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GUNTRAM WOLFF IDENTIFIES NEW IDEAS TO DEVELOP EURO AREA GOVERNANCE

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Beyond the Juncker and Schäuble visions of euro area governance

Two diametrically opposed versions of the euro area architecture have been proposed. Guntram Wolff identifies new ideas to develop euro area governance

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Policy challenge

Fiscal policy making in the euro area will remain a difficult balancing act between national politics and European interests. Departing from both Juncker's and Schäuble's proposals, the Eurogroup should be developed into a Eurosystem of fiscal policy (EFP) as the centre of euro area fiscal governance. The Eurogroup should have a permanent, full-time president, with a mandate to represent the interests of the whole euro area, and who will report regularly to the European Parliament. The Commission would make fiscal policy recommendations to member states; fiscal rules would be reformed.

Political, and in some cases market, pressure would increase on countries that fail to comply with recommendations. Ultimate responsibility for debt will remain national. The European Stability Mechanism should become a permanent fire brigade to manage sovereign debt crises, including possible restructurings in extreme cases. Finally, the EU budget should be reformed to focus on European public goods and on a stabilisation function.

Competing visions of euro area governance: Juncker versus Schäuble

European Commission president Jean-Claude Juncker and Germany's former finance minister Wolfgang Schäuble have proposed competing visions of euro area governance. For Juncker, the core of the vision is a strengthened European Commission, with a Commission vice president who would be the euro area finance minister, chairing the Eurogroup, presiding over a euro area budget that is part of the European budget and giving recommendations to the Eurogroup and the member states on their national fiscal policies, based on a 'political' interpretation of the Stability and Growth Pact (SGP)[1].

By contrast, Schäuble's vision[2] is clearly motivated by a mistrust of the European Commission. Schäuble proposes to transform the European Stability Mechanism into a permanent European Monetary Fund (EMF) – the euro area needs a fire brigade even when no fire is burning. According to this plan, the EMF would have a clear crisis preven-

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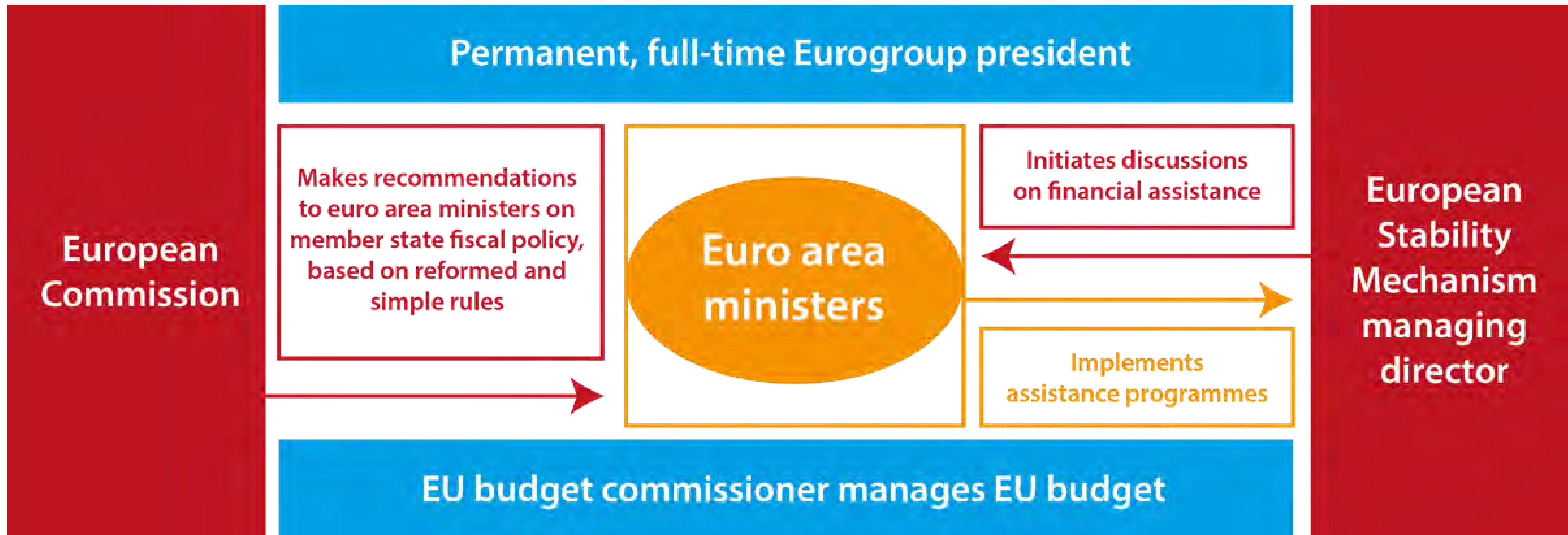
A Eurosystem of fiscal policy



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tion mandate comparable but more far-reaching than the International Monetary Fund's Article IV. In particular, the ESM would 'gradually' be put in charge of monitoring the SGP[3].

Eventually, the Fiscal Compact and ESM Treaty would be changed so the ESM would fully monitor euro area compliance with fiscal rules. Schäuble's mistrust of the European Commission is expressed in the wording that the ESM would play a 'stronger, neutral' role.

These visions of the euro area architecture are diametrically opposed – and both are flawed. Juncker's proposal ignores the reality of the strong intergovernmental nature of European fiscal policy coordination, while Schäuble disregards the numerous spillovers from European fiscal policymaking.

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President of the Eurogroup should be a permanent, full time position; it has been argued that it is not a full-time job, but this view seems to disregard the complexity of the task

Juncker's plan to merge the role of the chair of the Eurogroup with that of the economic and financial affairs commissioner is institutionally problematic. In fact, the proposal would amount to asking the prosecutor to preside as the chief judge over fiscal decision making[4]. The European Union is built on a fine balance between community interests and national interests.

At its core, this gives the European Commission primacy in initiating legislation and in issuing recommendations in the context of the SGP, while giving member countries supremacy in taking final decisions on the SGP, and giving the Council of the European Union and the European Parliament the final say on legislation[5]. A merging of the roles of chair of the council and commissioner would upset this fine balance.

It would also lead to conflicts of interest. How could the European Commissioner/finance minister issue a recommendation based on the EU legal framework, and then risk losing her/his authority as the chairperson of the council that might want to take a political decision to reject the recommendation?[6]

The European Commission already has an impossibly difficult task to interpret a set of rather incomprehensible fiscal rules. But the political approach taken to SGP recommendations has undermined trust in the European Commission as an independent guardian of the treaty and has disturbed the delicate EU balance described above[7].

Flexibility in fiscal rules is useful but needs to be deployed in a broad forum with strong support from the member states, and should be applied even- handedly. Juncker's European finance minister proposal is also inefficient because it would give the position of chair of the Eurogroup to the European Commission, disregarding the fact that fiscal policy is national and legitimacy for national fiscal policy derives from national parliaments. Having a commissioner, whose legitimacy is based on European processes, as chair of the group of national finance ministers would

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not provide adequate political legitimacy and the efficiency of the group would suffer as national ownership would decline. Having said this, it is true that Eurogroup decisions should be made more transparent.

Schäuble's intergovernmental vision also has major shortcomings, and some parts of his proposal, such as automatic restructuring, would be highly problematic. According to Schäuble, the ESM should remain an intergovernmental institution (at least if there is no will to change the treaties). Nevertheless, the proposal is worrying institutionally because it would unsettle the delicate balance between interests of the euro area as a whole and national interests.

In particular, the ESM as an intergovernmental institution cannot make 'neutral' recommendations – on the contrary, it is a highly political institution. As its decision-making process is based on unanimity among its Board of Governors, it would essentially have to fully internalise the political process when issuing fiscal policy recommendations. In doing so, the role of the neutral interpreter – ie. the prosecutor – and the judge would again be blurred.

The proposal would deprive the Commission of its role as the institution in charge of applying the fiscal rules (at least for the euro area countries). The important separation between political interpretation and neutral application of the rules would be lost.

The ESM itself also has interests that might not be in line with the interests of the euro area as a whole. In particular, it could take an excessively risk-averse approach to fiscal deficits, neglecting the positive economic effects that good stabilisation policy can deliver, while focussing excessively on sustainability concerns, which are the primary interest of the ESM.

The proposal would therefore deprive the Eurogroup of the important representation of euro area-wide interests in its decision making. Beyond ensuring that national fiscal policy remains sustainable, community interests would

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be little represented. However, it is well known and well established that there are numerous spillovers and interactions between national fiscal policies, monetary policy, inflation and euro area growth.

It is indispensable that euro area interests should be strongly represented in the Eurogroup. That is not visible in the Schäuble paper beyond emergency lending and strengthening of banking union.

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Towards a more effective institutional set-up: a 'Eurosystem of fiscal policy'[8]

Neither Juncker's nor Schäuble's visions would deliver effective decision making. But they are right to highlight that the current set-up suffers from drawbacks and should therefore be changed. Currently, fiscal coordination primarily focuses on sustainability or more specifically the avoidance of excessive deficits. But two important aspects are not sufficiently considered in the current system:

(1) The framework for management of sovereign debt crisis, including possible debt restructurings in extreme cases, is weak and

(2) the representation of common interests in decision-making is weak while fiscal rules do not sufficiently take care of stabilisation policy, in particular in terms of the area-wide fiscal stance.

National fiscal policies matter for the union beyond sustainability concerns: in particular, the area-wide fiscal stance and its impact on inflation, and spillovers of national policies across borders, are relevant channels that need to be considered[9]. In the absence of a large central/federal treasury, it is indispensable to have a forum in which national policies can be discussed and, ideally, adapted if necessary.

Coordination of fiscal policies will remain important in Europe's monetary union unless a giant leap towards a federation with central fiscal powers is made. Since national fiscal policy is driven by national policymakers, a forum

needs to exist where these national politics can be reconciled. Of course, one could hope to create a system in which national fiscal policy is exercised fully independently and a hard no-bail-out clause prevents moral hazard. However, such a system is only credible with significant European-level policies (in particular banking union) and only efficient with European-level stabilisation policy. The latter seems unlikely to be available anytime soon while the former is being built-up.

Coordination policies will therefore remain important for stabilisation. When banking union is completed and financial policies are truly European, the no-bail-out clause will become more credible. That also means that fiscal rules can become less intrusive. At the same time, to achieve better stabilisation policy, the rules should become more binding politically as the following sections explain.

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Strengthen the role of the Eurogroup president by making it a full-time position and improve accountability

An obvious starting point to better represent euro area interests is to transform the president of the Eurogroup into a permanent, full time position[10].

It is sometimes argued that chairing the Eurogroup is not a full-time job, but this view seems to disregard the complexity of the task. Key decisions need to be prepared through many bilateral discussions between key stakeholders before the meeting[11]. Moreover, a full-time president should also increasingly represent the euro area's interests. For example, the Eurogroup president could regularly visit national parliaments and give press conferences in Brussels and in the national contexts to explain Eurogroup decisions.

In fact, it is very important to make the European voice heard in the national decision-making bodies so that collective decisions do not only rely on the national finance minister in the national contexts. A further advantage of a full-time position is that conflicting interests between the national and the European mandate would disappear.

To underpin a neutral president who chairs and represents the euro area interest while simultaneously being fully accepted by national ministers, a dual appointment process would be desirable. The appointment could be based on a qualified majority vote in the Eurogroup followed by a (non-binding) confirmation vote in the European Parliament (possibly in euro area composition). An important legal question would be whether the Eurogroup, which is currently officially still an informal body according to the Treaties, would need a different formal status if the European Parliament were to play a role in the appointment process.

To increase transparency around decisions taken, the Eurogroup president would have to regularly report to the European Parliament, perhaps back-to-back with the appearance of the European Central Bank president. However, the European Parliament should not have the right to dismiss the Eurogroup president; that right would remain with the Eurogroup to reflect the fact that the ultimate 'judges' on national fiscal policies remain in the council. After all, national fiscal policies are not decided in the European Parliament.

A further step towards increasing the common interest in the decision making on national fiscal policies would be to give the president of the Eurogroup a certain voting weight in formal Economic and Financial Affairs Council (ECOFIN) decision making. Of course, to merge the role of the Eurogroup president with the ECOFIN chair or to give voting weight would require a treaty change.

The European Commission and the fiscal rules

The Commission should continue to be in charge of fiscal surveillance and give neutral recommendations to the Eurogroup. However, fiscal rules are in urgent need of reform. They are overly complex, opaque and often provide faulty recommendations in real time. Moreover, European fiscal rules do not give sufficient weight to the stabilisation policies needed for the monetary union as a whole.

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In addition, while rules such as the Fiscal Compact put significant weight on debt reduction, in their application the debt reduction is not achieved. Too many loopholes and unclear interpretations prevent transparent and clear decision making that makes economic and political sense.

Instead, a simple 'Taylor rule' for deficits should be put in place to provide transparent guidance to national policymakers: deficits should be higher as the output gap increases (and conversely). Deficits should be lower, the larger the debt level is compared to the 60 percent SGP benchmark. The weights attached to stabilisation and debt would need to be agreed and fixed. Finally, to prevent liquidity traps when the nominal interest rate is close to zero, all countries should run higher deficits than what the Taylor rule suggests. An alternative proposal worthwhile considering is an expenditure rule, see for example Claeys *et al* (2016).

A simple rule can be translated into a simple formula and would lead to greater transparency and even-handedness in fiscal recommendations. It would lead to sensible recommendations that take account of each country's sustainability concerns, stabilisation needs and the need to support monetary policy when it is at the zero lower bound.

The Commission would compute the deficit suggested by the rule and make a recommendation to the Eurogroup on how much of the gap between the actual deficit and the one given by the simple formula should be closed by the next year's budget.

The Eurogroup, in turn, would make a political assessment based on the neutral Commission numbers. In particular, it would give a recommendation on the fiscal adjustment member states should undertake. If countries do not comply with the recommendation, politically pressure would gradually build-up.

In particular, it would be the role of the permanent chair to explain in the national context why a decision was taken. Decisions would thus become increasingly binding on national policymaking by an intensification of political

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pressure on the country. *In extremis*, access to ESM lending could be withdrawn by the Eurogroup by a supermajority vote, adding market pressure on top of political pressure.

The European Commission would thus become a less political body than currently, and would interpret a simple set of rules in a transparent way. It would be for the Eurogroup as the political judge to decide on deviations from the simple rule. Transparency about why deviations from the rule were allowed would be significantly improved through the appearances of the Eurogroup chair before the European Parliament.

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What about the ESM?

The ESM is of vital importance for the euro area's stability. It is therefore important to think about how to strengthen it institutionally and how to embed it in the euro area governance framework proposed here.

The ESM manages sovereign debt crises and prevents self-fulfilling crisis in sovereign debt markets together with the ECB's Outright Monetary Transactions programme (OMT)[12]. An automatic restructuring clause that forces debt restructuring in all circumstances in which the ESM is employed would destroy this important feature that is of vital importance for the euro area. In fact, the existence of the ESM/OMT programme is an essential substitute for a euro area safe asset because it solves the problem of self-fulfilling debt crises.

Without a strong ESM/OMT programme, the euro area would need to create a treasury to issue a common debt in order to be sustainable. However, such a step would require a huge leap forward in terms of political and institutional convergence, which the euro area will not be able to make at this stage. More technical solutions such as European Safe Bonds (ESBies)[13] may be desirable but do not seem to convince either market participants or policymakers.

Therefore, the ESM/OMT programme needs to be made permanent. The most important feature of the ESM/OMT programme is a political agreement on the sustainability of debt, permitting to the ECB to play fully its lender-of-last-resort function. One important step to make the ESM/OMT programme more credible for the markets, and legally sounder, would be to accept that the ESM should take losses first in case debt turns out to be unsustainable *ex-post*[14]. This would be a significant step in the direction of creating a fiscal union for the euro area.

Managing a sovereign debt crisis is about managing the distribution of the adjustment burden – a highly political issue that in the euro area involves national and European decision makers. Once the multiple equilibria problem is solved, with the ECB being the lender of last resort, states cannot go bust unless they choose to do so. Unlike companies, they have – even when they are in great difficulties – revenues (ie. tax resources) that vastly exceed their interest payment obligations. Moreover, many potential tax resources remain unexploited, for example taxes on wealth[15].

Nevertheless, debt restructuring might be necessary in certain circumstances if debt is assessed to be unsustainable, ie. if raising new taxes or cutting spending would lead to a highly negative situation for the country concerned. One option that could be explored would be more equity-like instruments such as GDP-linked bonds. They could provide some desirable automatic adjustment capacity while also increasing market discipline on the margin. However, there are also important questions as to whether such a small market is liquid and whether it would create negative spill-overs on the main stock of debt making it thereby an undesirable instrument.

The main point here is that sovereign debt crises will always be highly political. The question then is who should decide on the distribution of the adjustment burden. In a monetary union, this decision cannot be taken by national decision makers alone, nor can it be taken centrally. Instead responsibility for the decision will be and should be with the ESM and the euro area ministers. The question is what institutional rules should apply to the decision making.

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Sapir and Schoenmaker (2017) suggest making the ESM[16] a permanent institution in charge of crisis management (for governments and as a backstop to banking union). They also suggest changing its voting mechanism allowing for supermajority voting[17] – a wise proposal. Moving to supermajority voting (eg. an 85 percent threshold) would be an important step to increase the reliability of the ESM as a crisis-management instrument.

But one could go further in increasing transparency and strengthening the European interest in such decisions. In particular, the appointment of the managing director of the ESM could be confirmed by the European Parliament, following the appointment by the Eurogroup ministers. The managing director would regularly testify to the parliament.

And while she would not have voting rights in the Eurogroup, her role could be strengthened by giving her the right to initiate discussions on assistance programmes based on an independent analysis of ESM staff. Unnecessary delays in financial assistance programmes caused by national procrastination could thereby be prevented. The ESM would have the obligation to clearly describe alternative options to the Eurogroup, and it would execute decisions taken by the Eurogroup under the political leadership of the permanent Eurogroup chair. Finally, it would be in charge of defining and overseeing conditionality.

What about a European finance minister?

French president Emmanuel Macron's proposal for a European finance minister is, so far, not concrete[18]. Juncker's idea to call its vice president the 'European finance minister' and give her a 'line' in the EU budget might be too small to warrant that title. A finance minister should be in charge of a substantial budget with, ideally, taxation and spending powers and the capacity to borrow. For the euro area, this would require treaty changes and a huge step forward in terms of political convergence. It is therefore probably only a long-term vision.

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It makes sense to develop the EU budget further. The Commission's idea to create the euro area budget as part of the EU budget is sensible. First, it would avoid creating new institutions that would drive a political wedge between euro area and non-euro area countries[19]. Second, serious reform of the EU budget is in any case needed.

President Macron's Sorbonne speech identifies good priorities for joint action with true European value-added, which would also have the support of many citizens in Europe. In particular, the costs of border control and joint investments in climate change mitigation could be increasingly financed by the EU budget. The EU budget could also increasingly fund European-level research, joint universities, exchange programmes and collaboration in defence and security.

Structural funds should continue to support convergence, but in particular in regions in significant need when the national level faces strong budget limitations on the support it can provide. A reform of the European common agricultural policy could free up significant resources, but some increases in contributions may be necessary the more one wants to truly take care of European public goods.

A reform of the EU budget would also permit the creation of a stabilisation instrument. While such an instrument would not replace national stabilisation policies, it would support countries with relatively little fiscal space. One option would be to use part of the seven-year EU budget framework as a fund that could be deployed in countries faced with a shock.

