Many technologies, such as solar and onshore wind energy, seem to achieve a degree of maturity, which allows them to compete with other conventional energy technologies. Some technologies, such as CCUS, are still at an early stage of development and despite best efforts, their costs are hard to bring below the level of necessary investment even in the long term. Furthermore, there are technologies like capacity storage whose importance to the transformation is pivotal and, at the same time, their development is promising enough to promote them even more. There are also energy sources such as hydrogen or nuclear fusion, where technological progress has advanced recently and seizing this opportunity needs to be reflected in substantial scaling-up of the current support programmes. Integration of different technologies into a system will also be of crucial importance, although it will not suffice to conduct the ambitious transformation.

The Green New Deal for Europe forms the next political agenda for the EU climate and energy policy. By proposing even more ambitious climate targets for 2030, the new Commission shows that it is able to deliver more than what was negotiated with the Council and the Parliament during the previous term of office. To do that, the Commission needs to consider several challenges.

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CHALLENGES

The EU needs to speed up the reduction of GHG emissions to meet the Paris Agreement goals and to avoid radical climate change. As indicated by the lessons from the implementation of the Lisbon Strategy, the vision and ambitious goals are not sufficient to prove the global leadership of the EU. In fact, undelivered goals have an adverse effect on the EU reputation. Matching the ambitious GHG reductions with an actual capacity of the EU is therefore an overarching challenge. While doing so, however, it needs to consider related costs for social welfare and political stability.

Weakening cohesion between the richest and the poorest European regions indicates that the space for policies involving additional costs for citizens is ever smaller. Limiting the rise in energy prices, which deprive part of the citizens of one of basic goods and lead to energy poverty, is therefore another important challenge. It concerns both individual households and local governments which in some cases may become the victims of country-level policies. Regions with coal-based economies will also experience job losses related directly and indirectly to the mining industry. More ambitious climate targets may create more serious problems of political acceptability for further energy transition.

The simplicity of the effort sharing mechanism which is currently based on one main indicator – GDP *per capita* – is a quality. Such a general indicator makes it clear that any attempt to look for the final and complete answer about the fairness in effort sharing is doomed to fail. Yet lifting the ambitions regarding green growth requires more complex ways of assessment and differentiation to ensure a more accurate selection of potentials. This should allow to select adequate policy tools and adjust their amplification with regard to particular countries and regions.

> The progress which has been made in relation to energy security in terms of strategic infrastructure and legislation has put in light another problem related to the cyber security of European energy systems. Between 2007 and 2018, the number of such attacks reached 60,000 worldwide. Many of those targeted strategic infrastructure, including the energy sector.

The progress which has been made in relation to energy security in terms of strategic infrastructure and legislation has put in light another problem related to the cyber security of European energy systems. Between 2007 and 2018, the number of such attacks reached 60,000 worldwide. Many of those targeted strategic infrastructure, including the energy sector (Dudek and Szlagowski, 2019). Increasing interconnectivity of this sector in the EU will require relevant protection at the European level to avoid blackouts in consequence of cyber-attacks. It will be equally important to address the risks of data leakages related to smart metering, smart grids and demand-side response measures based on information technology (IT) solutions.

Achieving all the 20/20/20 targets by all the EU Member States individually is not certain at this point, but it already seems very likely for the EU as a whole. The most problematic target is the one related to renewables. Solar and wind energy are considered to be the most prospective sources of clean energy[7]. However, despite falling levelised costs per unit and the achievement of the parity grid in many locations in Europe, their wider application often remains too expensive due to back-up costs and other factors (Murray, 2019). Balancing the intermittency of RES at affordable cost is the key challenge for their integration into grids, particularly in centralised energy systems based on inflexible base load capacities. Moreover, for most EU Member States, the incentive scheme chosen to meet the respective renewable target does not allow for interaction with policy instruments in other countries (Pepermans, 2019).

RECOMMENDATIONS

To overcome the main challenge faced by the new Commission, i.e. to reconcile the ambitious and costly emission reduction with the protection of vulnerable energy consumers, a new instrument should be implemented. The Just Energy Transition Fund (JET Fund) is to reach the most vulnerable consumers, communities and regions and to provide them with both financial and technical assistance to tackle the problem of rising energy prices in a way that would ensure climate friendly solutions. As the instrument is particularly addressed to individual households and communities, it would target issues such as energy efficiency (thermal retrofitting, the replacement of heating/cooling systems, RES installation, local infrastructural projects). To properly address this instrument, the existing structural differences among EU Member States should be taken into account. Furthermore, as country-level analysis will not be sufficient to grasp an appropriate degree of differentiation, using the regional level of indicators is recommended. The JET Fund can be based on a combination of the Regional Human Development Index (HDI) and GDP (in PPS) (Dudek, Szlagowski, 2019). It could be supported by other indicators such or employment in carbon-intensive industries (Alves Dias et al., 2018) to receive a more comprehensive image of challenges and opportunities.

The cybersecurity of the European energy sector should be put in the spotlight of the new climate and energy agenda. The pace of energy transition will largely rely on the use of smart metering and smart grids as they will determine the effectiveness of different energy efficiency measures and the capacity to integrate new intermittent RES into grids. This task requires a coherent set

[7] Their advantage – continuously falling costs – also has a negative side, i.e. rewarding the latecomers. One of the main challenges here is not only to increase the frequency of the monitoring of their adoption, but mostly to support businesses across all the Member States, which could speed up their wider use.

of measures put together in the form of a strategy that includes defining cyber risks, monitoring and reporting about cybersecurity across all the Member States as well as establishing countermeasures to increase resilience to such attacks. A relevant body to perform this task is the Agency for the Cooperation of Energy Regulators (ACER) with the support of the European Union Agency for Cybersecurity (ENISA) (Dudek, Szlagowski, 2019).

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The fast pace of fossil fuel phase-out from European industry does not guarantee that the same process will follow in other regions as well. To increase the chances that the EU leadership will materialise, developing with the World Trade Organisation (WTO) a way to adopt an EU carbon border tax is needed. It could help to avoid carbon leakage and safeguard the competitiveness of EU industry (Gąska et al., 2019). With an appropriately transparent and inclusive process, such a tax could allow a gradual decrease in free allowances within the EU-ETS (Mehling et al., 2018) while sending an additional signal to energy-intensive economies not to postpone investments in modernisation.

While transforming the energy mixes, the measures need to be geographically adjusted. For low-carbon economies, the phasing-out of gas may be the right move to further limit their emissions, whereas in some of the carbon-intensive economies gas is still the only meaningful transition fuel. Further support for the gas transmission and distribution infrastructure is particularly important in sectors and segments where it replaces coal.

The new allocation of assistance to R&D in different technologies needs to take account of new trends. Support for mature technologies among RES, e.g. solar and wind energy, should be directed to storage, hydrogen and IT solutions (DSR) as all three will have a great potential for solving the basic problem of balancing intermittent energy sources in the system.

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7. Capital market

By Katarzyna Szwarc

STATE OF AFFAIRS

Since its inception in 2015, the Capital Markets Union (CMU) has been considered a long-term project. Its strategy for mobilising and re-orienting capital flows towards long-term investments in the real economy was aimed at reviving European markets drained by years of financial crisis.

Well-developed capital markets can translate into higher long-term returns on investments, job creation and thus economic growth. They are better equipped than banks to bear higher risks stemming from investment in innovation and to absorb shocks. And whilst some evidence suggests that growth in capital market-based economies is less dynamic (European Systemic Risk Board, 2014), it can also be considered more sustainable. Importantly, the involvement of capital markets is crucial to meeting challenges such as transition to a carbon-neutral economy or providing adequate pensions in ageing societies.

Against this backdrop, the CMU has rightly focused on developing a diversified financial system to complement bank financing, easing access to public markets for all companies, including small and medium-sized enterprises, facilitating cross-border investment within the EU and deploying finance to deliver environmental sustainability (European Commission, 2015).