For example, a fund amounting to €50-70 billion would enable significant support to be provided to a specific country if it was strongly affected by an asymmetric shock. The support could amount to 1-2 percent of GDP of the country concerned[20]. As recessions happen on average every seven years, such a provision, amounting to about 10 to 15 percent of the EU budget, would be a helpful instrument. However, it should be clear that such a fund would

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not play a significant role in area-wide macroeconomic stabilisation policy. It would be insurance to support specific countries hit by severe shocks.

It would be important to define the conditions under which such support payments would be made. The idea of creating a catastrophic unemployment reinsurance scheme has the advantage of enabling automatic payments based on a clear indicator. However, it raises serious political concerns that the countries that would most need support are those that have failed to reform their labour markets[21]. An alternative would be to have an instrument linked to clear conditions in terms of structural reform. A third option would be to link it to an objective trigger, such as a large fall in GDP.

Such insurance is more important for weaker than for stronger countries. Strong countries are more able to borrow and insure themselves in the markets than weaker countries that are more at risk of losing market access while still engaging in sensible macroeconomic stabilisation policy. As desirable as insurance is for the functioning of a monetary union, it is this asymmetry that makes the introduction of insurance in the euro area so difficult.

Politically, it might therefore be easier not to differentiate between a fund for stabilisation policy and spending for European public goods. One could, for example, create more contingent budget lines that would allow spending more in specific countries when they are hit by shocks, such as an increase in immigration[22].

One significant step further towards creating meaningful EU-level fiscal capacity would be to introduce an EU tax to fund the EU budget and create a borrowing capacity in the EU budget. For example, if one based the EU budget on a rather volatile tax, such as a corporate tax, then the EU budget itself would become a stabilising factor. One could also consider a carbon tax, which could be raised already under the current EU treaties. This would be a step towards a true centralisation of stabilisation policy funded with own resources and combined with a borrowing

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capacity. Such a 'federalisation' of stabilisation policy would improve the working of the euro area but it is politically, legally and institutionally difficult to do.

The EU budget commissioner manages meaningful resources and a reorientation of the EU budget could provide meaningful insurance that would be helpful in specific circumstances. This budget commissioner would not stand above national ministers in that she would not have the resources to replace national borrowing or national spending. National fiscal policies will remain the core of fiscal policies in the euro area. The budget commissioner would also not have the power to overrule national decisions, a political power that would remain with the Eurogroup. This is why she would not be a euro area finance minister. Yet, she should participate in the Eurogroup.

This institutional set-up could be called a 'Eurosystem of fiscal policy'[23]. It would be a Eurogroup with significant modifications to strengthen the euro area-wide interest. At the top would be a powerful Eurogroup chair, who would also be the voice representing the euro area interests in national and international forums. She would not be a national minster and ideally would have voting rights. The Commissioner for economic and financial affairs and the ESM managing directors would be participants without voting rights. As today, the Commission would have the right of initiative and the obligation to make recommendations on fiscal policy.

In addition, the ESM managing director would be given the right to initiate discussions on ESM programmes. If the euro area were to decide to create additional fiscal capacities, the EU budget commissioner would be an additional member of the group. In the long term, the positions of budget commissioner and ESM managing director could be merged, especially if the ESM became a full EU institution and the resources of the ESM became true European resources.

Institutional set-up and governance matter. In this proposal, the Eurogroup would be transformed into a Eurosystem of fiscal policy and remain at the centre of joint fiscal policy decision-making in the euro area. The proposal

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here outlined would not remove the tensions between national and euro area wide interests in fiscal decision making.

These are inherent to the decentralised organisation of fiscal policies in the euro area. Yet, the proposal would help manage these tensions and strengthen in the debate the voice of the centre with the creation of permanent positions, new rights of initiative (and possibly votes) and greater accountability to the European Parliament.

The Eurosystem of fiscal policy would thus be the centre of coordination where difficult trade-offs between national and European interests are negotiated and coordinated. Reformed fiscal rules would provide transparent guidance focussing not only on sustainability but also area-wide stabilisation. The EU budget would become more useful for providing public goods and supporting stabilisation.

Nevertheless, fiscal policymaking will remain a delicate political balancing act, which is unavoidable unless Europe decides to become a federation. ■

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Endnotes

1. Juncker outlined his vision in his 13 September 2017 State of the Union address to the European Parliament. See http://europa.eu/rapid/press-release_SPEECH-17-3165_en.htm

2. In an undated non-paper from the German federal finance ministry, published in October 2017; see https://www.scribd.com/document/361120275/German-finance-ministry-non-paper-on-Eurozone-reforms

3. Though the Schäuble paper is silent on what this would mean for countries outside the euro area, which are also currently subject to the SGP.

4. It is comparable to appointing Wolfgang Schäuble president of the Bundestag while keeping his finance minister position.

5. As was aptly described by Italy's former prime minister Giuliano Amato at an October 2017 conference; see https://www.eu2017.ee/political-meetings/academic-conference (minutes 26ff; Amato, 2017).

6. Some have made a comparison with the high representative for foreign affairs, who is also the vice president of the European Commission, but the high representative position is in fact a double-hat position and not a role in which only a commissioner acquires the chairmanship of the Eurogroup. Also substantively, the EU's Common Foreign and Security Policy does not foresee a clear institutional separation between the issuing of recommendations based on a clear legal framework and decisions that need to be taken in the council based on such recommendations.

7. Representatives of smaller countries have voiced concerns that they cannot rely on the Commission to take an even-handed approach between smaller and larger member states. This can have negative effects well beyond the application of the SGP. How can the Commission ask member states to respect the rule of law when it itself appears ready to interpret the SGP rules differently for different countries?

8. The paper does not discuss the completion of banking union, which is essential for a stable euro area, nor next steps on capital markets union.

9. For a recent paper see Farhi and Werning (2017).

10. For the last months of his mandate, Jeroen Dijselbloom has become such a full-time Eurogroup chair.

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11. As Eurogroup insiders know, one of the reasons why Eurogroup meetings are now less likely to last into the night is that more preparatory work is done by the current Eurogroup president.
12. Claeys (2017) emphasises that the reformed ESM should also have mechanisms to deal with pure multiple equilibria/ liquidity problems without any need to resort to conditionality.
13. The main justification for the ESBies in Brunnermeier et al (2016) is exactly the problem of multiple equilibria in sovereign bond markets.
14. For a detailed discussion, see Wolff (2014).
15. Aussilloux et al (2017) usefully remind us that many tax resources such as property taxation remain unexploited in European societies in a context in which public debt has often increased substantially while private wealth has equally surged.
16. Whether or not to rename the institution the EMF is of secondary importance. Most important is to make it a permanent institution and to expand its functions so it can serve as a back-stop to banking union. One possible legal avenue could be Article 352 of the Treaty on the Functioning of the EU. At the time of writing, European Commission proposals on the ESM are due.
17. The German constitutional court, however, does not allow a super majority vote where Germany could be outvoted as this would violate German constitutional requirements, see Calliess (2012).
18. See, for example Macron's speech at the Sorbonne on 26 September 2017 (Macron, 2017).
19. Still, non-euro area countries should not be liable to pay into the euro area budget line of the EU budget.
20. For example, it could amount to €32 billion over two years for a country the size of Italy.
21. In a simulation exercise, Claeys et al (2017), show that a system built around a European unemployment insurance scheme for large shocks would have required net payments of some €50 billion in 2009, when the shock was greatest.
22. The more the budget lines of the EU budget become contingent, the more flexibility and the greater the budget with which one could arrange payments to countries and regions in need.
23. See Sapir and Wolff (2015) for an earlier discussion with a somewhat different set-up.

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A global architecture for international trade: a collaborative approach

Olivier Paul sheds light on the unprecedented changes facing the trade finance industry, and explains how ICC aims to positively shape the global trade landscape

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The global economic system is going through a period of significant change, while also facing numerous and complex challenges – particularly when it comes to global trade. Indeed, the value of trade to emerging markets and companies trading in these regions is widely acknowledged. What is less clear, however, is the intrinsic value of trade finance in driving that trade.

Through financing orders and mitigating payment and supply risks for buyers and sellers, players can transact with distant and often unfamiliar counterparties with confidence. But in order to secure future stability and growth, the global trade architecture needs reassessing and reshaping. It needs to evolve – not least because the trade finance industry is facing a period of unprecedented technological innovation.

Such change throws up some challenges, for sure. But the opportunities for growth and development far outweigh any concerns. Given this, we at the International Chamber of Commerce (ICC) Banking Commission have an important role in helping prepare the industry for the future: advocating and influencing changes such as regulation, digitalisation and the entry of new players. Moreover, shared principles around regulation and compliance also help level the trade landscape and support those operating in the trade finance industry across the world.

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A period of transformation

Certainly, the global trade environment is experiencing a period of transformation around policy, risk, and the provision of finance. As the ICC Banking Commission 2017 survey *Rethinking Trade and Finance* highlights, there are some major changes ahead for trade finance, involving regulatory changes, technological evolution and the entrance of new non-bank sources of liquidity.

At the same time, since the 2008 global financial crisis we have witnessed the growth of protectionist forces against trade – a global phenomenon that, while emerging in sometimes surprising ways, knows little with respect to ge-

ographic or developmental boundaries. This is of significant concern considering that trade generates macro-level benefits, such as helping turn startups into global companies generating employment.

Such rhetoric impacts the trade landscape and has a direct and indirect consequence on cross-border flows. In fact, despite the clear benefits, protectionism has translated into real measures, with new trade restrictions in 2016 reaching their highest levels since pre-crisis, and G20 economies adopting more trade-restrictive measures than trade facilitating ones. As a result, while trade growth is on the rise it has not yet reached pre-crisis levels with respect to outpacing global GDP growth.

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... effective collaboration between banks, pension funds, fintechs and all industry players will be key for the development of the trade finance industry

Meanwhile, the trade finance industry has experienced dramatic shifts in the regulatory landscape. In the immediate aftermath of the financial crisis increased regulation was, justifiably, deemed imperative to the health and sustainability of the global financial system. However, the industry continues to search for the optimal balance between the need to foster global growth and implement efficient, risk-aligned, trade finance regulations.

For example, Basel III capital requirements have reduced the amount of lending a bank can offer at each level of capital reserves. According to the 2017 *Rethinking Trade and Finance* survey, financial institutions have reported both anti-financial crimes regulations and Basel III regulatory requirements (80% and 71%, respectively) as major impediments to trade finance provision.

Fortunately, efforts to refine Basel III regulations to better align to the trade finance industry are underway. Certainly, recent changes – aimed at reducing disparities in the way in which the internal ratings-based model is applied by banks – should help reduce regulatory complexity. Yet the impact of Basel III on lender appetite is undeniable.

Similarly, compliance requirements relating to anti-money laundering (AML) and know your customer (KYC) have unintentionally increased the costs and complexity of trade finance transactions for banks, requiring banks to employ additional capacity for new oversight responsibilities. This – along with reputational risks and concerns over low profit – is contributing towards banks de-risking and reducing correspondent relationships, particularly in emerging markets. The International Finance Corporation's 2017 *Survey on Correspondent Banking* found that, globally, 27% of survey participants noted a reduction in correspondent banking relationships in 2016, while several regions reported reductions with significant frequency.

This is subsequently impacting the amount of trade finance available in these markets and primarily affecting small and medium-sized enterprises (SMEs). In fact, de-risking and the loss or potential loss of correspondent banking

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relationships limits the positive impact that banks can make in maximising a country's macroeconomic growth and stability.

So, what does all this mean for the trade finance landscape? The latest *Rethinking Trade and Finance* report revealed that 61% of respondent banks reported more demand than supply for trade finance, while the Asian Development Bank (ADB) also reported a US$1.5 trillion gap between supply and demand for trade finance. Furthermore, SMEs experience the most difficulties accessing trade finance – impacting their growth, and ability to expand internationally.

Adding to this complex picture, the trade finance industry is also adjusting to the entry of new players – such as challenger banks, fintechs, pension funds, hedge funds and insurers. While these entrants should be encouraged – they provide additional sources of liquidity and foster innovation – they must also decide whether they want to purely disrupt the trade finance landscape or to complement it.

Efforts underway

While there are various challenges in the trade finance industry, these must be balanced by the considerable efforts aimed at improving the global trade environment. Limiting any negative impacts of protectionism should, of course, be a priority. This is precisely why ICC is working with the World Trade Organisation (WTO) to establish new trade recommendations for all nations. Both organisations sincerely believe that a level playing field for trade helps reduce negative perceptions of trade.

ICC's annual Open Markets Index (OMI) provides a useful tool, representing 90% of trade and investment worldwide and highlighting the levels of trade openness in different economies. The four main components of the OMI consist of: observed openness to trade, trade policy settings, foreign direct investment openness, and trade-enabling in-

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frastructure. Despite pledges to enable trade as a driver of growth and job creation, the 2017 OMI report found that G20 economies are failing to demonstrate global leadership on trade openness, with only Canada placed among the world's top 20 open markets.

Yet in order encourage trade growth and help close the financing gap, we must also foster financial inclusion: in this respect defined as including SMEs in the global financial landscape (both in developed and emerging markets). While there are multiple reasons behind the financing gap, one of the key causes is the regulatory environment for trade and the constraints this places on banks financing of trade, especially for SMEs. Raising awareness around the low risk profile and true characteristics of trade finance to regulators is therefore a key area of advocacy for the Banking Commission.

For instance, ICC Banking Commission's annual *Trade Register* surveys bank default rates on trade instruments – providing an evidence-based support for our advocacy efforts geared towards a greater risk-aligned treatment of trade finance. The *Trade Register* highlights the favourable risk profile of trade finance instruments when judged against comparable asset classes, such as corporate lending. It also aims to further increase the attractiveness of trade finance to banks – helping maintain and even add to bank-supplied liquidity for cross-border commerce.

What's more, the *Trade Register* findings reinforce the case for trade finance to be increasingly recognised as a reliable and investible asset class to institutional investors – potentially providing further funding and support for the industry.

Levelling the playing field

In an increasingly complex landscape, the importance of guidance – with respect to compliance and its application – is critical. To this end, ICC, the Wolfsberg Group and BAFT formed the Trade Finance Principles Drafting Group in

April 2014. The group aims to provide guidance on a broad range of trade finance compliance areas, such as control mechanisms (eg. customer due diligence). The group benefits from diverse expertise and perspectives, considering the combined member base from all three partner institutions.

In particular, the *Trade Finance Principles* outline the role of financial institutions in managing processes addressing financial crime risks, as well as compliance with national and regional sanctions and embargoes. Such a collaborative effort ensures that practices around financial crimes compliance for trade transactions are standardised, and that all banks operate on a level playing field. This is crucial considering the global nature of the industry, as well as the fact shared principles need to consider variations in cultures and sizes of all banks involved in trade finance.

The Group updated these *Principles* earlier this year, since changing regulatory expectations made it necessary to identify where expectations have also changed, and where the basic principles, or their application, needed readdressing.

The digital revolution

Meanwhile, much of the industry's focus is currently around the digital revolution, as the digitalisation of trade finance is now widely understood to provide benefits around efficiency, costs and transparency – as well as in encouraging new entrants and wider collaboration.

As this year's *Rethinking Trade and Finance* report highlights, the digitalisation of the trade finance industry is influencing business models and strategies for corporates and banks, primarily due to its power to simplify and reduce costs. Indeed, through increased transparency and reduced risk, digitalisation can potentially help trade banks meet their regulatory and compliance requirements. In turn, this allows banks to better serve SMEs and stimulate trade flows.

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Clearly, industry players should focus on accelerating the benefits of digitalisation in line with wider trade finance goals, particularly as increased collaboration will enhance progress. This is precisely why ICC Banking Commission launched a Working Group on Digitalisation earlier this year, with a focus on helping the industry *"accelerate the digital journey".*

The Working Group aims to do this specifically through assessing the 'e-compatibility' of ICC rules for trade finance – developing a set of minimum standards for the digital connectivity of service providers, and examining the legal and practical issues related to the validity and value of data and documents in digitised form.

Still, while digitalisation has the potential to bring benefits and transform the trade finance industry, its success relies on a rules-based approach as well as the development of standards. We aim to prepare the industry for the significant technological changes underway and ensure that today's rules – used by 90% of the banking industry – remain up to date.

Eventually, the Group intends to create standards to on-board third-party providers, attracting non-bank providers and fintechs while ensuring harmonisation across the industry. This will aid efficiency while also bringing transparency and reducing operational risk.

Collaboration is key

Ultimately, with a host of new changes around regulation, compliance, digitalisation, and new players entering the industry, effective collaboration between banks, pension funds, fintechs and all industry players will be key for the development of the trade finance industry.

It is here that international organisations such as ICC can work together with other multilateral organisations in order to drive the industry and support such collaboration. Such efforts go a long way in helping to prepare the

trade finance industry for future developments and positively shape the trade landscape – strengthening the global economy and increasing prosperity for communities worldwide. ■

Olivier Paul is International Chamber of Commerce (ICC) Banking Commission's Head of Policy

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Can Industry 4.0 save the planet?

The use of technologies, techniques and business models linked to industry 4.0 will be essential to achieve a low carbon transition, and the the public sector will play a key role, argue Tomas Wyns and Martin Porter

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Following the 2015 Paris Agreement on climate change all countries around the world will have to implement long-term strategies and policies to achieve net zero greenhouse gas emissions around 2050. Energy and resource intensive industries will hence also be faced with the same challenge. The emissions from these sectors are known to be 'difficult' to mitigate and will require a combination of process, product and business model transformations. The use of technologies, techniques and business models linked to industry 4.0 will be an essential part of this low carbon transition. Furthermore, the public sector will have to play a catalysing role to enable this low carbon industrial revolution to take place.

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Net zero greenhouse gas emissions by 2050 and challenges for industry

Reducing greenhouse gas emissions to almost zero by 2050 will be one of the biggest socio-economical challenges for the EU since its inception in 1957. Over a period of 30 years all sectors in the economy will have to see a coordinated transition to a net zero emissions society. In certain sectors notable progress has been made. We are currently witnessing a revolution in the energy sector with renewable energy production such as wind and solar outcompeting or soon outcompeting all fossil fuel based power production. In the transport sector the electric age is finally dawning as is the end of the internal combustion engine with its phaseout being announced by a growing list of major economies.

When it comes to energy and resource intensive industries such as steel, cement and chemicals production in the EU the good news is that emissions have come down significantly since 1990. With cement and steel production 40% lower (in 2014) and chemicals even 60%. This is due to reduction in production capacities in some of these sectors but also major investments in energy efficiency. The bad news is that from hereon further reductions will become more difficult and costly. It is also clear that existing technologies will not bring about net zero emissions ever.

Pathways to industrial decarbonisation

The pathways towards deep emission reductions in these industries will need a sophisticated combination of actions. First of all, there is an urgent need for the development and deployment of breakthrough technologies. This can include electrification of processes, the capturing and storage of CO_2 emissions, the utilisation (with long-term) fixation of CO_2 emissions and the use of alternative feedstocks. With investment cycles in these industrial sectors taking around 30 years, there is an urgent need to bring these technologies to the market. But also the invention of new products with same performance but (much) lower CO_2 emissions during the production process will be important.

Thirdly, and most important, radically changing existing business models and value propositions will be essential in combination with the above to achieve the Paris Agreement long term target. These new business models can

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In 2050 a net zero emissions Europe and in particular its industry will look very different compared to today

include a move to higher levels of circularity along the supply and value chain of the basic materials industry. One example would be the introduction of product as a service value propositions. This concept has been implemented already by Philips lighting with the move to lighting a service as opposed to lamps as a product. In such framework the efficient or even circular use of products becomes of high interest to the producer of these goods.

However, the example of lighting has not found its way into the business models of energy and material intensive industries. One of the issues is lack of reliable information of product use downstream for materials such as steel, chemicals and cement, in particular at the end of life of these products.

It is in this area in particular that the application of elements that are part of an Industry 4.0 framework can play an enabling role.

Industry 4.0 and the low-carbon economy

While most energy and materials intensive processes have become highly automated and depend upon sometimes very sophisticated IT tools, the application of these techniques is often limited to the process site. Once products have left the plant, in most cases, the producer doesn't track their eventual processing and use. One of the consequences is that the sometimes high quality material present in products at the end of their lifetime cannot be traced or extracted or only at high transaction costs (eg. by being labour intensive). Advanced digital technologies can make a big difference here.

For instance the use of digital ledger technologies (eg. blockchain) can help trace the use of basic materials (eg. steel and concrete) from their production until the end of life when embedded in products down the value chain. Furthermore, advanced machine learning in combination with thermal or other spectroscopic techniques at an industrial scale can advance the automation of recycling by allowing the highly efficient selection between low and high-quality steel or aluminium scrap and different types of plastic waste.

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With these and other technologies at their disposal, new business models linked to circularity might finally become cost-effective and hence attractive. In practice some energy and materials intensive industries can be offering this product use tracking and specialised recycling as part of a service. It might therefore even become possible that basic materials such as steel are leased or rented out instead of sold in the future. As a result the need for virgin primary steel, plastics and even cement might go down significantly due to the application of circular economy technologies and business models and this will therefore advance greenhouse gas reductions even further.

There are also other elements that are part from accelerated digitisation that can become important in the low carbon transformation of industrial sectors. Important here is again the need to speed up technological changes as part of this transformation. In the area of material sciences there is a need for discovery acceleration in the quest to find large cost-effective power storage and electrification of transport but also the push for new chemicals catalysts that can help with development of low carbon processes, the use of CO_2 as a feedstock and the production of hydrogen. The development of advanced discovery laboratories in the EU and globally will be essential for this R&I process. These labs will heavily depend on emerging key enabling technologies that can be part of industry 4.0. This includes the use of AI and machine learning to speed up the identification of promising molecules and materials. This area can also be the first killer app for the use of quantum computers.

Another example can be the industrialisation of 3D printing. It has the potential to reduce the use of basic materials such as steel and concrete by limiting waste in the construction process and by enabling the design of products that require less material in the first place.

While it is still not certain what role advanced digitisation will play in the future of energy and resource intensive industries, there is the opportunity to develop a roadmap that uses new digital technologies. It can lead to reduced need for basic materials but also finally enable the development of new business models along the value and supply chains of these industries.

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The public sector as a catalyst for mission oriented low carbon innovation

We know that the road towards a competitive low carbon industry will consist of combined pathways of process, product and business model innovations along the respective supply and value chains. Advanced digitisation can play a critical enabling role in these scenarios, in particular through providing options for different value propositions through eg. the circular economy. It is however no given that any of these scenarios will materialise and that hence a low carbon industry will become a reality in 30 years.

A transformation of this size in such a relative short timeframe will require a list of catalysing activities by the public sector. Other historical transformations can serve as an example. The internet, for instance, was the result of intense public R&I activities by the US Defence Advanced Research Projects Agency (DARPA) and an incredible spin-off of the European Organisation for Nuclear Research (CERN). Other game changing technologies such as the Global Positioning System (GPS) and the touchscreen had a similar origins story.

To achieve net zero greenhouse gas emissions by 2050 will need focused and hence mission oriented public R&D programmes. These can be build around grand challenges such as zero emission steel making by 2030. This type of R&I will also have to look beyond the development of innovative processes and include challenges for new business models. An example would the use of value discovery programmes which support industries to explore new business models and value propositions, eg. as part of a circular economy.

The public sector is also ideally placed to provide (long-term) catalytic financing for the industrial transformation. There will be a high level of technology risk involved in moving to a low carbon economy. Public grants but also instruments such as investment risk guarantees that lower the cost of capital will be important. The public sector, eg. as opposed to venture capital, can be present for a longer time and hence increase the chances that fledging technologies and initiatives mature sufficiently to reach market readiness.

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The government also has a pivotal role in so called market formation. It can be the first purchaser of low carbon products and hence create a market for these products. The public sector can do this directly through public procurement, for instance by requiring the use of low carbon materials in large infrastructure projects. It can also enable these markets indirectly through regulatory initiatives.

This includes the introduction of low CO_2 or energy-efficiency standards eg. for construction products, buildings or appliances but also the introduction of instruments that seek to include external costs of production processes in final products through putting a price on CO_2 emissions. In this context it is also important that regulation does not lock-in incumbent high CO_2 technologies. The EU's CO_2 and cars legislation seemed to be designed to promote efficient diesel engines and therefore impeding the shift to revolutionary electric vehicles in Europe.

The smart, efficient and mission oriented combination of the above-mentioned instruments the public sector can enable can be called a modern industrial strategy. It will have to be an essential element of Europe's low carbon transformation.

Conclusion

In 2050 a net zero emissions Europe and in particular its industry will look very different compared to today. The good news is that there will still be a high level of industrial activity. The combination of innovations along the value chains of different industries and business model changes as part of circular economy will even create the possibility of more value being created in the absence of CO_2 emissions. Existing and emerging technologies part of Industry 4.0 likely will be critical in making this happen.

A smart public sector, however, will the unique catalyst to make it a reality. If they are smart, EU policy-makers will agree a confirmation of such a mission by the end of 2019, through a new 2050 Roadmap and 'mid-century strategy'

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– and combined with a renewed agenda and effort in the next Commission on a modern European industry strategy for a world-leading smart, clean industrial economy. ■

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Understanding the destination-based approach to business taxation

Alan Auerbach argues that a destination-based cash-flow tax would confront the key international problems of existing tax systems

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The rising importance of multinational companies and the changing nature of production represents a challenge to the traditional ways that countries try to tax corporate profits. This column examines one potential policy response – a destination-based cash-flow tax – which it argues would confront the key international problems of existing tax systems. It also addresses some of the concerns arising in particular from US proposals to introduce such a tax.

The rising importance of multinational companies and the changing nature of production, in particular the growing dependence on intellectual property, represents a challenge to the traditional ways that countries try to tax corporate profits, because the concepts on which tax systems typically rely, such as corporate residence and the location of profits, have become less well defined and more responsive to cross-border tax incentives. One clear result of the changing landscape has been intense tax competition in the form of a steady decline in headline corporate tax rates, shown in Figure 1 for the G7 countries and Ireland, a country often cited in discussions of tax competition.

This decline in tax rates is all the more remarkable in having occurred in the face of calls to confront rising inequality with more progressive taxation, and has also prompted additional policy responses. Many responses have been of a legalistic nature, trying to make existing tax systems work. Important examples include the Obama administration's measures to erect tighter rules against corporate inversions and the European Commission's attempts, through its Directorate-General for Competition, to force US multinationals to pay more taxes to EU member countries with favourable tax regimes, such as Ireland, Luxembourg, and the Netherlands. But the underlying problems of existing systems are very large, and it is hard to see such initiatives, which also include the OECD's recent Base Erosion and Profit Shifting project, as adequate. For example, by one recent estimate (Guvenen *et al.* 2017), profit shifting by US multinationals, and the associated overstatement of net US imports, accounted for more than half of the official 2012 US trade deficit.

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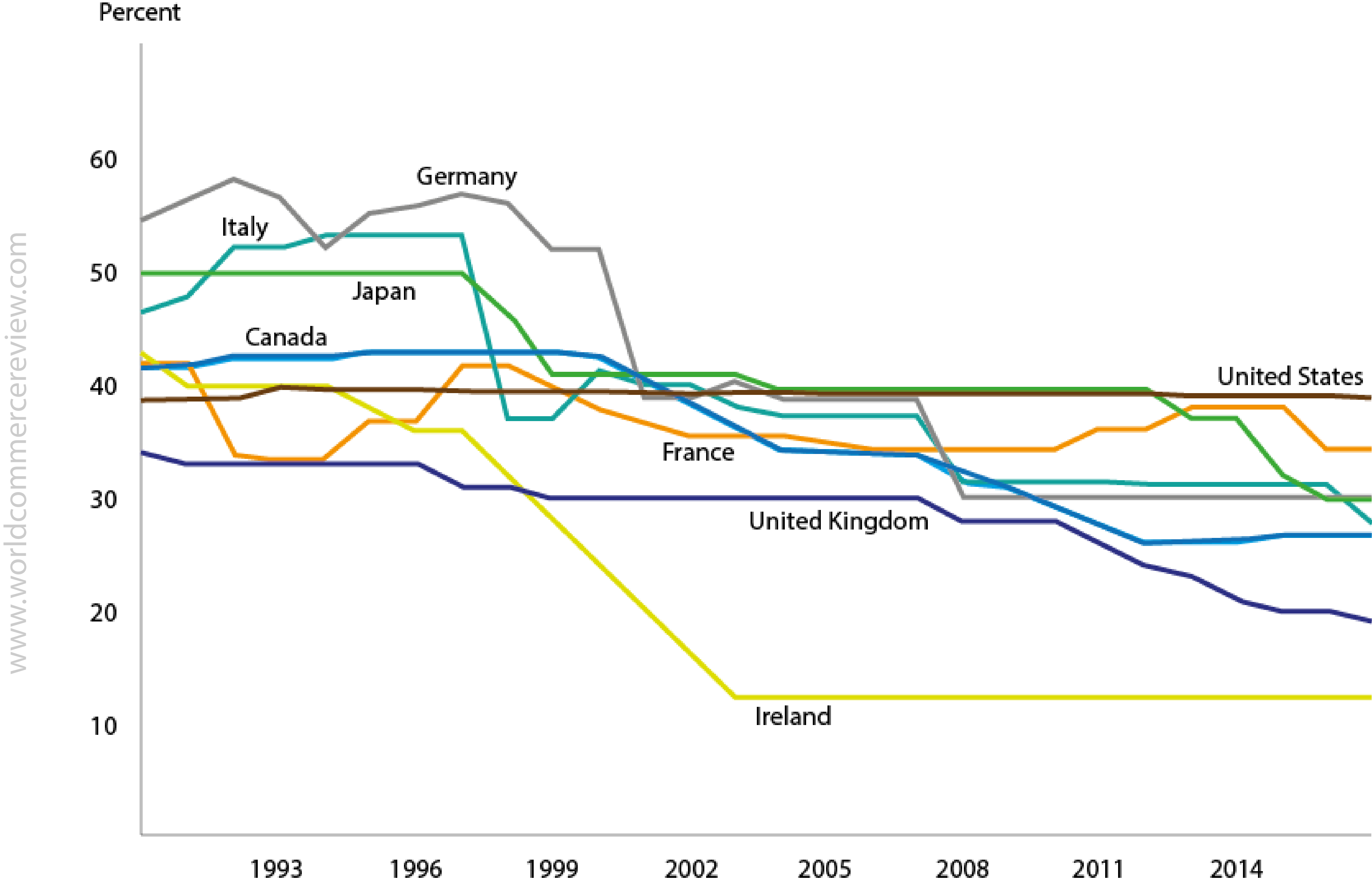
Figure 1. Statutory combined corporate income tax rates for the G7 countries and Ireland, 1990–2017



Source: OECD tax database.

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Moving to a destination-based cash-flow tax

An alternative approach has been to identify fundamental tax reforms that can deal more adequately with the new economic realities. One such approach builds on the concept of business cash-flow taxation, first proposed in the late 1970s by the Meade Committee (Institute for Fiscal Studies 1978). Originally conceived as a tax on the cash flows of domestic producers (an 'origin-based' tax), the cash-flow tax had many potential benefits, including eliminating the tax on normal returns to new investment, removing tax-based incentives for corporate borrowing, and eliminating the need to measure income of companies with complex business arrangements. But this standard cash-flow tax leaves in place the pressure for international tax competition via incentives for companies to shift the location of profitable activities and reported profits to low-tax countries. This shortcoming led to consideration of a destination-based cash-flow tax (DBCFT), which adds 'border adjustment' to cash-flow taxation and has the effect of basing the tax on the location of consumers rather than on the location of profits, production, or corporate residence.

As described in a series of papers, including Auerbach (2017), converting an origin-based cash-flow tax into a destination-based cash-flow involves relieving tax on export revenues and imposing tax on imports, in precisely the same manner as is done under existing value-added taxes (VATs). The key difference from a VAT is that the DBCFT maintains the income tax deduction for wages and salaries, and thus amounts to a tax on domestic consumption not financed by labour income, in principal a much more progressive tax than the VAT.

The DBCFT confronts the key international problems of existing tax systems.

- First, it removes corporate residence as a determinant of tax liability, which would eliminate the incentive for corporate inversions currently being driven by the US approach of taxing the foreign-source income of its resident companies (and hence primarily a US problem).

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- Second, because transactions with related foreign parties would be ignored by the tax system (the border adjustment offsetting any domestic tax on receipts or deduction of expenses associated with cross-border transactions), there would be no incentive to manipulate internal transfer prices to shift profits from a high-tax country, either through overstating the cost of imports from related foreign parties or by understating the value of exports.

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... the cash-flow tax had many potential benefits, including eliminating the tax on normal returns to new investment, removing tax-based incentives for corporate borrowing, and eliminating the need to measure income of companies with complex business arrangements

- Finally, because the border adjustment would have the effect of imposing a tax based on where products are sold, rather than on where they are produced, the DBCFT would eliminate any tax on business profits generated by producing in a country that adopts it.

Note that all of these effects of the DBCFT are independent of the tax rate adopted under the new system. As such, it would remove the incentive to compete over tax rates.

DBCFT adoption would need to confront many technical issues, including potentially persistent tax losses on the part of exporters (whose domestic costs would be fully deductible even as their export revenues were relieved of tax), the need to deal consistently with non-corporate businesses, and constructing an appropriate tax regime for financial institutions. While these issues are important, potential solutions exist, and it is primarily with respect to other issues that concerns have arisen, particularly after a version of the DBCFT was proposed by the Republican leadership in the US House of Representatives (Tax Reform Task Force 2016).

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WTO objections

Border adjustment, as part of a VAT, is practiced around the world and is not a WTO violation. Cuts in broad-based domestic payroll taxes are not generally considered problematic, nor are corporate tax rate reductions. However, many trade policy analysts have suggested that the DBCFT—a policy that is equivalent to the combination of these three policies, replacing corporate income taxes with a border-adjusted VAT plus a reduction in payroll taxes—may violate WTO rules and could be struck down if another country challenged it (eg. Schön 2016). Even though such objections lack any economic basis, concerns about a challenge may be real, particularly because adopting the DBCFT would put considerable pressure on other countries to modify their own tax systems. If a large country like the US adopted the DBCFT, thus eliminating any tax penalty on locating profits there, this would encourage companies

to move production and shift profits to the US from any countries still imposing corporate income taxes based on the location of production.

This concern is an argument for pursuing a multilateral approach to tax reform, but also for seeking ways of characterising the DBCFT that could achieve consistency with the formalistic WTO rules (eg. Grinberg 2017).

Tax revenues

Some proponents of the DBCFT cite as an advantage the tax revenue it could generate for countries that, like the US, have large current trade deficits, because border adjustments amount to a tax on net imports. This has provoked criticism that (1) the trade deficit might shrink immediately in response to the DBCFT; and (2) even if the trajectory of the trade deficit is unchanged, the long-run constraint on trade deficits suggests that the present value of such deficits is zero, or perhaps even negative for countries already having a negative international investment position.

The first of these criticisms ignores the fact that one wishes to compare the revenue raised under a new system to that under the old system, and therefore it is the trade deficit under current law that is relevant to calculating the impact of a border adjustment. The second criticism ignores the fact that the constraint on a country's ability to run trade deficits on a permanent basis is relaxed where (as suggested above to be the case for the US) a large share of the trade deficit arises from inflated net imports that in turn generate inflated related-party profits in other countries. Such effects offset each other in a country's current account and have no impact on its international investment position, and therefore are presumably indefinitely sustainable.

Exchange rates, trade, and asset revaluations

There is little doubt that a large border adjustment can lead to large real exchange rate responses, through some combination of nominal exchange rate appreciation and domestic price and wage increases. Under simplifying

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assumptions, the Lerner symmetry theorem predicts that such responses should neutralise any effects on trade. But there are many possible complications to the analysis, such as the responses of other countries, the perceived permanence of the tax reform, and stickiness in the pass-through mechanism relating exchange rates to relative prices. Several papers have recently considered the possible importance of such complications. One may hope that work in this area will progress in incorporating more of the relevant features of the DBCFT as well as its possible short-term transition provisions.

As to the asset revaluations that might occur, most obviously if a country's currency appreciation reduces the wealth of its residents holding assets denominated in foreign currencies, one must keep in mind that such effects mirror the effective wealth reduction that occurs under adoption of a VAT, where the real value of such assets falls in terms of domestic purchasing power. Such effects occur whether adjustment to the DBCFT is through domestic price increases or nominal exchange rate appreciation, and should not be seen as an incidental or unintended effect of the reform. ■

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Unfinished business: The North Atlantic crisis and its aftermath

Tamim Bayoumi writes that the North Atlantic recession and the eurozone depression were caused by different regulatory mistakes that started in the 1980s

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Nine years ago, Lehman Brothers collapsed and the economic world changed. This column introduces a new book that asks how the North Atlantic economy became so unstable that the failure of a medium-sized US investment bank could topple the entire North Atlantic region into deep recession, and the eurozone into a depression. The answer lies in serial but different regulatory mistakes in Europe and the US starting in the 1980s.

Nine years ago, Lehman Brothers collapsed and the economic world changed. Gone were blithe assumptions of increasing prosperity, rosy futures, and safe nest eggs backed by savvy policies, replaced by a new mediocre of low growth, lacklustre investment, and diminished respect for expertise (Cline 2017 estimates the average output losses from banking crises at 64% of output). The associated social and political discontents have led to a range of populist leaps in the dark.

Appropriately for such a pivotal moment, there have been many books on the crisis. These have generally focused on immediate causes – complex banks appear full formed, securitised asset prices collapse, a crisis erupts in Greece, policymakers react to unexpected events – and examine either the US or eurozone halves of what was a North Atlantic crisis. For example, Wessel (2009), Paulson (2010), Bernanke (2015), Geithner (2014), El-Erian (2014), Wolf (2014), and King (2016) on the US crisis; and Stiglitz (2016) and Brunnermeier et al. (2016) on the eurozone one.

My new book, *Unfinished Business*, is the first to deeply explore how the North Atlantic crisis happened, rather than what happened. It asks how the North Atlantic economy became so unstable that the failure of a medium-sized US investment bank could topple the entire North Atlantic region into deep recession and the eurozone into a depression. The answer lies in serial but different regulatory mistakes in Europe and the US starting in the 1980s. By 2002 – well before the unsustainable macroeconomic boom that most books focus on really got started – the elements that drove the crisis were already in place. These included the rapid expansion of both increasingly fragile Northern

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European universal banks and US shadow banks that would eventually fund much of the US and eurozone periphery bubbles. An obscure change in US SEC regulations in 2003, and a better-known change in the US bankruptcy code in 2005, helped to parasitically entwine these US and European excesses.

Anatomy of the North Atlantic financial crisis

The less well-known European half of the story involved several elements. Regulatory changes in the mid-1980s encouraged the creation of large universal banks in northern Europe that merged commercial banking (loans to

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The European banking system decayed from within as the northern universal banks became increasingly fragile, while the US commercial banking system was undercut by the expansion of equally fragile shadow banks

clients) with investment banking (buying and selling assets). These banks thrived following an ill-conceived amendment to international rules that allowed them to use their internal models to assess the riskiness of their loans, assessments that were used to calculate required capital buffers on investment banking activities[1]. Unsurprisingly, the banks exploited their internal models to save on (expensive) capital buffers and used the extra space to expand.