EU capital markets bracing themselves for a long march

Despite the 2019 delivery date, the results of CMU policies have been moderate so far. The reliance of EU non-financial enterprises on external finance from banks remains high at 70% (European Investment Bank, 2018), compared to 30% in the US (European Central Bank, 2016). Meanwhile, only 0.6% comes from the issuance of equity and 1.5% from that of bonds (European Investment Bank, 2019).

Indeed, growth in the EU equity market has been sluggish. While the number of IPOs on European stock exchanges has increased slightly since 2015, their value has dropped by more than half to EUR 23 billion. This can partly be attributed to low interest rates which translate into relatively lower costs of debt financing and push companies towards the debt rather than equity market. Also, a general global downward trend in the number of companies going public has been observed (Wright, 2019). Nonetheless, the equity market in Europe remains only half as big in the US; relative to GDP, it is just above 50%, compared with the US at 149% (own analysis based on data from the World Bank, CEIC, Instrat).

Investment by EU private equity funds has been rising steadily since 2012, almost reaching pre-crisis levels in 2017, with over EUR 90 billion raised and EUR 73 billion invested. At the same time, EU venture capital noted record highs of EUR 7.7 billion raised (European Systemic

Risk Board, 2014) and over EUR 6 billion invested (EIBIR 2018/2019, op. cit.). However, these figures lag far behind the US where private equity funds raised USD 453 billion in 2017 (Prequin, 2018) and invested USD 303 billion (American Investment Council, 2019). US venture capital funds invested USD 84 billion in that year (NVCA, 2018). European companies equally continue to receive far less funding from venture capital funds, only 0.04% of the EU GDP, compared to 0.33% in the case of US businesses and almost 0.38% going to Israeli undertakings (European Investment Bank, 2019).

In addition, European citizens rely on banks more than their US counterparts do; 30% of their household savings are kept at bank accounts compared to only 12% on the other side of the Atlantic, where 55% of savings are invested in equity, bonds and funds compared to 32% in Europe.

Green bonds are by far the largest segment of ESG investments globally. While growing dynamically, also among EU Member States that lead in global issuance, they still represent a small share of the overall debt instruments issued. Estimating the size of the European truly 'green' instruments market continues to be a challenge though, due to the lack of universal standards. Within that context, the recently adopted EU taxonomy for evaluating the sustainability of investment products is only the first but important step forward (Financial Stability, Financial Services and Capital Markets Union, 2019).

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European investors remain attached to their home markets and the cross-border activity in the EU capital market has proven modest so far. Whilst price convergence amongst Member States has moved steeply upwards since the launch of the CMU, growth in cross-border asset holdings has been significantly less dynamic (European Investment Bank, 2019). As a result, markets in some Member States benefited more from the CMU than others, with investors generally favouring offerings of bigger companies and large-scale transactions. These are more frequent in economies with longer capitalist traditions.

For the many or the few? – the CMU and local capital markets

Indeed, local capital markets such as Central and Eastern Europe continue to lag, not only behind the global leaders like the US or the UK but also their continental counterparts – Germany, France or the Netherlands.

While delivering 7.1% of the EU GDP, the CEE countries only accounted for less than 3% of the European IPO value and ca. 3% of the corporate bond issuance value in 2017 (Central banks data), with Slovenian, Slovakian and Bulgarian enterprises not issuing any bonds in that year. Poland has the highest equity market capitalisation relative to GDP at 30%. It is a considerably higher level compared to other countries in the region, yet still markedly below the EU average. CEE stock exchanges also remain much less liquid.

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The region received EUR 3.3 billion in private equity investments, only above 4% of the overall European volume, and represented 2% of the total EU venture capital investment value (Invest Europe, 2018). Importantly though, in Poland, the country to consume the largest share of those funds, only two transactions represented one-third of all investments in 2017, with half of the funds consumed by just one deal one year earlier.

Weak capital market indicators translated into lower availability of financing reported by firms in the region. More companies in CEE have indicated external finance constraints, 8% on average, with Romania and Poland at 13% and 12% respectively, compared to the EU average of 5% (European Investment Bank, 2018). Those constraints incentivise firms to accumulate more cash (to cover for future investments) which could otherwise be deployed in the market should access to external finance be easier. That, in turn, translates into lower liquidity, which further discourages entering capital markets to invest and raise capital. Thus, the vicious circle closes.

CHALLENGES

Matching growth with potential

The room for improvement is large for EU capital markets, despite any unfavourable macro trends. Even based on conservative assumptions, the EU equity market could deliver 249 more IPOs raising additional EUR 39 billion every year until 2027, compared to the business-as-usual scenario. In debt markets, those would amount to 135 companies raising EUR 351 billion respectively. If SME growth markets were as developed as e.g. in the UK, there could currently be another 3,602 small and medium-sized companies listed on European exchanges, translating into EUR 219 billion more capital raised (Asimakopoulos, Wright, 2019).

This potential is even bigger for CEE capital markets which are converging with those of the rest of Europe, but at too slow a pace. There is a much wider gap between most mature European capital markets and local markets than between the EU28 and the US. In Poland, which is by far the most dynamically developing market in the region, 122 firms managed to raise only EUR 7 billion in capital markets in 2017 against EUR 141 billion raised by 1,035 businesses in Germany. In the same year, 1,342 undertakings raised EUR 189 billion in the UK. Estimations based on historical growth rates indicate that in the following ten years the market will grow by ca. 50%, allowing 17 additional firms to raise EUR 4 billion.

Those results could be improved substantially. According to estimations, Poland could double the utility of its capital market by 2027. If CEE Member States matched their development potential, additional 294 enterprises could raise over EUR 30 billion more by that date, compared to the business-as-usual scenario (Asimakopoulos, Wright, 2019). The corporate bond market appears to have the biggest growth potential in the region, yet its increase will rely on the interest rate level.

Indeed, Central and Eastern European countries are already developing national strategies aimed at facilitating their capital markets' expansion through a combination of educational programmes, tax policies and regulatory initiatives.

However, meeting their growth potential will primarily require the EU to address a number of barriers and challenges, in particular those faced by local capital markets.

Bridging the funding gap in local markets, with a particular focus on CEE

Unlike the EU15, CEE countries have a relatively low potential for expanding local pools of capital. It will take a long time before their citizens' savings match those of their Western neighbours. Therefore, mobilising domestic capital is important but not sufficient. Attracting foreign investors will be of key significance for CEE to achieve higher levels of market development, equal to that of France or Germany.

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Major international investors favour larger-scale deals and high liquidity normally associated with mature markets. At the same time, local markets need such players to develop and mature. This, in turn, creates a virtuous circle effect and leads to divergence in the size of capital markets between Members States. Countering that trend requires bridging the funding gap to attract investors, thereby allowing local markets to gain pace.

Setting more precise targets for CMU policies

Small and medium-sized enterprises have always been at the centre of the CMU. Several policies are currently in place to support them in securing funds in capital markets. With costs of an IPO relatively higher in local capital markets, EU funds are justly providing support to firms for which this is a substantial barrier. The Polish Agency for Enterprise Development, for example, deploys EU funds to support local businesses in financing their IPOs.

However, it should be noted that different capital structures are optimal at different stages of enterprises' development (Berger, Udell, 1998). Initially, internal finance is essential, with venture capital playing a greater role in the second step. Market-based financing is a viable solution only at the last stage, specifically where bank resources cannot match business needs.

Efficient capital markets should be able to secure growth capital for firms at various levels of development. This way, undertakings for which capital markets are a viable source of external financing will be able to secure it, thereby freeing up bank balance sheets for smaller companies that need them most.

Providing cross-border investors with clear and accessible information about local markets

Opportunities in local markets such as CEE can provide high returns, but those are often relatively small in value. For example, all large equity IPOs in 2018 took place on the German and UK stock exchanges (PwC, 2019).

As a result, local markets receive less attention from the media, data providers and Credit Rating Agencies, leading to narrower coverage by analysts and higher costs for investors to obtain reliable information about the available instruments.