The exploitation of internal risk models is apparent in Figure 1, which reports capital buffers as a percent of total assets (on the vertical axis) and risk-weighted assets (on the horizontal axis) for large European banks. The expected positive relationship seen in 1996 had disappeared by 2002 and had become negative by 2008. In this topsy-turvy world, by 2008 a universal bank where one euro of capital supported 60 euros of loans was assessed as better capitalised than a commercial bank where one euro of capital supported 12 euros of loans. Predictably, the universal bank was hit harder over the crisis. The risks from the rapid expansion and growing fragility of the universal banks was missed because competition across national regulators led them to focus on supporting their 'national champions' rather than safety and soundness – exemplified by the adoption of 'light touch' regulation in the UK and Ireland.

US banking went through a better known, but equally misunderstood, transformation. Starting in the 1980s, deposits and loans were increasingly switched from relatively sound commercial banks to more fragile investment banks that formed the core of the shadow banking system (confusingly, despite being called banks, the investment banks were not covered by banking regulations). The process started in the 1980s as higher inflation interacted with outmoded interest rates caps to divert deposits from commercial banks to investment banks offering better terms. As deposits shifted, the commercial banks increasingly sold mortgages to shadow banks via securitised assets, a trade that worked because the shadow banks could skimp on (expensive) capital buffers. As seen in Figure 2, already by 2002 commercial banks were selling most mortgages via securitised assets.

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Figure 1. Internal risk models distorted capital buffers

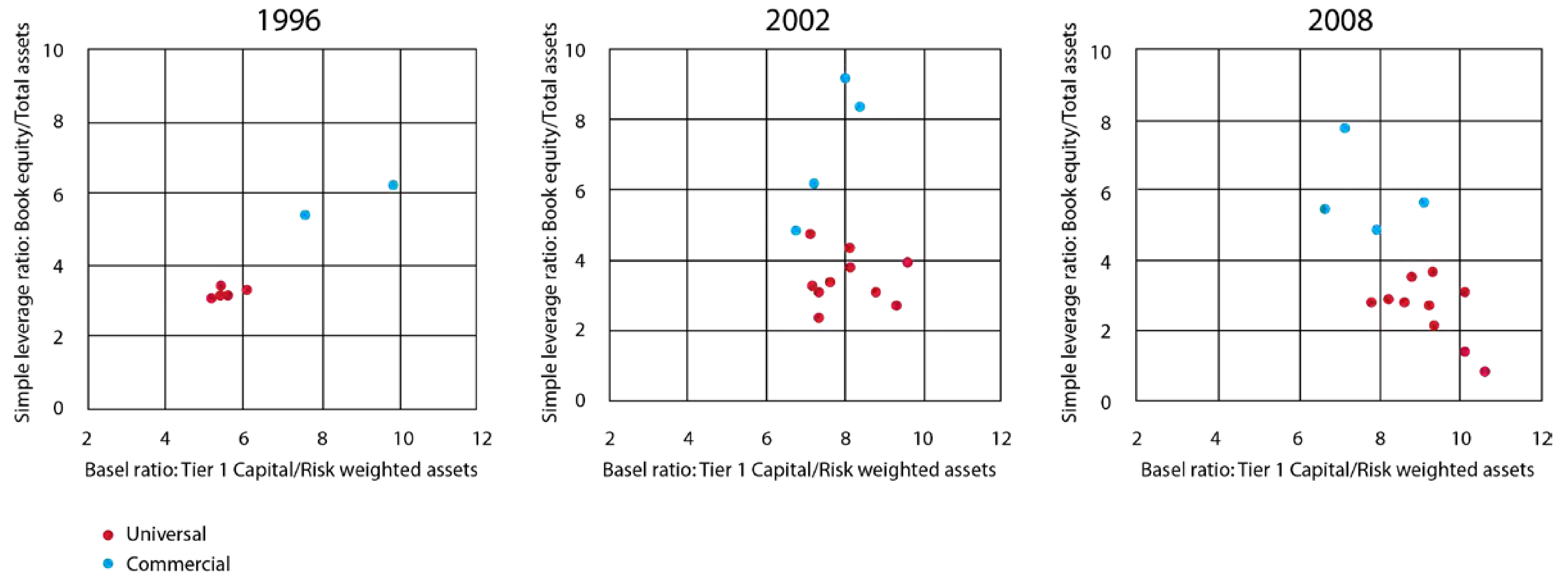

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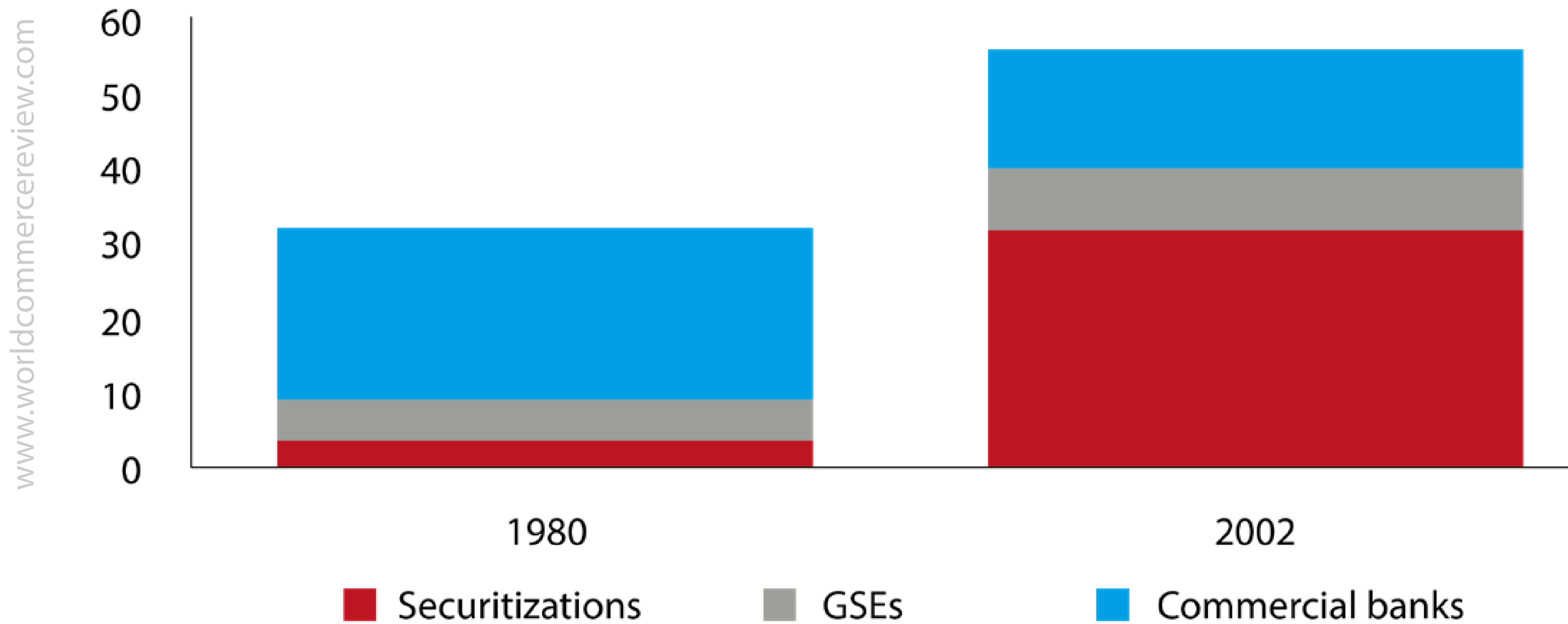
Figure 2. Banks sold most mortgages to markets by 2002



Source: US Flow of Funds.

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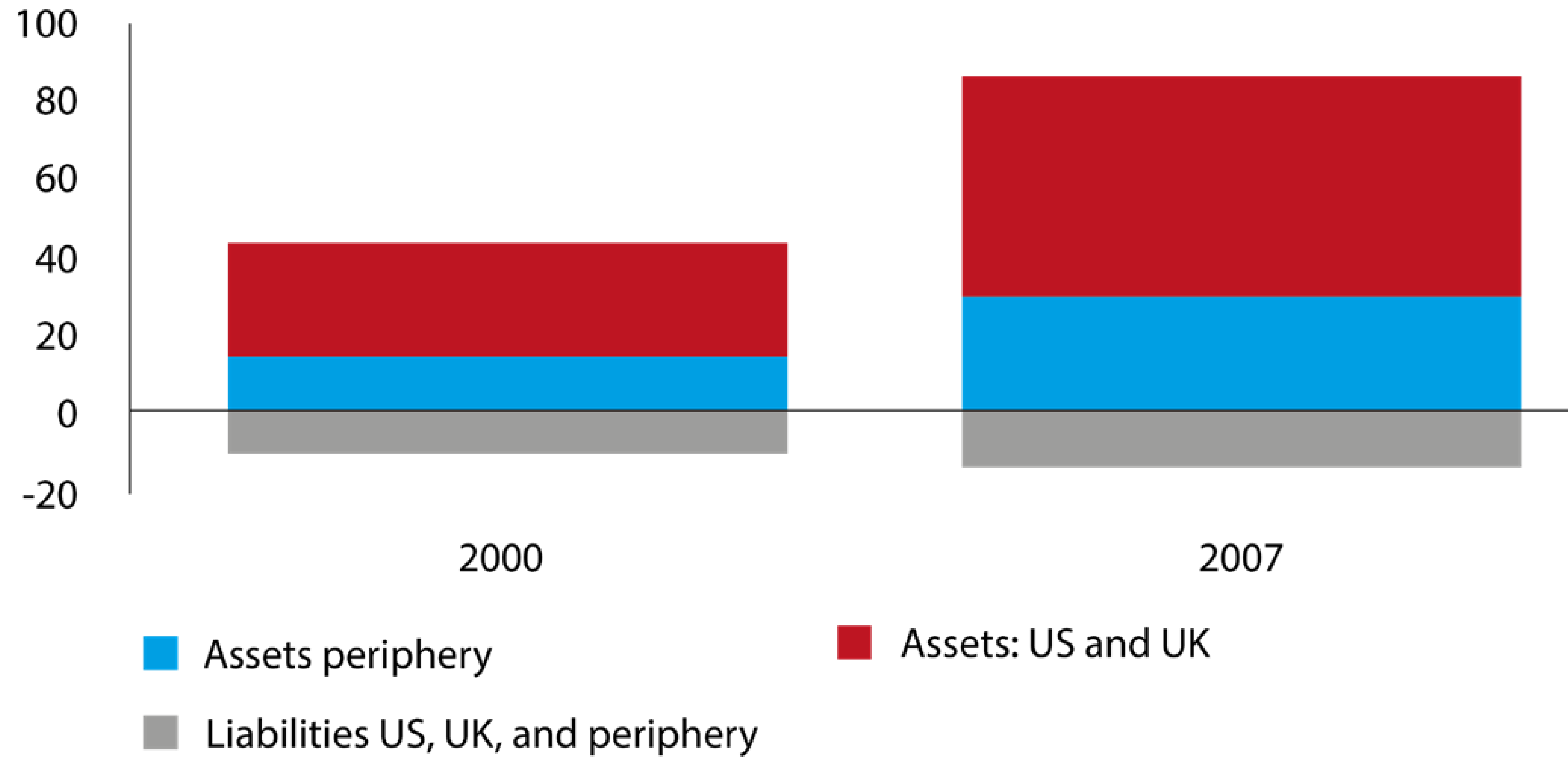
Figure 3. Core eurozone banks expanded rapidly overseas



Source: Bank for International Settlements

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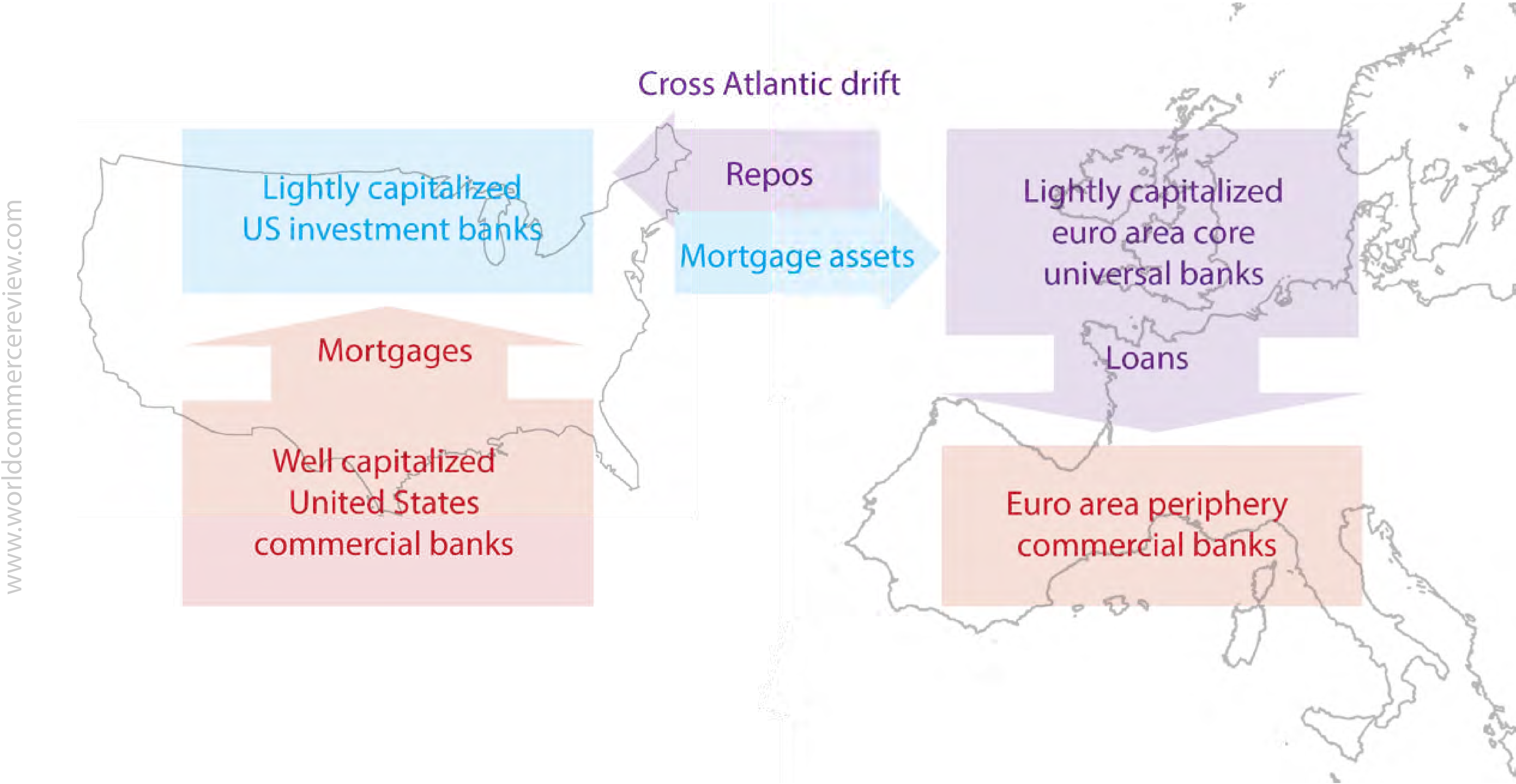
Figure 4. The North Atlantic financial boom



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The financial systems in the two halves of the North Atlantic economy were thus undermined in different ways. The European banking system decayed from within as the northern universal banks became increasingly fragile, while the US commercial banking system was undercut by the expansion of equally fragile shadow banks. This difference explains why the European banking crisis was so much more harmful. Many core US commercial banks were sound enough to assist in rescuing the system, unlike the more fragile European universal banks.

A 2003 decision on repurchase agreements (repos) by the US SEC and a 2005 amendment to the bankruptcy code helped to parasitically intertwine the increasingly fragile US and European banking booms. Repos were a convenient way for sophisticated investors to get dollar cash by temporarily loaning assets as collateral. The 2003 SEC decision expanded repo collateral to private US paper backed by mortgages and high-class foreign paper. The former was linked with a boom in high-yielding but unsafe mortgages dumped on the shadow banks, most famously subprime loans. The latter was linked with a massive expansion of northern European banks into the eurozone periphery.

Figure 3 shows that by 2008, northern European banks had loans amounting to 50% of regional output in the US and 30% in the eurozone periphery. These inflows help explain the easy financing conditions that helped propagate the US and eurozone bubbles – most notably, the eurozone periphery was essentially able to borrow on the same terms as Germany. When the bubbles burst, these exposures meant that losses cascaded back and hurt northern Europe. Figure 4 illustrates the mechanics of the North Atlantic boom.

Misdiagnosing the North Atlantic economy

A series of intellectual blinkers both allowed these bubbles to develop and increased the costs of the eventual crisis. Eurozone costs were magnified by its inadequate mechanisms to support sovereigns in difficulties, which originated in longstanding differences between the French and the Germans on the purpose of a single currency (see

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also Marsh 2011, James 2012). The French saw the single currency as a way of promoting economic integration, and pushed for mechanisms to provide support for countries during the transition to a smoothly functioning union. By contrast, the Germans saw the single currency as appropriate only after economic integration had been achieved, and therefore favoured an independent central bank and no support across sovereigns.

After the fall of the Berlin Wall precipitated the creation of the euro, the resulting haggling generated the worst of both worlds. A 'French' early currency union with a 'German' independent central bank and 'no bailout' clause. Lax enforcement of fiscal rules precipitated a crisis involving a downward financial spiral in which banking problems pressured government finances, which in turn put further pressure on banks, and so on. This dynamic helps explain the depth of the downturn in the eurozone even in the face of emergency financial support.

Intellectual blinkers also explain why growing pre-crisis financial imbalances were missed. An overinflated belief in market discipline on banks led the US Federal Reserve to support the Basel Committee's unfortunate switch to internal risk models – whose impact, ironically, was on European rather than US banks. Similarly, buoyed by an excessive confidence in the effectiveness of monetary policy, central banks focused on inflation rather than financial stability and prized independence over cooperation with other policy makers. Finally, international economic cooperation was undermined by a belief that spillovers from one country to another were small. These erroneous assumptions both allowed bubbles to grow and left policy makers unprepared to respond to their collapse. The outcome were major errors, such as the abrupt bankruptcy of Lehman Brothers.

Completing the cure

How effective has the response been to these deep weaknesses? On the policy front, the picture is mixed. US shadow banking has been tamed as major investment banks are now under the same – strengthened – regulation applied to commercial banks but there is now a backlash against tighter regulation. In the eurozone, banks' capital

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buffers have also been strengthened, but the major banks are currently still only using internal models to calculate the riskiness of their loans (see Adrian and Narain 2017 on the controversy on capital floors).

And while the architecture of the eurozone has been improved by allowing better support for members, this is limited to countries prepared to admit that they are in crisis. Encouragingly, bank supervision for the largest banks has been centralised at the ECB, but responsibility for the costs of bank rescues remain national. A more complete banking union and stronger macroeconomic and structural policies are needed to allow the single currency to move towards the smoothly functioning currency union the 'French' view envisaged.

Intellectually, the macroeconomics profession is only slowly adapting to the lessons from the crisis. Despite a lot of work on macro-financial linkages and an acknowledgement of financial risks and the role of macroprudential policies in maintaining financial stability, standard macroeconomic models generally retain assumptions found wanting over the crisis – that financial markets are omnipotent, monetary policy is powerful, and international spillovers are limited.

Those who do not learn history are doomed to repeat it. The North Atlantic crisis came from bad decisions made for understandable reasons. Without a better response to the deep policy and intellectual errors that drove the crisis, the region risks continuing the new mediocre. A true recovery will require accepting that there remains a lot of unfinished business. ■

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Author's note: This column reflects my own views, and does not necessarily reflect those of the International Monetary Fund or the Peterson Institute for International Economics, where I wrote the book on sabbatical.

Endnotes

1. Goodhart (2011) discusses the adoption of the Basel Committee's 1996 Market Risk Amendment.

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Economic implications of a protectionist US trade policy

Gabriel Felbermayr, Marina Steininger and Erdal Yalcin analyse three protectionist policies that have been discussed by the administration and the effects on the economy

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The Trump administration intends to restructure US international trade relations with its major trade partners to correct what it perceives to be unfair trade and establish a 'level playing field'. This column uses a structurally estimated and simulated trade model to analyse three potential protectionist policies that have been discussed by the administration. The results suggest that the promise to create more jobs and investment in the US through such policies is a fallacy.

Following the inauguration of Donald Trump, the new US administration initiated a detailed analysis of US trading relations with the rest of the world. Its aim is to identify supposedly increasing 'unfair trade practices' by other nations that threaten 'well-paid American jobs.' The heated political debate over fair trade focuses on the US' most important regional trading partners – Mexico and Canada – but large trade balance deficits with major partner countries like China and Germany have also come under fire.

In the case of China, the US administration sees subsidies and discrimination against US companies as an unfair trade policy. In the case of Germany, it criticises domestic consumers' weak appetite for US products. The administration has presented three protectionist trade policy measures as possible strategies for correcting what it perceives to be unfair trade, and for establishing a 'level playing field.'

Many others have discussed recent US trade policy gyrations (eg. Nordhaus 2017a, 2017b). There has even been a whole eBook on policy in the '*Age of Trump*' (Bown 2017) which is partly dedicated to Trumpian trade policy. Our analysis contributes to this research by quantifying the potential outcomes of further US policies for the US and other countries at the sectoral level (Felbermayr 2017).

We start by noting that the US actually levies relatively low tariffs compared to its trading partners (Figure 1)[1].

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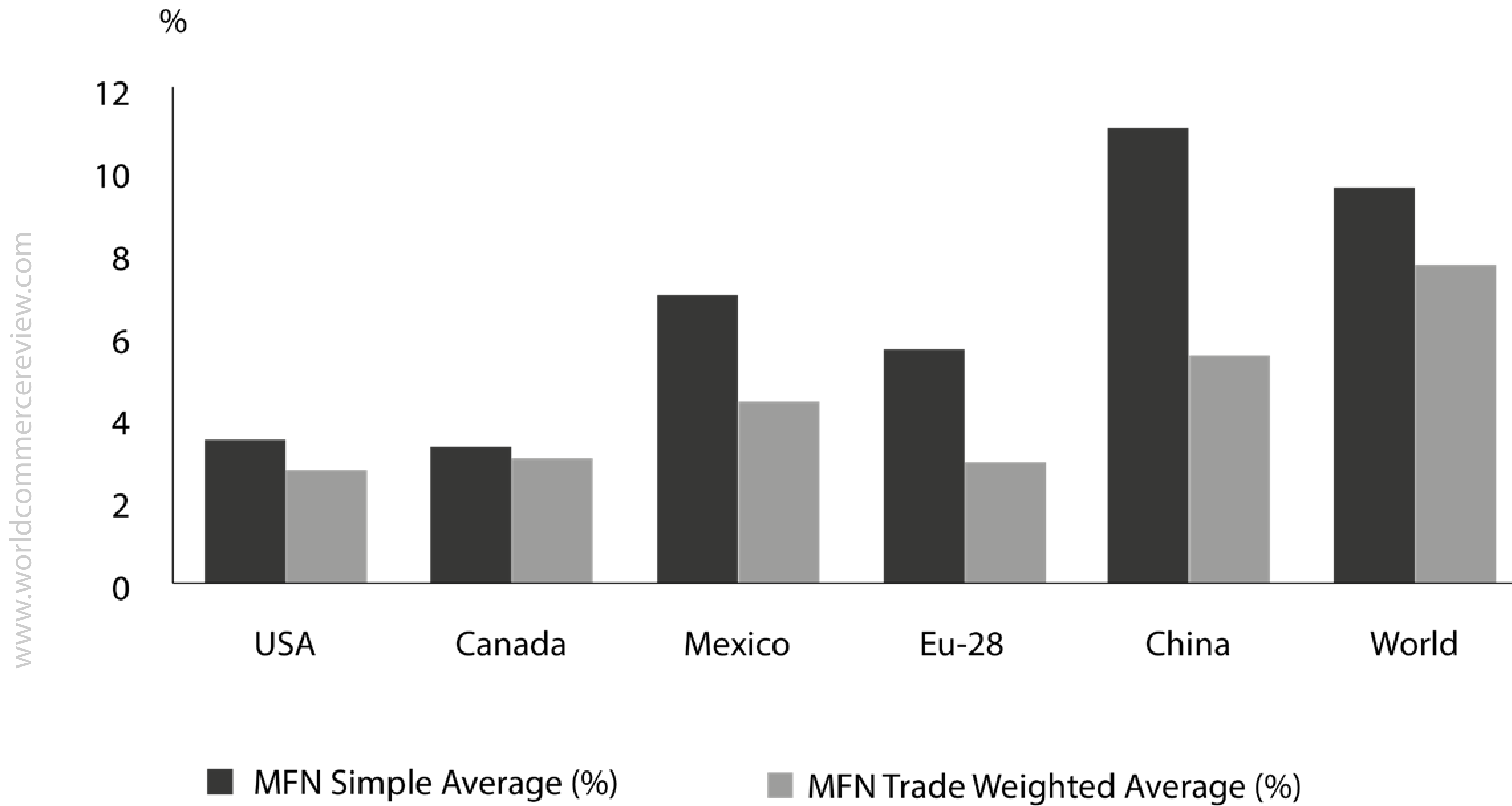
Figure 1. Average most-favoured nation tariff by country, 2015 (percent)



Source: World Integrated Trade Solutions

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In parallel to this liberal tariff policy, the US has been running a high trade deficit for many years, especially in goods trade.

Substantial US trade deficits can be observed with eight of the ten top US trading partners (Figure 2). Considering these two phenomena – low tariffs and high trade deficits – it initially seems understandable that US political stakeholders regard the present trade structure as unfair. Moreover, US jobs are particularly concentrated in industries that suffer from the country's open stance (Autor 2017). These interest groups unsurprisingly see the isolation of the US market as an effective cure.

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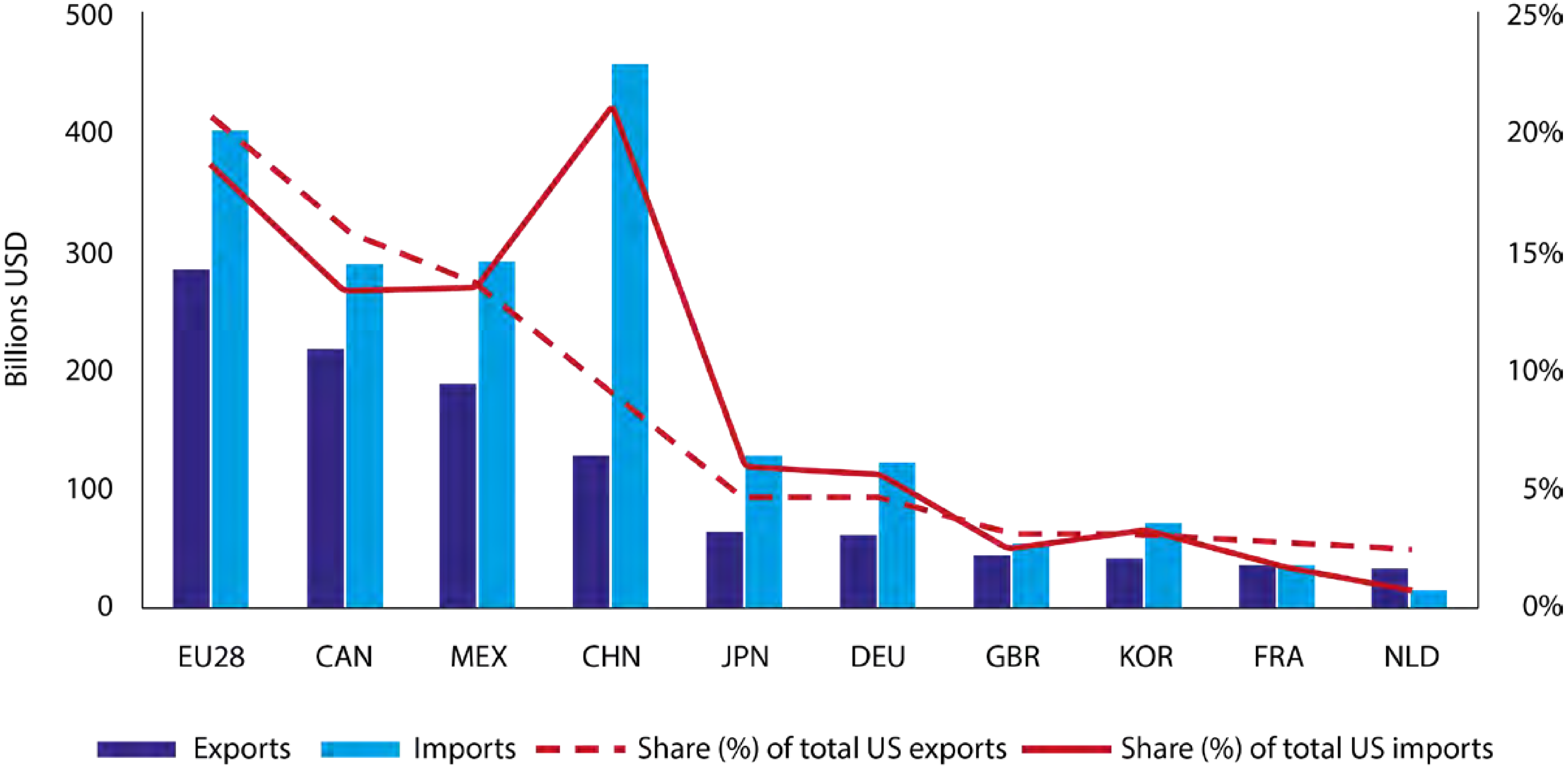
... our comprehensive analysis clearly discourages the US from pursuing the protectionist trade policy announced by its new administration for its own sake. Seeking new forms of cooperation with its main trading partners like China, Germany and the NAFTA partners would be a far more sensible strategy

Figure 2. US trade balance with its top 10 trading partners, 2015



Source: Baci World Trade Database

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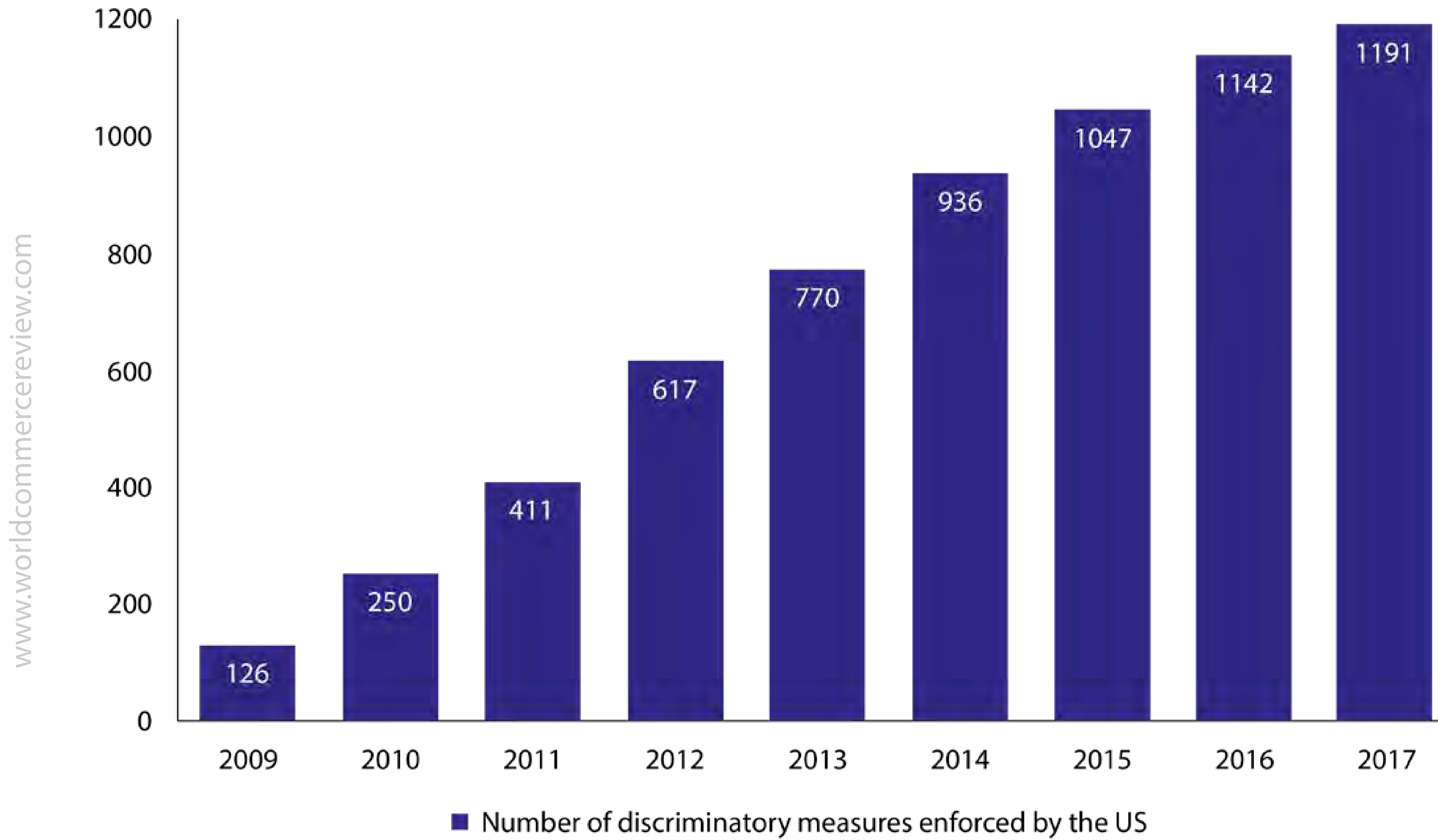
Figure 3. Number of US discriminatory measures since 2009



Source: Global Trade Alert database

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However, this assessment neglects non-tariff impediments that restrict trade flows. Figure 3 hints at substantial evidence of an increasing protectionist attitude from the US in the recent past. According to the recent data from the Global Trade Alert (GTA), the US is the most protectionist country within the group of G20 nations, as it implements by far the highest number of non-tariff barriers (see also Evenett and Fritz 2017).

Recent empirical studies illustrate that in the case of advanced economies, not only an increase in tariffs but, especially, an increase in non-tariff barriers is decisive for welfare losses. Thus, the communicated possible protectionist measures of the US might lead to severe economic consequences (Aichele *et al.* 2016).

The US has put the already very advanced negotiated trade agreements with both the EU and the trans-pacific countries on hold – TTIP and TPP will not be implemented for the time being. Official papers on the foreign trade strategy of the US president suggest renegotiating old agreements if goals such as the reduction of the trade deficit are not accomplished. The US has announced a renegotiation of the North American Free Trade Agreement (NAFTA). In addition, the Korean agreement and the conditions for China's WTO membership are candidates for US protectionism.

In light of these US trade policy developments, our study considers three possible protectionist trade policies whose implementation has been discussed by the Trump administration.

Our scenarios

1. Withdrawal from NAFTA

The first scenario considers the expected economic consequences of a reintroduction of US trade barriers with NAFTA countries. In doing so, possible tariff adjustments and non-tariff barriers between the NAFTA countries are taken

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into account. Blanchard (2017) offers a thorough explanation of the rationale behind the arising difficulties for the NAFTA agreement. We build on this analysis and quantify the consequences of a potential dissolution of the NAFTA.

2. Protectionist US trade policy with respect to the rest of the world

In principle, it is possible for the US to introduce an even stronger protectionist trade policy by systematically raising tariffs and non-tariff measures on all traded goods. Accounting for such a restrictive trade policy, in a second scenario, US tariffs are assumed to increase by 20% against all WTO member countries; retaliation of US trading partners causes tariffs against the US to be increased by 20%; and the US raises its non-tariff barriers by 20%. Furthermore, WTO countries equivalently introduce non-tariff barriers as retaliation measures against the US.

3. Introduction of a border tax adjustment

In 2016, US representatives Paul Ryan and Kevin Brady introduced a new tax reform. They proposed to decrease the federal tax on corporate profits from today's 35% to 20%, to enable investments to become completely deductible, and to make international revenues subject to a so-called border tax adjustment. More concretely, exports are deducted from tax, while imports are added. Consequently, the system would tax consumption more heavily rather than production, and is thus equivalent to the European system of value added taxes. It thereby offsets the disadvantage of the (non-deductible) equity with the deductible foreign capital. This setup builds on Bown et al. (2017), which explains the concept of the border tax adjustment thoroughly (see also Buiter 2017 for an excellent treatment).