The latter trend may have been exacerbated by the recent unbundling of research costs required by the revised Markets in Financial Instruments Directive (MiFID II) (Official Journal of the European Union, 2014). As of its application in January 2018, investment research has a transparent price tag attached to it. The policy, while having a positive downward effect on prices, has also incentivised investment managers to ration consumption of professional analysis, likely starting with that on lower-value markets. The impact of research unbundling on local markets should therefore be carefully considered by the Commission.

Markets in which access to information is costly have larger shares of external financing being provided by banks. Building more efficient and liquid capital markets in CEE will therefore require bridging the information gap.

Designing a proportionate regulatory framework that works for all markets

One of the pledges of the CMU is to facilitate access for small and medium-sized enterprises to capital markets by scaling and simplifying the European regulatory framework. And whilst it remains to be seen if the recent amendments, such as the introduction of the 'EU Growth' prospectus or lighter requirements for issuers whose instruments are already admitted to trading, deliver positive results, they are undoubtedly steps in the right direction.

However, despite those changes, EU legislation still too often provides an unlevel playing field for businesses and investors in local markets. The lack of proportionality in the capital market regulatory framework is the main factor contributing to that. European capital markets are different animals in terms of their size, liquidity and investor profile. Thus, any one-size-fits-all solutions are likely to disadvantage some Member States.

> EU legislation still too often provides an unlevel playing field for businesses and investors in local markets. European capital markets are different animals in terms of their size, liquidity and investor profile. Therefore, allowing local markets to catch up with their peers requires more proportionality to be introduced into the EU capital market regulatory framework.

Moreover, too many requirements create regressive compliance costs by including a large fixed component, thereby creating a significant entry barrier for firms in local capital markets. This negative effect is likely to be even greater for entirely new entrants such as FinTech companies.

Therefore, allowing local markets to catch up with their peers requires more proportionality to be introduced into the EU capital market regulatory framework.

Financing the EU transition to a carbon-neutral economy

The transition to a fully sustainable economy is estimated to cost EUR 520–575 billion annually by 2050 (European Commission, 2018a) and capital markets are well-placed to mobilise finance to cover the bill. However, in order to allocate scarce financial resources efficiently, investors will require appropriate tools to evaluate their investments' impact on the environment. Against this backdrop, the EU Commission's Sustainable Finance (European Commission, 2018b) initiative makes a positive step towards transparency by requiring financial institutions to provide information about the products they invest in and offer to retail investors. However, the initiative does not extend to real economy companies, issuers of equity and debt that will play a crucial role in translating green policies into actions.

Disclosure requirements will need to extend to undertakings seeking funds across Europe to prevent green-washing and ensure that capital markets support, not undermine, the transition.

RECOMMENDATIONS

The EU has a number of instruments at hand to facilitate convergence between capital markets and their segments. For example, the funding shortage in SME growth markets is filled by European Structural and Investment Funds (ESIFs). In the 'Agenda for Europe', the Commission President-elect, Ursula von der Leyen, proposes a new private-public fund specialising in SME IPOs. A solution on a similar scale is needed to bridge the funding gap between mature and local markets. Therefore, European Structural and Investment Funds should be deployed directly to invest in local capital markets to narrow the funding gap, thereby allowing these markets to catch up with Member States with longer capitalist traditions.

Directing EU funds to support firms seeking external financing is an important factor in encouraging businesses to use forms alternative to borrowing from banks. EU funds should continue to support undertakings seeking market-based finance, with a particular focus on local capital markets such as CEE. However, CMU policies should concentrate on assisting companies in securing forms of financing which are most appropriate for them. Not every enterprise is eligible for public forms of external financing. Therefore, CMU policies should be more tailored to better reflect the financing needs at various stages of business development. Supporting the issuance of equity and debt by companies most viable for market-based financing would open up bank balance sheets to smaller firms that need them most.

Building more efficient and liquid capital markets in CEE will require bridging the information gap, particularly between cross-border investors and local markets. This could be done by creating an accessible, transparent and investor-friendly platform supplying standardised information about investment opportunities and listed companies to investors across Europe. Therefore, the CMU should facilitate the creation of a central information platform to provide investors across Europe with access to sufficient, transparent and reliable data on public companies, upcoming issuances and other investment opportunities in all Member States.

> Building more efficient and liquid capital markets in CEE will require bridging the information gap, particularly between cross-border investors and local markets. Therefore, the CMU should facilitate the creation of a central information platform to provide investors across Europe with access to sufficient, transparent and reliable data on public companies, upcoming issuances and other investment opportunities in all Member States.

The CMU regulatory framework has been improved slightly, yet substantial barriers remain. In particular, local capital markets continue to struggle with the lack of proportionality in its requirements. A comprehensive review and targeted revision of the CMU regulatory framework is urgently needed to ensure it is sufficiently proportionate and creates a level playing field for local markets.

The EU has already made the first step towards standardised ESG reporting in capital markets. However, disclosure requirements will need to extend to companies seeking financing across Europe to prevent green-washing and ensure that capital markets support, not undermine, the transition. A standard for reporting information about environmental footprint should be developed at the EU level to prevent divergence, thereby ensuring that investors can assess and compare investment opportunities efficiently. Such standard reporting should also be simple to implement by issuers and applicable in a proportionate way. It should be initially rolled out as a voluntary programme.

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8. Customs

By Janusz Chojna and Joanna Gniadek

STATE OF AFFAIRS

The European Union Customs Union is the foundation of European integration; it ensures the functioning of the single market and the EU's position as the world's main trade bloc. Customs law regulations are adopted at the EU level and implemented by Member States' customs administrations. Since 2016, customs regulations and procedures throughout the EU have been regulated by the Union Customs Code. Modernising or creating the ICT systems that it envisages is essential to its implementation.

The Customs 2020 programme provides the organisational, methodological and budgetary framework for cooperation between national tax authorities at the operational level. It stipulates the establishment of expert teams to perform specific tasks by the countries concerned. The Customs Eastern and South-Eastern Land Border Expert Team (CELBET), made up of eleven Member States along the EU's eastern and southern border (Bulgaria, Croatia, Estonia, Finland, Greece, Lithuania, Latvia, Poland, Romania, Slovakia and Hungary), is especially active. It includes risk management, joint operational controls, training, making an inventory of equipment at border control points and analysing gaps.

For the outgoing European Commission, the following matters relating to the Customs Union were priorities: (i) managing the United Kingdom's exit from the EU; (ii) strengthening checks and combating fraud; (iii) better monitoring of the implementation of EU customs law; (iv) improving the customs administrations' efficiency; (v) taking advantage of innovation; (vi) optimising customs authorities' ICT systems and their use; (vii) responding to the challenges of e-commerce; (viii) using the Customs Union to improve EU security; (ix) continuing work on international relations, including by using the status of authorised economic operator in trade with third countries more widely (European Commission, 2018a).

Work was started on establishing the new Customs programme and a fund for equipment for customs checks. According to the Commission's proposal, the funds for managing the EU's borders would increase almost threefold, from EUR 13 billion in the current financial framework to EUR 34.9 billion in 2021–2027. A new EUR 9.3 billion Integrated Border Management Fund (IBMF) was foreseen. It would consist of two instruments: a Border Management and Visa Instrument and an Instrument for Customs and Control Equipment. The latter, with a proposed budget of EUR 1.3 billion for 2021–2027, is meant to support the purchase, maintenance and development of customs control equipment at all types of borders (land, sea, air and postal), covering up to 80% of eligible costs (European Economic and Social Committee, 2019).

CHALLENGES

Alongside customs bodies' traditional functions – managing growing trade flows across EU borders and collecting customs duties – tasks related to fighting terrorism and organised crime and protecting intellectual property rights are gaining in importance. In 2017, customs authorities seized more than 31 million counterfeit products with an estimated total value of over EUR 585 million at the EU's external border. A growing proportion of confiscated goods (43% in 2017) are counterfeit everyday goods that can be dangerous; for instance, articles used in healthcare and medicines, toys and electrical devices (European Commission, 2018b).