Our results

Our simulation for the three discussed US trade policies show very clear results:

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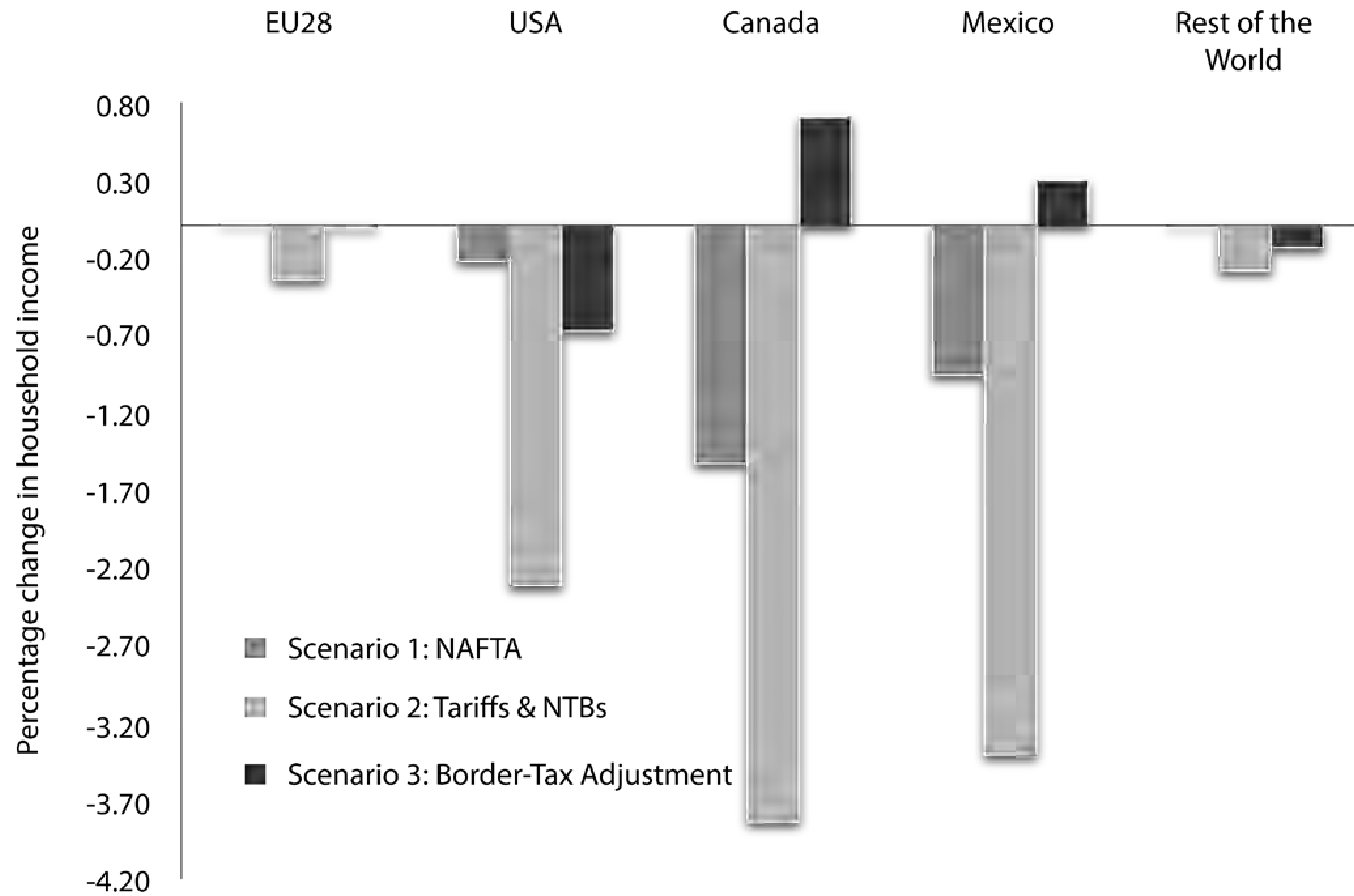
Figure 4. Percentage changes in household income following specific US trade policy



Source: Own calculations

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US withdrawal from NAFTA

The revocation of the North American Free Trade Agreement would damage its member countries – the US, Canada, and Mexico – the most. Canada would be most affected as gross household income would decline by 1.54% over the long-run. Mexico and the US might lose 0.96% and 0.22% of gross household income, respectively. US exports of goods and services to Canada are predicted to contract by US$33 billion and to Mexico by $17 billion.

Slightly increasing US export volumes to Europe and the rest of the world do not compensate for these losses. As a consequence of the protectionist US policies implemented, imports from Canada and Mexico would fall sharply. On aggregate, the import reductions from NAFTA countries would amount to $110 billion; trade diversion effects can only compensate to a small extent for this reduction. Additional imports worth $29 billion could be obtained from other countries, such as Germany. In nominal terms, imports from China, Japan, and Germany are expected to increase the most.

US protectionism against all WTO members with retaliation

Gross household income and real wages in WTO member countries would incur losses from increasing tariffs and non-tariff barriers. In particular, Mexico and Canada would experience disproportionate declines. Evidently, retaliative trade policy measures by WTO members against the US would not improve the situation in any country. In general, this can be attributed to the strong dependency of domestic economies on the US market.

Nevertheless, individual countries would be able to reduce the potential loss through countervailing measures (eg. a tariff increase), yet not one country could fully compensate the incurred contraction in gross household income and real wages. Vengeance should therefore not be the main response to threatened discriminatory US policies.

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Border tax adjustment

The introduction of a border tax adjustment would cause US gross household income to contract by 0.67%. Other countries, such as Germany (-0.86%), the Netherlands (-0.74%) and South Korea (-0. 3%), would suffer even greater losses from a border tax than the US itself. On average, Europe would experience an increase in its gross household income of 0.04%. The aggregate effect of a US cash flow tax would cause a decline in total US exports and imports. In relative terms, US trade would decline homogeneously across all partner countries, while the relative magnitude of export contraction would be, on average, slightly higher than on the import side.

At the sectoral level, an overall decline in exports and imports across nearly all sectors would be expected. The same picture can be found for other countries, albeit on a lower relative scale. Contrary to the communicated expectations of the US government, a border tax-based trade policy would only lead to decreasing global exports and imports.

The US protectionist trade policies discussed here generate benefits neither for the US itself nor for the rest of the world. The consequences of a withdrawal from NAFTA mainly affect its current members (Mexico, Canada, and the US); outside countries are hardly affected. The introduction of a border tax adjustment, however, touches all US partner countries to different extents. The impact of this on macroeconomic variables is still lower than in the case of US protectionist measures against WTO countries in combination with retaliative responses.

The fallacy of the protectionist promise

Our analysis clearly shows that the US administration's promise to create more jobs and investment in the US through the presented trade policies is a fallacy. In all of the scenarios, the isolation of the US market would primarily have a negative impact on the US economy itself in the long term. It is also clear that a protectionist trade policy would most likely lead to a worldwide policy of retaliation against the US. In such a scenario, the threat of economic

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damage is again particularly pronounced for the US. These findings are similar to a recent study of Hufbauer and Jung (2017), who focus on the legal and economic aspects of Trump's protectionism.

Clearly, there is need to support workers forced to reorient themselves as a result of intensified competition due to trade. However, these challenges should be addressed with policy instruments that do not distort trade, such as public support for training programmes (Qureshi 2017). At the same time, countries like China and Germany have to ask themselves whether their present trade surpluses are sustainable in the long term. In the case of Germany, this criticism should be put into context, because the surpluses are not induced by politics but can be explained, for example, by demographic ageing and the high saving rate that goes with it.

The case of China is different. The relatively high level of isolation of the Chinese market and the simultaneous increase in overcapacity in individual industries, such as the steel sector, are leading to unfair trade with the US and are encouraging a rash political response in the US. Finally, it should also be pointed out that in the service industries – in which it still has a high competitive advantage – the US generally runs a trade surplus.

Concluding remarks

To sum up, our comprehensive analysis clearly discourages the US from pursuing the protectionist trade policy announced by its new administration for its own sake. Seeking new forms of cooperation with its main trading partners like China, Germany and the NAFTA partners would be a far more sensible strategy. First steps in this direction are to be found, for example, in the 'Global Forum' for the global reduction of steel overcapacity and dumping. Such new coordination platforms are becoming increasingly necessary and help to identify new issues that can subsequently be tackled by existing international institutions like the WTO on a larger scale.

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Finally, the US was the architect of the global, rules-based multilateral trading system. The country has consistently pushed ahead with the three pillars of the international economic system – the World Bank, the IMF, and the WTO. It is time for leading industrial countries to support the US in this endeavour in order to avoid a cutback in free trade. Here, beneficiaries of the US post-war policy – such as Germany, Europe and Japan – need to recognise that they bear a special responsibility and should step up to the challenge. ■

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Endnote

1. In the study we present a more detailed picture of US tariffs against different trade partners, and on a disaggregated level

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EMU - how much federalism?

Peter Praet reviews how federalism has evolved in the EU, focussing on the issue of risk-sharing and governance within Economic and Monetary Union

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Despite significant improvements to its architecture over recent years, there is a clear sense that Economic and Monetary Union, or EMU, remains incomplete. There is much less clarity and precious little agreement on what a complete EMU would look like, however. This is why the question– *"how much federalism"* – is so relevant.

I would like to first review how federalism has evolved in the EU, highlighting that it is as much a process as it is an end-state. I will then – drawing on the economic concept of fiscal federalism – look more at the question of *"how much federalism"*, focusing on issue of risk-sharing and the role of different levels of governance within EMU.

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Federalism in the EU

The nature of the discussion on federalism in Europe has changed quite dramatically over time. Shortly after the Second World War, the ambition for some was to create a 'United States of Europe', mainly as a way to avoid re-newed, devastating war.

This vision was shared by those who laid the foundations of the European Union in the 1950s, most notably Jean Monnet, the first President of the European Coal and Steel Community. From today's perspective, it may seem sur-prising that the start of such a grand project was confined to an area as specific as coal and steel. But Monnet and the other early architects of European integration clearly understood that political federalism was the end-point of long process, which had to be achieved incrementally and through focused actions in limited policy areas where the benefits of European cooperation could be clearly seen.

To quote one of Monnet's contemporaries, Alcide de Gasperi,*"we must begin by pooling only what is strictly essential to the achievement of our immediate aims, and do this by means of flexible formulae which can be gradually and pro-gressively applied"*. For these 'fathers of Europe', however, it was self-evident that such incremental measures would

gradually move Europe deeper into federalism. Indeed, this clear sense of direction was, in their way, a key motor to keep the integration process moving forward.

Since then, the European integration process has tended to move in waves. There have been times when it has stalled, such as the during the 'empty chair crisis' in the 1960s. And there have been times when it has unexpectedly sped ahead, such as with the launch of the Single Market Act in the 1980s, and the commitment to Economic and Monetary Union (EMU) in the 1990s. But today, there is some confusion as to where we stand.

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The answer to the question – "How much federalism?" – is not easy. Yet, speaking as an economist, I think it is likely that the right answer lies on the side of 'more than today' rather than 'less than today'.

In some ways, the degree of ambition to achieve a full political federation seems to have become more limited, which has led some to wonder whether the integration process will lose its forward momentum. This reflects in part the failure of the Constitution for Europe in 2005. The unsuccessful referendums in France and the Netherlands can be interpreted in different ways, but they clearly suggested that the people of the European Union were not ready to embark on the road towards full political federalism – or at least not at that point in time. It is also fair to say that the appetite for such federalism today is not much different from in 2005. In recent years there have been growing doubts about the European project.

At the same time, polls consistently show that European citizens support federal decision-making in a wide range of areas, ranging from energy to migration to the fight against terrorism. This reflects the fact that the benefits of federalism are much broader than its economic, fiscal and monetary dimensions. Indeed, since the EU was originally devised as a peace-keeping device, it is not surprising that one of the early initiatives for European integration was a motion to establish a European Defence Community, although this failed in 1954. While a full defence union is probably still unrealistic, there are increasing signs that further integration in this area could happen in the near future.

The Commission reflection paper published on 7 June of this year lays out proposals for establishing a European Defence Fund, which could form the nucleus of a future defence union. Recently, the European Council welcomed the significant progress made by member states in preparing a Permanent Structured Cooperation (PESCO) in the field of defence, and the work done on the Commission's proposal for a European Defence Industrial Development Programme (EDIDP). All this clearly chimes with the preferences of European citizens, three-quarters of whom support 'a common defence and security policy among EU member states'[1].

The conclusion that follows is that we have to distinguish federalism as a state from federalism as a *process*. It may be the case that a full political federation is not currently desired by European citizens. But that does not mean that

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they reject the process of federalism – which is to say, the dynamic allocation and reallocation of responsibilities to different levels of government according to the preferences and needs of the time.

While this process may benefit from the gravitational pull of a pre-defined end point, it can also advance without it, so long as actions are taken in areas where the benefits of cooperation are clear and the steps taken are legitimate in the eyes of citizens. Indeed, what gave the EU both momentum and popular legitimacy in the years after the war was its achievements – effective actions in specific areas – not necessarily the visions of a unified Europe.

So how much federalism would satisfy these requirements today? One way to assess this is through looking at the economic aspects of federalism. Certainly, as Richard and Peggy Musgrave wrote, *"economic analysis does not tell us what degree of closeness the member units of a federation should feel toward each other".* Political aspects transcend economic ones. But economic analysis can help us better understand the consequences of various institutional arrangements and choose the instruments we should use to pursue our common objectives. In the rest of my remarks I will zoom in on some of these aspects of federalism.

Economic aspects of federalism

An important theme – one aspect of which will be addressed in the first session today – is risk-sharing. The crisis has reminded us that both private and public risk-sharing are underdeveloped in Europe, and that this underdevelopment comes at huge cost.

So, there is general agreement that risk-sharing channels need to be improved. There is less agreement on where the emphasis should lie. Some argue that the priority should be to strengthen private risk-sharing, by completing the banking union and establishing a truly integrated capital markets union. Others argue that EMU needs to focus on public risk-sharing, be it through introducing a central euro area fiscal capacity or creating safe assets.

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In reality, separating these two channels of risk-sharing is far from the obvious solution. Is private risk-sharing a substitute for public risk-sharing? Or do they complement each other? There are several arguments in support of the view that the two channels complement each other – but only if the right powers are matched at the federal level.

For example, it is clear that the banking union would not fully achieve its goal of severing the toxic link between banks and national governments without a central fiscal backstop for the already-existing Single Resolution Fund, as well as for the European Deposit Insurance Scheme that is still under discussion. At the same time, fiscal backstops generally raise legitimate questions about incentive structures to protect taxpayers, which need to be addressed in parallel by appropriate fiscal governance at the federal level.

The process of building the banking union also illustrates how important it is to reach an appropriate degree of federalism to achieve the objective of a stable and integrated financial system that supports the European economy. Ideally, in a genuine banking union banks would operate in the Single Market just as they operate in their domestic market. This is essential to reap the full benefits of financial integration. The country in which a bank is headquartered should be irrelevant. But, in practice, it remains relevant for as long as the consequences of potential bank failures are still predominantly national. The irrelevance of a bank's headquarters, therefore, depends on the institutional structure of the banking union.

Let me take one very specific example to illustrate my point. The banking union is not yet considered a single geographical area in the supervisory methodology applied to globally systematically important banks. These G-SIBs are subject to additional capital requirements, which are calibrated on the basis of a cross-jurisdictional indicator. This indicator reflects the fact that failures of global banks are more difficult to handle owing to coordination difficulties and cross-border spillover effects.

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When the responsibility for banks is shared, additional capital buffers for cross-border activities lose their *raison d'être*. A single set of harmonised prudential rules for all banks in the European Union would not, in and of itself, be sufficient for the EU to be considered as a single geographical area. But the Single Rulebook, the existence of a single supervisor, the Single Supervisory Mechanism (SSM), of a single resolution authority, the Single Resolution Mechanism (SRM), and of a common backstop, the Single Resolution Fund (SRF), when taken together, have equipped the banking union with all the features of a single geographical area. This should mean that the banking union is treated as a single geographical area in the supervisory methodology in future.

Finally, there is the question of how to design fiscal risk-sharing mechanisms for EMU, while taking into account EMU's unique nature. In existing federations the stabilisation function of the central budget is usually a by-product of redistribution via large tax transfer systems. At this stage of European integration, it is clear that any politically acceptable euro area fiscal capacity will be modest in size.

So, the key question for the economics profession is whether it is possible to remove the link between the stabilisation function and the redistributive function, allowing for a central budget of moderate size to have a meaningful macroeconomic stabilisation effect. If this were possible, such a central budget could help monetary policy, especially in times of deep recessions when nominal interest rates may reach their effective lower bound. The European Commission set out some proposals in its reflection paper published on 31 May – these require further study.

Conclusion

The answer to the question – *"How much federalism?"* – is not easy. Yet, speaking as an economist, I think it is likely that the right answer lies on the side of 'more than today' rather than 'less than today'.

Monnet famously said that *"Europe will be forged in crises, and will be the sum of the solutions adopted for those crises."* He was certainly right that further integration will proceed incrementally rather than in a big bang. What I hope,

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though, is that Europe will not be forged in crises only. Significant progress towards a genuine Economic and Monetary Union has been achieved in times of acute crisis. Today's improved economic environment offers a window of opportunity to demonstrate that progress is possible in quieter times, too. ■

Peter Praet is a Member of the Executive Board of the ECB

Based on an address at the 5th Frankfurt Conference on Financial Market Policy, organised by the SAFE Policy Center of Goethe University, Frankfurt am Main, 27 October 2017

Endnotes
1. Standard Eurobarometer 87, Spring 2017 (fieldwork: May 2017).

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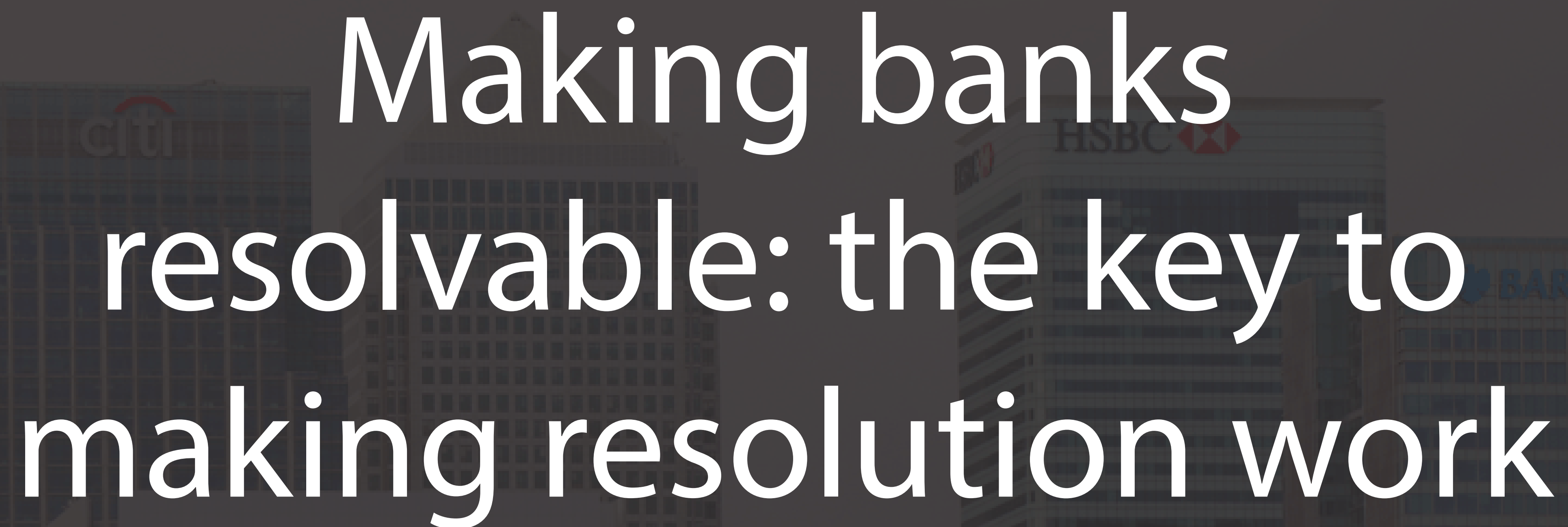
Making banks resolvable: the key to making resolution work



Andrew Gracie looks at resolution since G20 leaders put together the post-crisis financial reform agenda in 2009. He reviews where we are on the journey as well as what has been done and what is left to do

Introduction

Resolution has come a long way since G20 Leaders put together the post-crisis financial reform agenda in summits in London and Pittsburgh in 2009[1]. In some ways, it represented the most notable gap, and significant change in the pre-crisis regulatory architecture. Nearly ten years on, huge progress has been made in establishing effective resolution arrangements and the commitment to ending too-big-to-fail (TBTF) is undimmed.

The immediate priority in this effort was to put in place the necessary legal frameworks. Agreement in 2011 of Financial Stability Board (FSB) Key Attributes for Effective Resolution Regimes provided the international standards to ensure a consistent approach to the design of resolution regimes across G20 jurisdictions[2].

The UK now has in place a comprehensive bank resolution regime that is compliant with international standards and will remain so after Brexit. Similarly, for all advanced economies, there are now resolution regimes that are largely compliant with the Key Attributes in all the jurisdictions that are home to global systemically important banks (G-SIBs).

But the Key Attributes were about effective resolution regimes rather than resolvable firms – they defined a tool-kit but not how to use it; and a process for resolution planning for G-SIBs but not what would make a firm resolvable. Powers without resolvability leaves resolution authorities vulnerable.