The challenges posed by the tech revolution will gain in significance. Mass digitisation, the Internet of Things, artificial intelligence, big data analysis and blockchain technology will create new business models, including in international trade (such as e-commerce), but they will also be sources of new threats to trade flows across the EU's external customs border and the functioning of the Customs Union.

> To address challenges and to counter such threats effectively, the functioning of the Customs Union based on a regulatory and institutional framework adapted to rapidly changing conditions, as well as customs authorities' infrastructure equipment, will be crucial. In both these areas, the Customs Union is in transition.

To address these challenges and to counter such threats effectively, the functioning of the Customs Union based on a regulatory and institutional framework adapted to rapidly changing conditions, as well as customs authorities' infrastructure equipment, will be crucial. In both these areas, the Customs Union is in transition. The implementation of the Union Customs Code by Member States, which began in 2016, proves to be a lengthy process. Some of its ICT systems are supposed to be implemented gradually by the mid-2020s and will depend on funding as part of the new generation of EU financial programmes for customs. The launch of those programmes will be conditional on the establishment of a new Customs programme and appropriate budgeting for this purpose as part the new financial framework.

It will be even more important, given the state of equipment at border crossings at the EU's external border, which is a major challenge. An inventory carried out by CELBET found that as many as half of the 174 land border crossing points examined lacked the basic tools for checks[8].

[8] According to CELBET, 53% of the inspected border crossing points had no automated number plate/container number recognition systems (ANPRS), 46% of those lacked scanners for cargo and vehicle inspection of trucks and wagons, whereas 51% did not even have manual control tools (European Commission, 2018a).

RECOMMENDATIONS

The Commission should continue work on implementing an efficient and effective system for checking the EU's external borders, combining the protection of persons, a social market economy, the security of sustainable production and sustainable trade between Member States and with third countries.

To this end, efforts already undertaken by EU institutions and Member States need to be finalised, in particular: effective implementation of the Union Customs Code, establishing a new 'Customs' programme and a fund for equipment for customs checks as well as maintaining the proposal to significantly increase the funds for managing the EU's borders in the new financial framework.

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To launch the planned fund for equipment for customs checks, work on making an inventory of the equipment and the types of efforts at the EU's external borders needs to speed up. So far, only 11 Member States protecting the EU's eastern and south-eastern border have completed this process.

The Commission should also consider the possibility of increasing funds (the budget) for the financial support instrument for customs control equipment – by raising total funding for managing the EU's borders or shifting it between individual items. The amount budgeted for 2,140 customs offices to purchase and maintain equipment – EUR 1.3 billion for 2021–2027 – seems much too low, given their needs and the scale of challenges faced. That is merely EUR 86,800 per year for each of the customs offices operating at the EU's external border.

The new financial support instrument should also envisage extra funds (a 'rapid response reserve') for unplanned expenditure, e.g. related to unforeseen events and the need for additional purchases, the deployment of more innovative equipment, etc.

In equipment supplies, priority should be given to customs offices with the heaviest burden, operating under the highest pressure or facing new challenges (such as new types of customs crimes or smuggling routes).

The Commission should ensure that the existing instrument for supporting customs control equipment is systematically updated, based on the development of the Internet of Things, cybersecurity, the digital tracking of products and other advanced uses of technology, and accelerate their dissemination.

To harmonise and improve the efforts of customs bodies throughout the EU, and to speed up the spread of new technology, a joint framework for training (European Economic and Social Committee, 2019) for the EU customs sector should be prepared and implemented.

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9. Data economy

By Ignacy Święcicki

STATE OF AFFAIRS

Data remain among the most discussed topics in Europe these days. From 'data is the new oil', to free flow of data, to virtual data warehouses, to data portability and start-ups – Europe keeps looking for the Holy Grail of the data economy. This is understandable as two out of the five most valuable global companies make over 80% of their revenues from data, monetised through targeted advertising (PIE, 2019b). Companies with the largest pools of consumer data, with over 500 million users, are all American or Chinese (PIE, 2019a).

Much has been said and written about the importance of data and the building of a European data economy in the previous term of the European Commission. The term 'data' has been analysed and divided into slices – from the regulatory point of view, for example, we have public sector information, high-value datasets (PSI Directive), personal and non-personal data (GDPR), machine-generated data (EC Communication 'Building a European Data Space'). From the user perspective, there may be other classifications – for personal data, for instance, data provided in exchange for online services, such as social networks; data in public registers, provided mandatorily; sensitive data, such as healthcare; and scores of other data generated by devices that we use and collected by various applications and companies.

The European Data Economy was estimated at around EUR 377 billion in 2018 and will grow to EUR 477 billion in 2020, in the baseline scenario (IDC, 2019). This is a slight increase, compared to the baseline scenario from a couple of years ago (European Commission, 2017; IDC and Open Evidence, 2017), but far from the high growth scenario which was an aspirational target. Between 2013 and 2018, the value of the data economy rose by 9.5% per year on average, while in the United States, for comparison, it went up by an annual average of 11.9% (own calculations based on (IDC, 2019)).

This is not to add to conventional complaining about the state of the digital sector in Europe. All the regulatory steps taken by the Commission and approved by the Council and the Parliament have set a right framework for the development of the data-based economy (Ilves and Osimo, 2019). The framework comprises the GDPR with data portability provisions, regulation on the free flow of data, ending unnecessary restrictions to non-personal data, broadening the scope of public sector information available for processing and re-use and guidelines for the exchange of private sector data. With this extended toolbox, it is now high time to master their use.

However, data should not be considered narrowly, only in terms of one factor of production. The regulation concerning data, especially access to data, has far-reaching impacts. It plays a crucial role in competition and the European Commission's competition enforcement, where the scale of operations of digital platforms and Internet companies is a first-order issue; to a large extent, it belongs in the area of digital taxation where business models based on data monetisation escape traditional taxation standards; it may also be a gateway to improving public policies; finally, it forms a basis for new business models, with a prime example of artificial intelligence.

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With more processing power available and refined algorithms, data analysis and subsequent prediction powers become cheaper (*How AI is Making Prediction Cheaper*, 2018). This, in turn, amplified the explicit and implicit value of data which have become an important input, complementary to processing power. As these processes occur at a breakneck pace, we have only recently started to connect all the dots and the available solutions are at an early stage of development.

CHALLENGES

The challenges of data may be summarised by *data overuse* and *data underuse* (Mulgan, Straub, 2019). Data overuse is related to a situation where data are used beyond what could be deemed as an interest of the owner of those data. This may happen in the case of data breach, but also when data are used for extensive profiling, such as that taking place in ad-supported models of social networks. Data overuse, in general, undermines trust in data processing and amplifies the other group of issues, *data underuse*. The data underuse type of challenge is a situation where there could be social or individual added value in sharing more data, but – due to the lack of trust, insufficient infrastructure or the absence of legal norms – the data stay with the owner. A prime example can be healthcare, where pooling data from health centres could improve diagnosis and foster prevention. Those two underlying challenges influence each other and can lead, depending on the prevailing impulse, to a vicious circle of insufficient oversight, security breaches and abuse of data or to a virtuous cycle of containing harmful behaviour, fuelling trust and the development of secure spaces for sharing and using data for public good.

The right elements are already in place, and a major challenge for you will be to put them into play. Firstly, citizens and companies need to be aware of the rights that they have and trust the exercise thereof. At present, EU citizens differ to a large extent in their awareness of the GDPR – from 63% aware in Sweden to 55% that have not heard of it in France. What is perhaps even more important, compared to 2015, there is a constant share of Europeans who feel in control of their data, and the shares of those who have read privacy statements or tried to make changes in default settings have dropped (European Commission, 2019). Without trust and without knowledge of data subjects' rights, the European data economy will develop below its potential.

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One can name many areas where there is social benefit to be achieved from more extensive use of data. Two examples are of significance here. One is information stored in public registers. That information has many of the benefits that are sought by researchers. On the one hand, it covers the whole population, is mandatory and usually comparable over time. On the other hand, public registers are often separated, data cannot be easily pooled together. This adds to the silos of decision-making processes in public administration. One needs to keep in mind that such data must be treated with special care as they may reveal vulnerable information about the citizens. There are, however, cases where the system of access to such data already exists – one could mention MONA and LISA in Sweden, ADRP in the UK or ELA in Poland (Jasiński et al., 2019). The GDPR allows for sharing such data under a specific legal basis. The challenge therefore is to support countries in creating such legal instruments, identifying relevant case studies and providing guidance in terms of standards that should be followed, in areas such as security, joining datasets, pricing.

The other example is related to personal data. European citizens gained strong protection in the form of the GDPR. At the same time, private data, often sensitive data, may be used to generate better public services or services tailored to individual needs. Health care could be a prime example here. If we could pool health records across a large group of patients, we might be able to better diagnose new patients and treat diseases in a more efficient way. However, this needs building trust in the institutions that would process such data. The challenge is to identify best practices for such 'data trusts' (Mulgan, Straub, 2019) and supporting their development, while keeping in mind that there is no 'one size fits all' solution.

Apart from creating schemes to share more data, the challenge in the field of data comes in effectively using data to stimulate competition on existing markets. The GDPR has allowed individuals to receive their data from a given entity and take them to another one. This is a very welcome step towards creating competition in otherwise monopolised services, such as search engines or social networks. An analogy (albeit a distant one, as one may argue) is with number portability in mobile and fixed networks. This regulation proved highly popular and broke lock-in effects in telecommunications networks. For example, in 2018 alone almost 2.5 million numbers were ported in Poland (UKE, 2019). The analogy with telecommunications has its limitations – first of all, telecommunication networks and operators are subject to a number of other regulations that make portability an effective instrument. Interoperability, price regulation, interconnection, all work to the benefit of an end-user. The challenge in the case of data portability is, firstly, to assess whether the current provisions are sufficient and, secondly, to draft further measures if deemed necessary. This needs to be done with caution, but the potential reward is high.

One area where the challenge is related to possibly insufficient regulation is access to private data. One the one hand, creating data spaces has already been promoted and this definitely needs to be continued. On the other hand, some data gathered by private entities may and should be used for the betterment of public services. A good example may be data on mobility. This category is mentioned as a high-value dataset in the PSI Directive, but the directive is limited in scope to public entities. With the current explosion of app-enabled mobility and mobility as a service, private companies get more transport data (i.e. data from bike and scooter rental schemes in cities, data from taxi apps and car-sharing companies). If used by a public authority, they may be used to optimise public transport, reduce congestion and better plan infrastructure in urban areas. San Francisco is spearheading this approach, with data from Lyft and Uber used to better understand transport patterns in the city and to mitigate negative consequences (San Francisco County Transport Authority, 2017).

RECOMMENDATIONS

In your term as a Commissioner, the issue connected with data will surely be central to many policies, from industrial policy and competition to taxation and better government. Taking actions in such a complex and evolving ecosystem requires precision and attention to details. Moving too slowly may hamper European start-ups and uphold current data giants. Making changes in a rush may foreclose business opportunities and keep Europe lagging behind the USA or China.

For individuals: building trust and awareness of the importance of data and of individuals' rights should be at the forefront. This will be an answer to the problem of data underuse. Fostering data trusts or similar spaces, where data can be safely processed and where benefits would be visible will be very important in the coming years. The concrete actions may include awareness campaigns with the promotion of best practices for trusted spaces. It would also be advisable to do research on the way privacy statements are formulated and the reasons for users' inaction – not reading the statements, not changing the default settings. The Commission should work on solutions that would nudge Internet users towards more active behaviour, building on insights from behavioural research, for example, see (Monteleone et al., 2015).

For competition and the data economy: Giving data portability a true meaning is an instrument for stimulating more data companies in Europe. At the same time, it can be an effective tool in competition enforcement. You should explore possibilities of using such an obligation both for existing monopolies and when assessing mergers. An analysis of complementary legislation should also be conducted in order to find out whether data portability can be an effective instrument without interoperability, interconnection or an obligation for metadata consistency across the sector. This is certainly a better approach than forcing the separation of companies, as discussed in the United States (Warren, 2019).

Data have a great potential for public policies. A possible regulation may be considered here, focused on the so-called P2G data access – where private companies share data with the public sector. But before regulating, you should make sure that countries make use of non-regulatory measures and encourage private businesses to share data in the spirit of the PSI Directive. Such sharing may include different tiers or levels of openness – undertakings that are public or perform public service tasks should make related data open for re-use, while selected other companies should give access to their datasets to public authorities for public policy purposes only.

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Going one step further with public sector information, you should also work to encourage countries to make use of specific GDPR provisions and allow research based on data from public registers. As this involves both national legislation and funds for connecting the registers, cleaning the data and providing secure access infrastructure, the role of the Commission should be twofold. In terms of legal and practical arrangements, you should provide a network for support and exchange of best practices between interested administrations. In technical terms, you should ensure that countries are able to apply for funds that can help cover at least part of the costs.

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10. Artificial Intelligence

By Mikołaj Firlej

AI will surely be one of the top items on the to-do-list of the whole Commission and your task, as the Digital Commissioner, will be to square the circle of Europe's lagging AI industry, high privacy standards and geopolitical rivalry. All this should be done swiftly as initiative in the field of AI has already been announced by the new Commission President as something to be prepared in the first 100 days of the new Commission (von der Leyen, 2019).

10.1. The EU's place in a globalised and competitive world

STATE OF AFFAIRS

AI is considered to be a transformative technology in global competition between countries. Most developed economies recognise the transformative nature of AI[9] and have adopted different AI strategies which reflect their own political, economic, cultural and social systems (Nesta, 2019). The global competition in AI is driven primarily by China and the US, having committed significant resources to foster AI development (Meng Jing, 2018; The China State Council ADIP, 2017; DARPA, 2019).

China has two structural advantages in developing AI over other countries. Firstly, it strictly follows a top-down government strategy – the private sector, academia and the government work together to achieve a national AI goal. Secondly, China has the largest potential consumer database under its administration and at its disposal with around 1.4 billion people and increasing numbers of digitally connected users. Chinese services have been gaining a global footprint, especially in Asia (e.g. Tencent's WeChat smartphone app has over 1 billion users worldwide) (PIE, 2019).

[9] The EU defines AI as systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals. AI systems can be solely software-based or embedded in hardware devices. AI is different from conventional computing in its ability to learn from data. Conventional systems are rule-based systems with a set of instructions for a defined set of scenarios. AI systems are learning-based systems that collect and process data from the surrounding ecosystem and, as a result, they establish trained models, patterns of behaviour, to solve problems beyond the capability of conventional programming. AI encompasses a broad range of reasoning and learning approaches, such as machine learning (ML) and a class of techniques called deep learning (DL). ML is a method of training algorithms so that they can learn how to make decisions. DL algorithms aim to realise ML and are methods inspired by the information processing patterns found in the human brain.

However, China's major disadvantage is its chip market, essential for a wider development of AI. So far, China has remained largely dependent on American providers such as Qualcomm or Nvidia (Simonite, 2017). Moreover, while China has more STEM graduates than the US, it has less than half of the size of the US pool of AI researchers (Ding, 2018).

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Recently, AI has become involved in the trade war between the US and China. The US has tightened up the review of foreign investment in the National Defence Authorisation Act, due to concerns that other countries may obtain access to sensitive technologies. Investments in selected sectors, including telecommunications or aircraft manufacturing, must be reported to the Committee on Foreign Investment in the US if the foreign investor's role would allow access to non-public information or afford power to nominate a board member or make other substantial decisions (FIRMMA, 2018).

AI technology transcends national boundaries and requires global governance. There is a growing debate on the international governance of AI. In December 2018, Canada and France announced plans to establish an International Panel on Artificial Intelligence (IPAI). The IPAI is set to inform dialogue, to facilitate coordination and framework for the global governance of AI (*France and…*, 2018). Similar efforts have been already made by industry representatives, most notably the Partnership on AI and Open AI. There is also ongoing work under the umbrella of the UN, the OECD and other multi-governmental fora.