Indeed, the moral for me of recent failures and near-failures is not that resolution is misguided and will not work, but that it will not work if firms are not regulated and supervised in a way that makes them resolvable.

This is the story of the last five years. We have focussed on organising firms in such a way that authorities' resolution powers can be used without significant adverse consequences for the rest of the financial system or the wider econ-

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omy. This moves us progressively to where we want to be against risk appetite. And though we are not yet where we finally need to be, what has been done has already yielded significant benefits. For example rating agencies have largely removed government support uplifts to bank' credit ratings[3]. Where UK firms have come under stress, our resolution arrangements have been one factor that has helped secure recovery.

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There is a famous Chinese proverb that notes a journey of a thousand miles begins with a single step. On the resolution journey there have been a lot of steps – in fact we could all be forgiven for feeling footsore – but the thousand-mile marker is coming into view

I want to review where we are on the journey: what has been done and what is left to do. I want to focus in particular on three topics:

(i) internal total loss-absorbing capacity (TLAC) or minimum requirements for eligible liabilities and own funds (MREL) and the underpinning it provides for cross-border co-operation;

(ii) bail-in mechanics – having required banks to maintain TLAC or MREL, we need, as resolution authorities, to be clear how we would use it; and

(iii) disclosure – resolution needs to be credible as well as feasible. With credibility comes market discipline ex ante and less disruption in a resolution (lower probability of default and loss given default in other words).

All three areas build on the core work of resolvability that has already been done, illustrating the point that the process is incremental and resolvability is not binary but progressive.

Resolvability of firms

Let me start then by reviewing what has already been done. I will focus on the standards and guidance coming from the FSB. It is true that they have been drawn up for application to G-SIBs in Crisis Management Groups (CMGs). But in our view, they are equally applicable to domestic systemically important banks (D-SIBs) or other firms where bail-in is the preferred resolution strategy, especially where firms operate cross-border.

The convergence at international level on bail-in as the appropriate strategy for large banks is itself significant. This transcends whether firms are single point of entry or multiple point of entry. And whether the bail-in is effected by use of a bail-in tool in an operating bank or by application of a bridge bank tool at holding company level. It rep-

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resents the realisations that if we are to end TBTF we must have bail-ins instead of bail-outs so losses can fall on investors not on taxpayers. And that the bail-in must enable continuity in a firm's operations to avoid interruption to critical functions and to buy time for an orderly reorganisation of the firm to the extent necessary to deal with the problem that first caused the failure.

This shared understanding at FSB, and the desire to meet the goal set by G20 Leaders to end TBTF and the risk of taxpayer bail-outs as soon as possible, has driven a focus on seeking changes at firms so that they can be stabilised and enter resolution safely without disruption to critical functions. Hence the focus on two dimensions:

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- Loss absorbency: firms need TLAC in the right amount (enough not only to absorb losses but to provide for recapitalisation so firms can continue to meet requirements for authorisation); in the right form (debt with residual maturity of a year and subordinated to operating liabilities to avoid breaches of the 'no creditor worse off than insolvency' (NCWO) safeguard or other challenges to the bail-in and at the same time to provide clarity to depositors that they are not likely to be bailed in); and in the right location (ensuring that resources are positioned within a group so that the key operating companies containing a firm's critical functions can be recapitalized immediately in resolution).As such, international agreement of the FSB's TLAC standard in 2015 represented a major milestone in moving towards ending TBTF[4].

- Continuity of critical functions: the second main dimension of stabilisation is to ensure continuity in a firm's operations in resolution. Part of this is legal – changing contractual arrangements so that entry into resolution does not result in widespread, disorderly termination, close-out or acceleration in financial contracts, provision of services or access to financial market infrastructures (FMIs). It is true that under the Key Attributes, resolution regimes include statutory powers to stay. But statutory stays may not be effective cross-border. And, anyway, repapering contracts helps to convey to counterparties that there will be continuity in reso-

lution and so reduce incentives to break for the exit. FSB has published guidance in this space for operational continuity in resolution and continuity of access to FMIs[5].

Perhaps the most notable effort has been FSB's work with industry to agree a protocol to International Swaps and Derivatives Association (ISDA) and other master netting agreements that addresses close-out risk in over-the-counter (OTC), derivative and repo transactions[6]. Agreement in 2014 of the universal protocol amongst G-SIBs, and subsequently of jurisdictional modular protocols for individual jurisdictions to bring in buy-side and non-G-SIB counterparties, is another major landmark in ensuring big international firms are resolvable[7]. The protocol is built around the premise that entry into resolution should not be classed as an event of default as long as a firm continues to perform.

This underscores the importance of funding to making resolution credible. FSB set out principles on funding in resolution in 2016 and just last week published for consultation guidance for use in CMGs on the liquid resources and liquidity management capabilities firms require to be adequately resolvable and how liquidity in firms might be bolstered in adverse cases by public backstops[8]. CMGs will use the guidance to draw up resolution funding plans setting out how, in order to achieve resolvability, liquidity and collateral should be held in a group across legal entities, currencies and locations.

We have made good progress in regulating these various FSB standards in the UK, either through Bank of England Policy statements or Prudential Regulation Authority (PRA) rules. UK banks have been given indicative MREL requirement to meet by 2020; they will have operational continuity arrangements in place in 2019 (alongside the implementation of ring-fencing); and they are already trading on protocol terms with buy-side firms as well as other G-SIBs. To the point that resolvability is progressive, the major UK banks on average now have total loss absorbency

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of 23% measured against risk-weighted assets (RWAs) compared to an average end-state requirement of 28% (including buffers)[9].

As described, there is more to do in some of these areas. But increasingly the emphasis is on implementation and, with it, assurance – how we supervise firms against these regulatory requirements and hold them to account that identified barriers to resolvability are removed and stay removed. In describing the progress towards end-state resolvability, I want to pick out three areas that will be a focus in the period ahead.

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(a) Internal MREL

The first is internal MREL. One lesson that the crisis brought home is that the distribution of resources within groups matters. While in life, firms might want to run themselves by business lines on a consolidated basis, failure and resolution occurs at legal entity level.

It is understandable then that since the crisis that there has been a discernible tendency for host authorities to hold onto more resources, capital and liquidity, or to force activity in branches into subsidiaries. The aim at FSB level with TLAC was to lean against this tendency towards fragmentation of international groups by providing comfort to authorities cross-border, not only that groups would have sufficient external TLAC to be resolvable but also that resources would be prepositioned as internal TLAC in material subsidiaries in host jurisdictions.

Previous international regulation of financial resources in groups has, like the Basel Accord, typically focussed more on the consolidated level. Now applying TLAC regulation at legal entity level has brought with it challenges.

One is timing: it is hard to roll out internal TLAC for a group until TLAC requirements are in place in all the jurisdictions relevant for the material subsidiaries. The Bank is in the middle of consulting on its internal MREL policy[10] but many other jurisdictions – notably the Banking Union, Switzerland and Japan – have still not set policy.

Another challenge is arithmetic: to the extent that there are financial dependencies between legal entities within a group the sum of solo RWAs is likely to be greater than consolidated RWAs. If a full TLAC requirement were applied to each subsidiary then the sum of the internal TLAC would exceed the consolidated TLAC requirement for the group as a whole.

This was addressed in the TLAC term sheet in two ways:

- by limiting internal TLAC only to subgroups and subsidiaries that are material to the group, accounting for more than 5% of RWAs or income. The logic there was that at that level failure of the material entity might trigger resolution of the group as a whole; problems for smaller entities, even those that might house functions that are critical to the host jurisdiction, should be more of a recovery matter.

- by including a provision that internal MREL for subgroups should be scaled in single point of entry (SPE) groups to 75-90% of the requirement that would apply to the subgroup on a standalone basis. The logic was that given the interdependence in the business models of SPE firms, prepositioning in this range would be sufficient to secure cooperation and deter hosts from ring-fencing, and home authorities from cutting off, foreign subsidiaries. Prepositioning of resources in this way will provide concrete underpinning for cooperation that goes beyond the paper commitments to cooperate in Memorandum of Understandings (MOUs), honoured in the breach in previous cross-border failures.

Even with these restrictions there may still be a sum of the parts problem in which the sum of TLAC requirements at solo level pushes up external requirements. If internal TLAC requirements are high they are also likely to stand in the way of holding a surplus at the top of the group that could provide flexibility in covering losses if they are concentrated in a particular part of a group.

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Thus in our internal MREL policy our intention is first to consider setting internal MREL generally for the firm at the bottom of the 75-90% range[11]. But to set a higher requirement if we have doubts about: the home resolution strategy, the availability of a surplus at the top of the group or a lack of reciprocity in MREL-setting in other jurisdictions (that is others all set at the 90% end of the range). We expect to say more about surplus MREL and the form it should be held in to be readily available when we come to finalise our internal MREL policy next year.

Another important objective for us in setting policy on internal MREL is to avoid any distortion in the sequence of loss absorption between operating companies (OpCo) and the group holding company (HoldCo). We require UK banks to issue external MREL out of their HoldCos, structurally subordinated to liabilities at the OpCo. The issuance proceeds are then onlent to the OpCo as internal MREL broadly mirroring their external form, for example: Tier 2 could be onlent as Tier 2, AT1 as AT1 and senior debt out of HoldCo would be downstreamed as an internal debt instrument sitting senior to capital instruments but junior to operating liabilities in the OpCo.

We need to be sure that as losses are incurred in the operating company they are absorbed in an order that follows the OpCo creditor hierarchy and does not bypass certain instruments. The aim with a single point of entry bail-in strategy, as the name suggests, is only to put one entity at the top of the group into resolution, preferably a holding company which is only used for issuing capital instruments to the market and otherwise has no or limited operating liabilities.

Write down or conversion of internal MREL instruments via contractual triggers will then allow operating companies lower down the group to be recapitalised automatically without putting them into resolution. But legacy non-equity capital instruments in OpCos without the requisite contractual triggers could cut across this. We do not want these to be spared bearing losses for want of a trigger. And so, we are clear that such instruments should not count as MREL beyond 31 December 2021 and if not matured by then we will work with firms to remove them if they represent a barrier to the resolution strategy.

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This is part of a larger effort to add to the credibility of resolution by being clear to debt investors and other stakeholders how a bail-in will work in practice. We want debt investors to be able to price risk effectively by being clear about where they rank in the creditor hierarchy and to give them confidence that we can stick to the hierarchy in applying losses and that we will not be picking winners and losers within a class. Counting as MREL senior debt issued out of operating companies without subordination looks like a recipe for undermining that confidence.

(b) Bail-in execution

We also want to be clear as a resolution authority how we will conduct the resolution in a way that preserves value and distributes it fairly, ensuring no creditor worse off protections are met. To that end, we have thought hard about the valuation capabilities we need firms to have so that we can value losses and recapitalisation needs in an effective and timely way. We have just consulted on a set of principle level requirements and expect to finalise policy in this space in the next few months[12].

We believe that the bail-in valuation for a large cross-border firm is not something that can be fixed over a weekend. Valuation on that timetable will inevitably tend to overshoot on the estimation of losses, not least because a significant driver of the valuation will be the reorganisation that follows the bail-in and the restructuring costs and disposal valuations associated with that.

Rather, it is our intention to take several months for the bail-in valuation to ensure that through an independent valuation process, losses as far as possible are bottomed out and tie back to the reorganisation plan for the surviving business. It will be critical to determine the net asset value that had been generated in the bail-in and the liability holders it should go to as compensation.

You may ask, what happens in the intervening period? From the perspective of the debt investor, our intention on entry to resolution is to take control of the shares in issue and immobilise all the other external MREL instruments

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at the relevant international central securities depository (ICSDs) and central securities depository (CSDs). We will at the same time issue onto the bondholders accounts at the ICSDs a tradeable certificate of entitlement secured by the shares in issue. There will be as many classes of certificate as there are classes of claim. Once the valuation is complete and we have announced the terms of exchange, holders will present the certificates in exchange for whatever equity they are entitled to as compensation. The resulting shareholders will then vote in a new board and the firm will return to private sector control.

Issuing certificates of entitlement in this way will provide a mechanism for debtholders that do not want to, or due to their mandates, are not able to hold equity to trade out of their positions. And this will have an ancillary benefit for us of providing some sort of shadow market valuation of the firm.

But what about other liability holders – depositors, market counterparties, trade creditors etc. – during this interval?

Our aim with the announcement of the resolution is to send a strong signal to them that their claims are safe and that the operating companies they are transacting with will continue to perform.

Full conversion of internal MREL in the key operating companies around the group and a strong sense that the firm will have access to liquidity will contribute to that. To this end, the Bank has established new arrangements to clarify, first, that a firm in resolution would continue to have access to the ordinary central bank facilities in the Sterling Monetary Framework, subject to meeting the necessary eligibility criteria.

And second, those arrangements will be supplemented where necessary by a flexible Resolution Liquidity Framework, designed to provide liquidity, in sterling or foreign currency, in the necessary scale, for a sufficient period of time, and secured against a wide range of collateral to allow the firm to make the transition to market-based fund-

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ing[13]. Sending a strong message in this way at the outset of the resolution will maximise the chances of stabilising the firm and if liability holders know their claims will be refinanced, reduce the risk of a further run.

This need for clarity is understood at international level. FSB has just published a consultation paper on bail-in execution addressing a number of issues I have described including valuation and exchange mechanics[14]. Not least there are important home-host dependencies that need to be addressed. After all, in a UK G-SIB resolution we will need to bail-in debt on both sides of the Atlantic, in the Depository Trust and Clearing Corporation (DTCC) as well as Clearstream and Euroclear. This includes working through with market regulators the securities law issues that will arise through a bail-in, ensuring that disclosure and listing requirements continue to be satisfied.

(c) Disclosure

The third and final area I want to address is disclosure. A recurrent theme of my remarks has been the importance of ex ante disclosure to making resolution credible and to realising the benefits of increased market discipline. We want debt investors to have the information they need to price risk and so support the proposals in the TLAC term sheet and Basel's Pillar 3 Framework that require banks to disclose the rank ordering of their liability structure at legal entity level.

As I have described, we want debtholders and other stakeholders to understand how we will use out resolution powers and so have published a document setting out our approach to resolution – otherwise known as the Purple Book[15]. The latest edition in October indicates how far we have come since we first published the Purple Book in 2014. But we have further to go.

It is our intention – which we indicated to the Treasury Select Committee in March – to publish summaries of the resolution plans for the major UK banks and our assessment of their resolvability. We will do this after the start of

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2019 when ring-fencing, the first level of TLAC requirements and operational continuity in resolution arrangements are in place.

As an institution we want to be open and accountable. As a resolution authority we need to be for it to work.

There is a famous Chinese proverb that notes a journey of a thousand miles begins with a single step. On the resolution journey there have been a lot of steps – in fact we could all be forgiven for feeling footsore – but the thousand-mile marker is coming into view. ■

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Endnotes

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http://assets.isda.org/media/f253b540-94/cd991d70-pdf/
8. See FSB 'Guiding Principles on the Temporary Funding Needed to Support the Orderly Resolution of a Global Systemically Important Bank ("G-SIB")' (2016)
http://www.fsb.org/wp-content/uploads/Guiding-principles-on-the-temporary-funding-needed-to-support-the-orderly-resolution-of-a-global-systemically-important-bank-"G-SIB".pdf and FSB ' Funding Strategy Elements of an Implementable Resolution Plan' (2017) http://www.fsb.org/wp-content/uploads/301117-2.pdf
9. The Bank of England published loss-absorbing capacity requirements for major UK banks in 2016 shortly after responding to the Treasury Committee's inquiry into capital. See
http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/treasury-committee/capital-and-resolution/written/69208.pdf
10 The Bank of England published a consultation paper on its approach to setting a minimum requirement for own funds and eligible liabilities (MREL) within groups on 2 October 2017. See https://www.bankofengland.co.uk/-/media/boe/files/financial-stability/resolution/internal-mrel-consultation-october-2017.pdf?la=en&hash=33594C3FB3C7F1D129033AFE4E3A2BF20A4F9AA8

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11. Our starting point for calibrating internal MREL for ring-fenced bank sub-groups would be 90%, with the possibility that this could be scaled down if there are sufficient readily deployable resources.

12. The Bank of England published a consultation paper on valuation capabilities to support resolvability on 17 August 2017. See https://www.bankofengland.co.uk/-/media/boe/files/financial-stability/resolution/boes-proposed-policy-on-valuation-capabilities-to-support-resolvability.pdf?la=en&hash=4044F91DF1DDE7A131EA3186F66F304380553306

13. See Box 2 – the Bank's approach to providing liquidity in resolution in https://www.bankofengland.co.uk/-/media/boe/files/financial-stability/resolution/boes-approach-to-resolution.pdf?la=en&hash=8213BE00D67C4CADB948D51FEBD164E136A70BE6

14. See FSB 'Principles on Bail-In Execution' (2017) http://www.fsb.org/wp-content/uploads/P301117-1.pdf

15. See the Bank of England's approach to resolution https://www.bankofengland.co.uk/-/media/boe/files/financial-stability/resolution/boes-approach-to-resolution.pdf?la=en&hash=8213BE00D67C4CADB948D51FEBD164E136A70BE6

This article is based on a speech given at the Risk Minds Conference, Amsterdam 4 December 2017

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World Commerce Review is pleased to announce that Hermes Aviation Consulting has been awarded the Best Aviation Consultancy 2018.

The selection panel took into account service innovation, on-going customer support and best practice criteria.

In addition, forward planning and CSR were seen as key areas for the award committee.

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Powell's Federal Reserve

With the appointment of Jerome Powell as the next Fed's chairman, President Trump break a tradition of bipartisan re-nomination and chooses someone who is not an economy by formation. Silvia Merler reviews economist's opinions on this choice and the challenges ahead

Kenneth Rogoff argues that with the appointment of Jerome Powell as the next Fed Chair, Donald Trump has made perhaps the most important single decision of his presidency. It is a sane and sober choice that heralds short-term continuity in Fed interest-rate policy, and perhaps a simpler and cleaner approach to regulatory policy. Powell will face some extraordinary challenges at the outset of his five-year term. By some measures, stock markets look even frothier today than they did in the 1920s and with today's extraordinarily low interest rates, investors seem ever more willing to assume greater risk in search of return.

At the same time, despite a strongly growing US and global economy, inflation remains low, which has made it difficult for the Fed to normalize policy interest rates so that it has room to cut them when the next recession hits, which it inevitably will. Rogoff identifies three areas that will be important for the Fed going forward. First, given that monetary policy is the first and best line of defence against a recession, an urgent task for the new chair is to develop a better approach. Second, bank regulation is also part of the Fed's mandate, and the costs of compliance with Dodd-Frank financial-reform legislation will be an important topic. Third, the threat to the Fed's independence posed by a president seemingly intent on challenging all institutional norms.

Joseph Stiglitz wonders whether Trump has captured the Fed. President Trump chose a non-economist a time when the Fed will face great challenges, as it reverts to more normal policies. Higher interest rates could give rise to market turmoil, as asset prices undergo a significant 'correction', and many are expecting a major downturn in the next five years. While the Fed's tool kit has been greatly expanded in the last decade, the Fed's low interest rates and huge balance sheet – and the possibly massive increase in debt, should Trump get his tax cuts – would challenge even the best-trained economist.

Most importantly, there has been a bipartisan (and global) effort to depoliticize monetary policy. Even in the absence of direct politicization, the Fed always faces a problem of 'cognitive capture' by Wall Street. That's what hap-

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pened when Alan Greenspan and Ben Bernanke were in charge and the consequences were the greatest crisis in three quarters of a century, mitigated only by massive government intervention. The Trump administration seems to have forgotten what happened less than a decade ago, or it would be difficult to explain its efforts to rescind the 2010 Dodd-Frank regulatory reforms, designed to prevent a recurrence. Fortunately, it appears that Powell recognizes the importance of well-designed financial regulations.