The challenges of AI stem from both capabilities that already exist, or will be reached in the near term, as well as from longer-term prospective capabilities. Even if some of these stretch beyond the current mandate of the European Commission, it is necessary to keep them in mind while addressing current challenges.

The most significant longer-term effects of AI are as follows:

- → Ethical challenges such as biases in AI systems, privacy invasion or potential threat to human dignity, among other things.
- → A risk of significant impact on the labour market, possibly resulting in the displacement of employees, which may further lead to the deepening of wealth inequalities.
- → Advances in the application of AI to military technology, which could overturn tactical or strategic force balances and undermine existing human-machine interference practices.
- → The furthest challenge is the creation of general machine intelligence: a machine that could successfully perform any intellectual task that a human being can. Such general AI, if not ethically-aligned with wider society, could cause catastrophic damage by either accident or strategic misuse.

CHALLENGES

The EU is at risk of relying on US or Chinese AI systems. The EU Member States may not be able to develop their own strong AI capabilities and – as a result – they may become dependent on systems provided by either China or the US. Such dependence may affect the overall productivity growth in Europe. Instead of developing technology innovation and participating in their commercial returns early, the EU may be forced to import systems produced by other countries, thus increasing their competitive advantages.

Currently, Europe lags behind in private investments in AI with EUR 2.4–3.2 billion in 2016, compared with EUR 6.5–9.7 billion in Asia and EUR 12.1–18.6 billion in North America (Fioretti, 2018). Both the US and China are home to nine out of the top 10, and 18 of the top 20 Internet companies as measured by market capitalisation (Fioretti, 2018). Only a fraction of European companies have already adopted digital technologies. This trend is particularly acute in small and medium-sized businesses. In 2017, 25% of EU large undertakings and 10% of small and medium-sized enterprises used big data analytics (European Commission, 2018a).

Moreover, this dependence on foreign AI systems may pose serious security challenges. We can see early signals of that in the current discussion on the use of specific suppliers for 5G networks or in the revelations of Edward Snowden from 2013. In the future, dependence on technologies from third countries may be a risk to national security, with various sensitive information leaking, such as information about the location and confidential dealings of key political representatives.

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The EU is at risk to be a rule taker in the global governance efforts in the domain of AI. The development and use of AI and other technologies is not ethically neutral. Technology competition between the US and China is underpinned by wider ideological competition between those countries. While the US primarily focuses on individual rights, China represents a more paternalistic approach to governing its citizens. Those different value systems affect how algorithms are designed (Thornhill, 2019). A simple example comes from the autonomous vehicle sector: how should machines react in situations of unavoidable accidents? Some countries may promote a more consequentialist approach (where moral choice depends on utility calculus), while others may prefer a more deontological stance (where morality is determined by duty or laws) (Thompson, 1985). The MIT Media Lab experiment called 'Moral Machine' illustrates the problem of how different cultures generate different ethical priorities when confronted with a trolley problem (http://moralmachine.mit.edu/).

RECOMMENDATIONS

The EU should develop its own AI capabilities and accelerate their commercialisation across the Digital Single Market. The EU has already started to mobilise a significant amount of investment in AI. Last year, public and private research and development investments in AI in the EU were estimated to total EUR 4–5 billion (European Commission, 2018). However, this investment has not yet translated into pan-European AI capabilities.

Europe has to create its own AI systems supported by a coordinated EU approach, not fragmented initiatives. The EU needs 'European Champions for AI' with strong AI research centres across the whole EU, not just in selected countries such as Germany and France. As in the case of the discussion on creating industrial champions in Europe, also in the field of AI all countries should take part in the value network of European AI solutions. Otherwise, there is a risk of deepening the economic differences between richer and poorer Member States as technology development is considered a driver of future growth and productivity.

In addition to joint research collaboration, the EU needs to strengthen industry collaboration and seek sectors where there is potential for pan-European consolidation and greater returns for all Member States. The political declaration of cooperation on AI presented by the majority of Member States has to be supported by more legally binding instruments which will outline key priorities, areas and implementation measures (*Declaration Cooperation on…*, 2018).

The EU should further eliminate obstacles due to fragmented markets and create a harmonised legal framework at the EU level, governing rules around key issues such as liability. The EU should also implement solutions to grow the European data space and offer them to all Member States. Data underpin not just AI but also many other segments of the economy, and more recommendations can be found in specific chapters of this report.

Fragmentation should also be avoided in related fields, such as robotics. In January 2017, the European Parliament's legal affairs committee stressed in its report that EU civil law on robotics should be updated to prevent a hodgepodge of regulation across the continent (European Parliament, 2017). Currently, Member States have started to adopt their own rules and, despite ongoing calls for unity, the market is becoming more fragmented, e.g. in terms of manufacturing quality standards.

The EU has to put forth and try to enforce its own rules applicable to global governance of AI. Such rules not always need to be strictly formalised as it takes much more time to complete such formalisation. The discussion on the rules applicable to the cyber domain may offer relevant insights. Despite the lack of formally agreed rules, the Tallinn Manual is considered a point of reference, even though it is an academic and non-binding study on how international law applies to cyber conflicts and cyber warfare (Schmitt, 2013).

The EU has to be an active creator of soft legal instruments, such as industry standards, codes of conduct, norms and ethical principles applicable to AI use and development.

10.2. The application of AI and its limitations

STATE OF AFFAIRS

AI is considered to be both an enabler/a tool to tackle a specific problem and a strategic capability. Many countries, including EU Member States, regard AI systems primarily as enablers to tackle long-standing problems such as treating chronic diseases or reducing fatality rates in traffic accidents.

The European Commission (EC) published its AI strategy in April 2018 as well as the Coordinated Plan on AI in December 2018 (European Commission, 2018b). AI has featured in the EU research and development framework programmes since 2004, with a specific focus on robotics. Finally, AI is part of the Commission's strategy to digitise industry (European Commission, 2016) and a renewed EU Industrial Policy Strategy (European Commission, 2017).

However, AI is increasingly seen as a strategic capability that may stimulate new sources of economic growth (PwC, 2018). According to Accenture and Frontier Economics, the impact of AI on developed economies could double annual economic growth rates by 2035 (Accenture, 2017).

Globally, AI is applied both in the civilian and military domains, it is considered a dual-use technology (Harris, 2016). Alongside with other modern technologies, AI can be used to positive but also to malicious ends (Brundage et al., 2018).

In the US, the development for both uses is strongly constrained by ethical principles. For example, when AI is considered for military integration (DoD, 2017; DoD, 2018), American military leaders advocate for the tactical application of AI in offensive and defensive weapons, but with limitations on automation and preserving the human command and control systems. China, however, is less concerned with legal and ethical issues and is prepared to apply AI enhancements to society as a whole, granting greater authority to technology in industry, the economy and the military.

Around 40 countries are currently working on robotic weapons[10]. There are already early examples of automated weapons which are able to evaluate and engage targets on their own[11]. Robotic systems with greater autonomy have been highlighted as a key component of the future strength of various countries (DoD, 2017). The recent US National Security Strategy was the first in history to specifically emphasise the importance of AI to the future of the American military (DoD, 2017).

CHALLENGES

The challenge of translating abstract ethical principles into the operational trust measures in the use of AI systems. A problem currently discussed in the EU is what ethical principles (explicit

[10] World Economic Forum, (21.01.2016), Conference comment by Sir R. Carr, Chairman, BAE Systems.
[11] An example is the Long-Range Anti-Ship Missile AGM-158C (LRASM). See Navyrecognition.com (2017).

or implicit) will govern the development and use of AI systems. The choice of specific ethical principles may determine the boundaries of AI.

> The European Commission has set an explicit goal to develop and use 'human-centric AI', but there are little in-depth examples of how the EU aims to implement this goal.

The European Commission has set an explicit goal to develop and use 'human-centric AI', but there are little in-depth examples of how the EU aims to implement this goal (European Commission, 2019a). According to the EC, a 'human-centric approach' considers AI not an end in itself, but a tool that has to serve human well-being. This implies that AI applications should not only be consistent with the law, but also adhere to ethical principles and ensure that their implementations avoid unintended harm (European Commission, 2019a).

The EC has set an express goal to develop and use AI in accordance with 'European values'. Those explicitly stated values include fundamental rights in the form of the Charter of Fundamental Rights of the EU as well as ethical principles such as accountability and transparency. AI Ethics guidelines have already been prepared by the High-Level Expert Group on AI in cooperation with the European Group on Ethics in Science and New Technologies (Independent High-Level Group on AI, 2019).

While there is already good progress made by the EU in providing a general framework of ethical principles applicable to AI, much work still needs to be done in operationalising such principles in the language of rules and regulations. Without such rules and best practices, it is difficult to assess whether action by a machine can be deemed trustworthy (Danks, Roff, 2018).

The risk of reducing the benefits of AI primarily to the group of capital owners. One of the biggest risks related to AI is that this technology may increase social inequalities (Korinek, Stiglitz, 2017). Wider adoption of AI is likely to promote owners of capital rather than workers as many of them may lose their main (or only) livelihood due to job automation. Most people rely on the value of their labour and, with the development of AI and robotics, much of that labour is likely to be devalued and inequality may rise.

The EU has set a goal to develop and use AI for the betterment of society as a whole (European Commission 2018b, 2019a). In order to bridge AI for all users, the Commission will support the development of an 'AI-on-demand platform'. (https://www.ai4eu.eu/#about) This will provide a single access point for all users to relevant AI resources in the EU. To facilitate access to the platform, the existing network of more than 400 Digital Innovation Hubs will be instrumental (European Commission 2016)[12]. However, these proposals only partially respond to the problem. While they democratise access to AI, it is uncertain whether the sole access will translate into shared benefits and more democratic ownership of AI. AI will impact the labour market, but it is still unknown to what extent a change will happen and how sudden it will be. Whereas many of

[12] See also Digital Innovation Hubs, http://s3platform.jrc.ec.europa.eu/digital-innovation-hubs [accessed: 17.06.2019].

the currently existing jobs may disappear, AI is set to create new types of jobs (World Economic Forum, 2018). However, a significant portion of workforce is unprepared to fill those jobs (World Economic Forum, 2018).

> While there is already good progress made by the EU in providing a general framework of ethical principles applicable to AI, much work still needs to be done in operationalising such principles in the language of rules and regulations.

The EU is also at risk of emigration of highly trained people in AI. There are more than 600,000 vacancies for such professionals in Europe (European Commission, 2019b). In 2017, there were 240,000 Europeans in Silicon Valley (Joint Venture Institute for Regional Studies, 2018), many of whom took a specific job in the tech industry in the US. Filling those vacancies may be crucial for sustaining and fostering the development of the AI industry in Europe.

The advances of highly autonomous military AI systems pose ethical questions related to their use. Some oppose the use of lethal autonomous weapon systems (LAWS) on ethical grounds. The most controversial issue are highly advanced robotic weapons which are able to engage preselected targets on their own. Many experts argue that autonomous weapons undermine human dignity when deployed to engage human targets (Heyns, 2016).

The international arms control debate on autonomous weapon systems started in 2013 with the first expert meeting at the United Nations Convention on Certain Conventional Weapons in 2014. To date, the States Parties have not reached an agreement about the future regulation (*Background on…*, 2019). The EU Member States are divided whether autonomous weapon systems should be regulated and, if so, to what extent. For instance, France and Germany propose a political declaration, Austria calls for a ban, while the United Kingdom opposes any form of new regulation (*Background on…*, 2019). In 2018, the European Parliament adopted a resolution demanding a ban of LAWS (European Parliament, 2018). The European Parliament also called for an exclusion of LAWS from the European Defence Fund. However, this was opposed by the Council and the Commission (European Commission, 2018d).

The growing advances of highly autonomous AI systems pose legal questions related to their use. Autonomous systems may potentially generate situations in which no one can be held responsible or accountable for what a machine does (Sparrow, 2016). However, a ban on autonomous systems or automated decision making may hurdle their development and potential commercial gains. This situation is illustrated by the EU approach to self-driving cars. Many EU Member States ratified the 1968 Vienna Convention on Road Traffic which calls for a driver to be in control of a vehicle at all times. This very rigid requirement does not fit a wide spectrum of vehicle autonomy.

Neither the US nor China are parties to the Vienna Convention on Road Traffic, which leads to faster development of autonomous vehicles and more advanced testing.

The advances of highly autonomous AI systems pose strategic questions related to their use. Strategic challenges involve situations of potential unintended consequences of using autonomous systems (Scharre, 2016). In particular, a potential failure of an autonomous weapon may cause the weapon to engage an inappropriate target and result in mass fratricide. Moreover, such systems can be especially dangerous when hacked by adversaries (Scharre, 2016).

There are different potential unintended consequences of AI. Among them, the issues most discussed in the EU are those related to bias (European Commission, 2018b). Advanced AI systems rely on a vast amount of data to perform well and if the training data are biased it may influence the behaviour of the system. This is well documented with face recognition technology, where many algorithms perform less well with faces of women or representatives of ethnical minorities (Wong, 2019). Humans often suffer from 'automation bias', where they accept a machine's decision even though it is not correct (Bashir, Hoff, 2015). Another issue discussed is the 'echo chamber' where people only receive information which corresponds to their opinions or reinforcing discrimination (European Commission, 2018b).

Another unintended consequence of AI is its impact on skills. The increasing delegation of tasks to machines can lead to a dangerous degradation in skill levels, which might become a problem particularly in safety-critical applications. An example is the 2009 crash of Air France 447, where the pilots had 'unlearnt' how to fly a plane in difficult circumstances since they would normally rely on the autopilot. Following the crash, the US Federal Aviation Administration issued a guidance requiring pilots to fly manually as much as possible to maintain skill levels (Federal Aviation Administration, 2009).

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RECOMMENDATIONS

Develop and enforce a united European position on the limitations of development and use of autonomous systems. The EU Member States should come together and present a united approach to both the limits of AI development and its use.

The EU should formulate EU-wide safety and liability frameworks for various types of autonomous systems, including self-driving vehicles. The EU should stimulate measures to ensure the highest possible standards in terms of quality of available data (robust, unbiased, etc.) as well as high standards of data processing. Finally, the EU Member States should formulate a common EU policy on the potential regulation of autonomous weapon systems.

The EU should focus on exploring various measures of how AI systems can be controlled. In the public debate, there is often an argument that humans should retain control over AI systems. This is the backbone of the EU 'human-centric approach' which usually comes down to the notion of 'human control over autonomous systems' in the public debate. Such control, however, should involve various layers of assessments in the light of (a) direct control related to the physical ability of a human to decide on the course action of a machine; (b) indirect control which is stipulated at the level of design and relates to trust building measures; and (c) authority control which specifies the distribution of responsibility and accountability on the use of such systems. Those various dimensions of human control should be considered in all sectors.

For instance, in the defence industry, elements of direct control are arguably more important than in other domains.

When it comes to dealing with algorithms the EU should develop its own explainability standards rather than focus on transparency. One approach to deal with the problem of unintended consequences of AI is to shed light on the course of action related to the collection, use and processing of data. But transparency, in terms of disclosing the algorithmic code, does not safeguard whether, and under what conditions, the algorithm was actually used in the decision-making system, or whether it 'behaved' according to the initial rules. Algorithms are often very complex, with thousands of data inputs, and even transparent presentation of the code may not give much in terms of understanding or control. Therefore, the EU should foster the development of explainability standards to gather evidence base on the use of various autonomous systems.

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Furthermore, one could think of providing guidelines for use cases so industry can calibrate how to balance the benefits of using AI systems against the constraints that different standards of explainability impose. Finally, the initiative should culminate in describing minimum acceptable standards in different sectors and application contexts.

The EU has to explore various measures not only to provide more democratic access to AI, but also to ensure more democratic participation in wealth generated by AI systems.

On this topic, there are at least four main proposals which have attracted considerable academic and public interest:

Firstly, a robot tax, a range of proposals attempting to tax the use of machines which replace human workers. One potential version of such regulation may include additional taxes on the work performed by a robot or a fee for using a robot.

Secondly, a universal basic income is a proposal to adopt a periodic cash payment delivered to all on an individual basis without means test or work requirement[13].

[13] For example, see Basic Income Experiment 2017–2018, https://www.kela.fi/web/en/basic-income-experiment-2017-2018 [accessed: 17.07.2019].

Thirdly, a universal basic dividend (UBD) is a proposal to share the returns on all capital. A fixed portion of new equity issues (IPOs) goes into a public trust that, in result, generates an income stream from which a UBD is paid. Thus, society becomes a shareholder in every public corporation, and the dividends are distributed evenly to all citizens (Varoufakis, 2017).

Lastly, some authors argue that the imposition of a tax on capital alongside with a job guarantee may help to create a better system of sharing the benefits of AI (Stiglitz, 2019).

The task for the new Commissioner may therefore be to give a systematic review of those options and their applicability in the EU, e.g. in the form of a green book on sharing wealth in the era of artificial intelligence.

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11. Social affairs

By Paula Kukołowicz

STATE OF AFFAIRS

The European Pillar of Social Rights (EPSR) sets out the new standard of rights of EU Member States' citizens. It focuses on three major issues – the right to equal opportunities and access to the labour market, the right to fair working conditions and the right to social protection and inclusion. The 20 principles set forth in the Pillar were jointly proclaimed by the European Parliament, the Council and the Commission in November 2017.

To monitor the progress in the implementation of the Pillar's principles, a Social Scoreboard with 12 headline indicators was launched. The indicators encompassed are related to the three general objectives of the Pillar and include statistics on early leavers from education and training, gender employment and the pay gap, income inequality, the at-risk-of-poverty and social exclusion rate and the youth employment and education rate, the availability of childcare services.

When assessed on the basis of the statistics covered by the Scoreboard, it is obvious that substantial progress has been made in the realisation of the Pillar's principles. The employment rate in the EU28 increased from 69.2% in 2014 to 73.2% in 2018, while the rates of severe material deprivation and social exclusion declined by 3 pps and 2 pps respectively during the 2014–2017/18 term. Overall, the current trends allow to predict that the EU should reach the Europe 2020 targets for: the employment rate (target: 75%), early school leavers (target: below 10%) and tertiary educational attainment (target: above 40%), but will fail to reduce poverty and social exclusion to the planned level (96.2 million people).

Although some progress has been made recently, it seems that dynamic changes induced by new technologies can pose quite a challenge to social standards in the EU in the foreseeable future.

CHALLENGES

The key challenge to the next Commissioner for Employment, Social Affairs, Skills and Labour Mobility will be to deal with the consequences of the ongoing Fourth Industrial Revolution. The adoption of high-speed mobile Internet, artificial intelligence, widespread use of big-data analytics and robotics begin to influence global labour market arrangements by shifting the division of labour between humans and computers. As a result, a greater portion of work will be performed by machines and computers which – to some extent – will replace the manpower. The World Economic Forum (2018) highlights that if this transformation is managed wisely, it could lead to a new age of good work and improved quality of life for all. However, if it is managed poorly, we run the risk of growing inequalities both between and within countries.

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Data collected by the International Federation of Robotics (IFR) regarding the sale of industrial and service robots shed some light on the scope and speed of the ongoing transformation. The IFR reports that global sales of industrial robots rose by 30% to the volume of over 381,000 units in 2017, the fifth year of record-high growth (International Federation of Robotics, 2018). At the same time, in 2018 the total number of service robots sold went up by 60% to more than 271,000 units, up from roughly 168,000 units in 2017 (International Federation of Robotics, 2019). The upward trend in the sale of robots gives a hint on the radical change taking place in the economy. This conclusion can be supplemented by the World Economic Forum's (WEF) predictions concerning changing work arrangements worldwide. According to the WEF, many leading companies are planning to expand their adoption of new technologies in the near future. Those undertakings expect that automation will lead to a reduction in full-time human workforce. At the same time, however, the businesses are also planning to expand workforce to new jobs and work roles. One estimate indicates that the shift in the frontier in the division of labour between humans and machines may result in 75 million jobs being displaced and 133 million new roles being created (World Economic Forum, 2018). While these figures should be treated with caution, it is nonetheless sure that the adoption of new technologies is going to be disruptive to working arrangements of vast groups of workers: it will create new opportunities for some (high-profile) workers and make others (less skilled) redundant.

It must be stressed that the technological advancements that take place might effectively respond to demographical problems currently experienced by many European countries, namely the continuing deficit of labour force and its further projected shrinkage in the coming decades. Nevertheless, this transformation poses several threats to the objectives set forth in the EPSR. Firstly, the predicted displacement of many professions and jobs poses a threat to individuals performing routine tasks. Although it is projected that new roles and jobs will emerge, such new roles will demand a specific set of skills, especially digital skills. The emerging skills gap is thus a major challenge that may put some individuals at jeopardised positions. The companies surveyed by the WEF indicate that they are very likely to focus their re- and up-skilling efforts on already high-performing employees. Only a small proportion of employers are planning to invest in at-risk employees that are most vulnerable due to technological disruption. Thus, it is highly probable that the ongoing transformation will widen the existing inequalities among individuals.

Secondly, the available data show that most of the growth in global sales of both service and industrial robots is driven by five countries: China, Japan, the Republic of Korea, the United

States and Germany, accounting for 75% of the increase in the global volume of industrial robots sold, according to the International Federation of Robotics (2018). Significant differences in capital endowment and in the ability to adopt new technologies may contribute to deepening divergence between EU Member States and to losing distance to the world leaders.

RECOMMENDATIONS

The outlined transformation of the global labour market puts the European Union's representatives in a position to design a comprehensive set of measures that would help individuals and countries to adapt to the upcoming transition. In particular, it should be recognised that – due to a highly complex and deep-reaching potential of the changes taking place – an effective response by the EU should involve collaboration between DG EMPL, DG EAC and DG CNCT in an effort to develop new measures that would anticipate and mitigate negative consequences of the changing task structure.

Firstly, the European Union faces the re-skilling and up-skilling imperative. The European Commission should consider designing new financial instruments that would help workers employed in vulnerable professions acquire new digital skills. Due to the changing task structure, e.g. a decline of manual and routine tasks, the workforce competence structure will rely more on high skills and the standard linear path of professional development via separate stages of education and practical experience will be replaced by a constant up-skilling or re-skilling imperative. Such workplace disruption will bring less stability and generate more risk for individuals, especially low-skilled workers. Currently, in the EU there are three times more low-skilled adults compared to the number of jobs that only require low levels of qualification (European Commission, 2018). Further, in 2017, 43% of the EU population had an insufficient level of digital skills (European Commission, 2018).

> The European Union faces the re-skilling and up-skilling imperative. The European Commission should consider designing new financial instruments that would help workers employed in vulnerable professions acquire new digital skills.

Secondly, the European Commission should encourage Member States to make every effort to reform their educational systems to better suit the labour market needs. Especially, countries should consider making their tertiary education systems more flexible so that adaptation to new job market trends could be achieved more easily.

Lastly, due to the predicted decline in full-time permanent jobs, DG EMPL should promote designing legal incentives that would allow companies to rely more heavily on flexible working schemes (e.g. part-time employment or teleworking). New working arrangements should be the first line of support for the labour market participation of the groups which are most likely to be affected by the adoption of new technologies.

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The Polish Economic Institute is a public economic think-tank dating back to 1928. Its research spans trade, macroeconomics, energy and the digital economy, with strategic analysis on key areas of social and public life in Poland. The Institute provides analysis and expertise for the implementation of the Strategy for Responsible Development and helps popularise Polish economic and social research in the country and abroad.

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