Scott Summer writes on the *Washington Post* that there are a few reasons to be concerned about this appointment. The past four Fed chairs have all been economists, with a deep understanding of monetary policy. Putting a lawyer in charge of the Fed is roughly analogous to naming an economist to be chief justice of the Supreme Court. First, there's much more to monetary policy than adjusting interest rates, which is why we should want a highly qualified

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Going forward, it will be interesting to see how Republicans in the House and Senate proceed

specialist to lead the central bank. Even many economists can get confused by the connection between interest rates and monetary policy, but the problem is even more severe among non-economists.

The last non-economist to serve as Fed chair was G William Miller. Interestingly, his problems were quite similar to what experienced during the financial crisis, but in the opposite direction. Miller thought that to fight the high inflation of the time it was enough to keep interest rates high, but rates were high because of inflation. Another concern is that Powell believes the Fed should focus not just on macroeconomic stability, but should also try to prevent financial market excesses. Many economists are sceptical of this view — for good reason. In 1929, the Fed tightened policy to try to stop a stock market bubble, tipping the economy into the Great Depression. In the long run, a stable macroeconomic environment is most conducive to a stable financial system. Financial excesses are better addressed through regulation, not the blunt instrument of monetary policy.

Tim Duy writes on *Bloomberg* that the next Fed Chair will contend with a slow-growth economy. The recent pace of growth exceeds the Fed's estimated longer-run pace of 1.8 percent. Given that the Fed believes the economy is operating at or somewhat beyond full employment, a sustained 3 percent pace would stretch capacity too far and generate excessive inflationary pressures. To counter these forces, the Fed anticipates continue tightening of policy, on the order of 100 basis points between now and the end of next year.

The next Fed chair will need to deftly handle the transition to a slower-growth economy. One big challenge will be gauging the pace of any slowdown. During the early stages of an expansion, the picture told by most economic data is usually one of stronger growth. As the expansion matures and slows, however, the data become more muddle and this shift could be misinterpreted as a recessionary signal. At the same time, the transition to slower growth could leave the economy more vulnerable to negative shocks and actual recession, making it all the more important that the Fed is able to switch from tightening to easing should the need arise.

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Moreover, the Fed may face a different challenge. It may be that companies operating near capacity take the plunge and expand their operations, boosting growth. Alternatively, Congress may manage to agree on a substantial tax cut, supporting consumer spending. Or, with the economy already operating above full employment, more inflationary pressures exist than currently evident. These circumstances might require a more aggressive pace of rate hikes. And then there is the possibility of an acceleration of productivity growth, which, in turn, would boost the Fed's estimate of the longer-run growth rate and could place policy makers in a tricky position because, in the near term, it might argue for a slow pace of rate increases, but over the longer run we would expect faster productivity growth to push the neutral rate higher.

Glenn Hubbard writes on the *FT* that the appointment of Powell is just the start. The Trump administration's ability to make a number of key Fed appointments brings an opportunity — and the responsibility — to ask far-reaching questions about the central bank's mission. Under Paul Volcker, the Fed grappled with how to tame destructive inflation. During the tenure of his successor, Alan Greenspan, it asked how fast the economy could grow without igniting inflation. The central bank led by Ben Bernanke explored how to stem the economic effects of financial instability.

Under Janet Yellen, the Fed still struggles with how to exit ultra-loose monetary policy as the economy expands at a rate consistent with many estimates of potential gross domestic product growth and full employment. The Federal Reserve board shaped by Trump and Powell now faces three big questions about what a 'normal' monetary policy looks like in today's economic environment, what the scope of the Fed's role in financial regulation should be, and how it can safeguard the independence of monetary policy in a hostile political climate.

Tho Bishop at Mises Wire argues that with the nomination of Powell the 'swamp wins again'. Donald Trump gets what he wanted, a 'low interest rate person' who also happens to be a 'Republican.' Bishop believes that Powell's

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nomination serves as a particularly useful illustration of how little has changed in Washington since the Bush Administration. The administration has signaled that its plans to form a policy consensus with its remaining Fed choices – as opposed to opening FOMC meetings into some truly spirited debate.

Going forward, it will be interesting to see how Republicans in the House and Senate proceed. For years now, House Financial Services Committee Chairman Jeb Hensarling has been pushing Fed reform which would have included requiring the Fed to adopt rule-based monetary policy. While this would have complemented the nomination of John Taylor or Kevin Warsh, Powell has made it clear that he opposes such limits being placed on the Fed. Going forward, we should expect to see the Fed continue slow normalization of its balance sheet.

Whether the Fed continues with its projected interest rate hike in December may itself depend on Congress. The legislature's knack for kicking the budgetary can down the road as led to yet another 'fiscal cliff' scenario at the end of the year. While we can be ensured that outcome will be more spending (and more debt), the bout of yet another round of arbitrary drama may give the Fed enough of an excuse to follow their lead and hold off until 2018. ■

Silvia Merler is Affiliate Fellow at Bruegel

This article was originally published on Bruegel

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World Commerce Review is pleased to announce that Les Secular of TPC Management (UK) Limited has been awarded the Lifetime Achievement 2018.

The selection panel took into account service innovation, on-going customer support and best practice criteria.

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Fintech and cross-border payments

Dong He analyses how financial regulation and central banking will need to respond to the acceleration of progress in fintech

The IMF has been carefully studying the trends in fintech, and my colleagues and I have gathered some initial thoughts about the way that the financial realm is likely to change. We've also been weighing how financial regulation and central banking will need to respond.

Those of you who would like to explore our reasoning in deeper detail may enjoy reading the two Staff Discussion Notes that we published in the last couple of years—entitled, *Virtual Currencies and Beyond: Initial Considerations* and *Fintech and Financial Services: Initial Considerations*.

However, to gauge the IMF's most recent analysis, a speech last month, at the Bank of England, by the IMF's Managing Director—Christine Lagarde—analyzed potential challenges posed by fintech innovations to central banking. With her uplifting tone, the Managing Director argued that we have the capacity to shape a technological and economic future that works for all. We have a responsibility to make it work. And it's up to us to adopt the right policies.

In this piece—focusing on implications of fintech for cross-border payments—I'll explore three broad areas[1]:

First, a sketch of the economic framework on how fintech applications will affect financial services and the market structure.

Second, the current landscape of cross-border payments, and the possible evolution of cross-border payment systems; and

Third, the role of central banks, themselves, and the possible reasons for them to issue their own digital currencies.

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The organization of financial services—a general framework

At the outset, let's consider an overall economic framework, which will help us assess the impact that fintech might have on the financial sector, and help us envision how regulation should respond.

Technology can affect the attributes—for instance, speed, security, and transparency—of new services, as well as the organization of service providers—termed market structure. Technological progress can promote the development and adoption of new services especially when targeted at unmet user needs—what we might call the 'gap'

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... technology has the promise to improve cross-border payments, including by offering better and cheaper services, and lowering the cost of compliance with AML/CFT regulation

or 'shortcomings' of services. The bigger the shortcoming, the greater the incentive for firms to improve services as permitted by technological advances, and the faster users' adoption of such services.

Technology can also affect the market structure of service providers. Will new technologies merely increase the profits and the efficiency of established players, or will they have deeper repercussions? Specifically, will they (i) reduce the need for financial intermediaries; (ii) push intermediaries to change their internal structures (possibly leading to partnerships and acquisitions); or (iii) induce the entry of new intermediaries while displacing older ones?

Technology may affect the factors shaping intermediaries. Technology can alter the market imperfections that are pervasive across the financial system, which underpin the need for trusted intermediaries. It can reduce asymmetric information (limited knowledge of one's counterparties to a transaction), facilitate the matching of parties to a transaction, and reduce transaction costs. Technology can also affect the incentives for intermediaries to be horizontally or vertically integrated (offer multiple services to end-users, as does a universal bank, or acquire upstream suppliers). Finally, technology can alter barriers to entry for new intermediaries to compete against incumbents.

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The current and future landscape of cross-border payments

Now let's apply this framework to cross-border payments. This is an area especially ripe for change, and could benefit from new technologies. There are significant shortcomings in today's system—stemming in part from technological limits, and in part from a highly concentrated market structure.

It may seem surprising, but cross-border payments are very different from domestic payments. The future could be different—as a simple analogy will suggest. Before the internet, sending so-called 'snail mail' domestically was fundamentally different from sending mail internationally. Pricing was significantly different; the infrastructure was

different; and the handling of cross-border mail required international agreements on payment sharing, packaging, tracking, handling and other processes.

In the age of the internet, however, there is no distinction between a message going to a domestic or foreign recipient: Both of them require, simply, a single click. A package is just a package—and we may soon recognize that a payment is just a payment, wherever it's going.

When making cross-border payments, various types of users—whether they're households, or small enterprises, or large corporations—all put special emphasis on low cost, security, convenience, predictability, and transparency—the assurance that intermediaries will preserve the confidentiality of their information.

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Shortcomings of cross-border payments

The shortcomings of cross-border payment services are substantial. Cross-border transfers are costly and cumbersome. Moreover, services are opaque; the price paid for cross-border payments is not transparent, nor known at the time of initiating the transaction in most cases. Finally, sending money across borders is slow. Payments can be routed through many banks before they reach their destination, causing delays and incurring fees. These shortcomings arise from technology, regulation, and market structure.

Market structure

Existing intermediaries benefit from high barriers to entry; each segment of the payments chain remains highly concentrated. In many cases, barriers stem from high fixed and sunk costs required to interface with users, comply with regulation, build trust in services, and operate large back-offices in the case of correspondent banks. In addition, size matters for these institutions to manage liquidity and counterparty risk. Finally, network externalities are

prevalent in messaging—and also in settlement, where netting bilateral positions lowers costs, and access to multiple counterparties facilitates transactions.

Against this background, how could fintech innovations reshape the cross-border payments landscape? To what extent might new technologies reduce service shortcomings, and alter market structure by favoring market platforms over intermediaries, reshaping business plans and firm boundaries, or encouraging entry? And how should regulation respond? While one can only speculate, to some degree, on potential outcomes, much will depend on the scenario for technology adoption.

Three scenarios could be considered, each centered on DLT-based applications. In increasing order of potential disruption, applications might target the areas of: (i) back-end processes; (ii) compliance; and (iii) means of payment.

Back-end processes

DLT could be applied to various processes in cross-border payments. For example, correspondent banks could participate in a shared permissioned DLT platform to automate the tracking of payments, and to optimize liquidity and risk management.

Gains would be most evident in efficiency, with little impact on market structure. In theory, lower fixed back-office costs would diminish economies of scale, spurring new entry—possibly by new types of service providers. However, many of the other barriers to entry to correspondent banking would remain.

End-users may still benefit. Payments settled through correspondent banks would become more transparent and traceable. However, the impact on speed and costs for the end-user is unclear. Correspondent banks may remain oligopolistic and thus unlikely to pass on cost savings.

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Compliance

DLT, when combined with other technologies, has the potential to significantly lower the cost of compliance. In particular, know-your-customer utilities and digital identity can facilitate information-sharing and help reduce the cost of compliance, including with respect to AML/CFT regulation and sanctions-related controls. However, the use of new technologies in the field of compliance may be limited by broader issues, including the extent to which regulation would allow financial institutions to outsource customer due diligence.

Market structure would not be left unscathed. Digital identities could allow end-users to switch more easily between service providers, thereby reducing the economies of scope extracted by intermediaries from proprietary information on customer profiles. Such a development would depend on the willingness of existing service providers to share such information, unless they are required to do so by regulation.

New compliance technologies could benefit end-users, but privacy and security issues may arise. Services would probably become cheaper and more inclusive. However, DLT-based applications for compliance could raise concerns over privacy and the security of personal information maintained on the ledger. In addition, the security of digital identities will be an important issue to address (for instance, if a digital identity were stolen and misused by a third party).

Means of payment

DLT can be used to underpin an entirely new means of payment. This is already happening with the emergence of virtual currencies. These means of payment are tokens that are exchanged electronically between market participants, much like cash, over a permissionless (open) or permissioned (fully private or consortium) DLT-based network. The use of these systems effectively shifts payments from accounts-based systems to token-based systems.

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Two applications of DLT as a means of payment are relevant for cross-border payments; the first involves a privately run hub-and-spoke payments network. Users exchange fiat money into a virtual currency (DLT-based tokens) held in digital wallets through ATM machines, point of sales terminals, online interfaces, or other means (the spokes). These tokens are then transferred, possibly across borders, over the virtual currency's secure network (the hub) to the payee's digital wallet. Finally, tokens are exchanged into foreign fiat money, as desired, through the same means as above (spokes again).

The implications for market structure are significant; pressure would grow to shorten the traditional payments chain. Messaging and settlement either in central bank money or through correspondent banks would no longer be needed. In the capturing and distributing segments, instead, virtual currency exchanges and wallet providers would compete for customers, potentially taking significant business away from other players.

From the end-user's perspective, the attributes of payment services offered by hub-and-spoke networks look attractive—despite three important caveats. Cross-border payments could become significantly faster, more traceable, and easier to use. Payments could also become cheaper and more secure.

But here are the three caveats:

> The first caveat is: the potentially erratic valuation of virtual currencies introduces risks and could limit the adoption of hub-and-spoke networks, at least for large-value payments. In their current form, virtual currencies are not likely to be adequate stores of value given the volatility in their exchange rates to fiat money.
>
> The second caveat is: a lack of trust in hub-and-spoke networks could erode their value. Just as trust is needed in the authenticity of a paper bill in traditional token-based payment systems, trust in the hub-and-spoke solution

is also essential. That is truly vital, for three reasons. One: counterparties need to have legal certainty regarding the transfer of ownership of the virtual currency. Two: counterparties need to have trust in the stability and security of the technology underlying the virtual currency. This also implies trust in the issuance rule (or backing) for the virtual currency. Three: users need to trust the security of the virtual currency exchanges and wallet providers needed to enter and manage hub-and-spoke transactions. Users may be concerned with the security of their data, and the ability of others to access their wallets. Regulators may then need to consider regulatory approaches to virtual currency exchanges and wallet providers that would sufficiently protect consumers, and address AML/CFT concerns.

The third caveat is: the lack of interoperability among networks could keep prices of hub-and-spoke payments high. If networks are not interoperable, network externalities could be strong, and providers could take advantage of market power to charge high fees. Regulation aimed at addressing anti-competitive concerns could help alleviate this outcome.

Central bank digital currencies

Let me now turn to a second possible avenue for DLT application to be used as a means of payment: Central banks could offer their own digital currencies.

A Central Bank Digital Currency—let's call it, in shorthand, a CBDC—would not be a parallel currency. It would merely be a digital form of central bank money that can be exchanged in a decentralized manner. In other words, it can be transferred or exchanged peer-to-peer, directly from payer to payee without the need for an intermediary.

Such a CBDC would be exchanged at par with the central bank's other liabilities (its cash and reserves)—either through banks or directly at the central bank.

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Why issue a Central Bank Digital Currency?

The balance of benefits and costs surely needs further study—but central banks might consider introducing CBDCs for various reasons. Efficiency considerations provide a first reason. Efficiency arguments for CBDCs are based on countering the monopoly power that strong network externalities might confer on one or a few private operators in the payments system or private virtual currencies, or on the inability to ensure the full stability and safety of privately coded and maintained currencies. In addition, a CBDC could overcome the coordination failure involved in any inability to agree on a single new technological standard for electronic payments. In terms of stability, a DLT-based CBDC could also be more secure and resilient than current settlement systems which are exposed to single point of failure risk.

From a retail point of view, gradually replacing notes and coins with a CBDC entails savings on the costs of maintaining and replacing notes and coins for the state. It may also significantly reduce transaction costs for individuals and small enterprises that have little or costly access to banking services in some countries or regions; and it may facilitate financial inclusion. In addition: By facilitating small-value payments, it could boost the adoption and efficiency of the new, decentralized, service economy.

Monetary-policy considerations provide a second reason. The introduction and potential proliferation of private virtual currencies might threaten to erode the demand for central-bank money and the transmission mechanism of monetary policy. A CBDC may forestall such private virtual currencies or relegate them to a secondary role in the payments system.

Another monetary policy consideration is that replacing cash, except possibly for costly-to-store small denomination notes, with a CBDC could allow the central bank to lower interest rates well into negative territory when nec-

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essary to fulfill its mandate. However, this potential benefit has to be balanced by the important consideration that central banks will need to respect social preferences for the form of money.

What kind of CBDC?

In making the decision about whether to issue a CBDC, central banks should also consider: Precisely what type of digital currency should they issue?

In terms of basic design, the CBDC would presumably respect the following requirements: it would be issued in the same unit of account as fiat money; it would be a liability of the central bank and would be exchanged at par with its other non-equity liabilities—mainly cash and commercial bank reserves.

Other characteristics of CBDCs, however, would differentiate them from commercial-bank reserves in one or several ways. Importantly, whether interest is paid on a CBDC or not has important and differing implications for the transmission and effectiveness of monetary policy, as well as for financial stability. A non-interest-bearing CBDC would be a better substitute for cash than for bank deposits, an interest-bearing one for bank deposits. The latter may affect the transmission mechanism and financial stability more than the former.

The central bank would have to make decisions relative to distribution. The basic questions are how and to whom it would distribute its digital currency. The last issue concerns the choice of technology used to support the CBDC. The form and broad design of the CBDC eco-system will eventually reflect the development and maturing of fintech technologies.

These technological and organizational choices raise several questions, such as: can the chosen technology be made secure, and can speed be maintained? What does it imply as to who bears the costs of operating, maintaining,

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and developing the digital currency? Should it be the central bank, or could private sector participation be possible, so that the central bank can remain a catalyst as opposed to a full-scale operator?

These are among the many questions that the introduction of CBDCs raise about the nature and regulation of the financial system, the conduct of monetary policy, and the role of the central and commercial banks in the economy. Many of these questions are political and complex. This would seem to warrant a gradual approach to introducing CBDCs, if at all, building on experience, and on evolving and maturing financial technologies.

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Conclusion

As fintech innovations gather pace, boundaries are blurring between intermediaries, markets, and new service providers. Barriers to entry are changing, being lowered in some cases but increased in others, especially if the emergence of large closed networks reduces opportunities for competition; but trust remains essential. And technology has the promise to improve cross-border payments, including by offering better and cheaper services, and lowering the cost of compliance with AML/CFT regulation.

Amid a landscape of change, one thing is certain. As our Managing Director, Madame Lagarde, said in her recent Bank of England speech: *"To make things smoother – at least a bit – we need dialogue… Between policymakers, investors and financial-services firms – and between countries."*

We at the IMF are ready to work constructively on the task of reshaping the cross-border payments landscape – aiming to ensure that down-side risks are minimized, and that the economy can capture the full value of fintech's promise. ■

Dong He is Deputy Director, Monetary and Capital Markets Department, at the IMF

This article is based on a speech given at the IMF Ripple – Central Bank Summit, Carnegie Hall, New York, November 1, 2017

Endnotes

1. This speech is based on "Fintech and Financial Services: Initial Considerations", IMF Staff Discuss Notes No.17/05.

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Providing A-Z support

In a Q&A with World Commerce Review David Briggs-Wilson of Hermes Aviation Consulting discusses how decades of aviation experience results in a smooth path to reaching your travel aims

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Biography

David Briggs-Wilson was born and brought up in Yorkshire, and after studying mechanical engineering became an engineering officer in the merchant navy. David joined the Royal Air Force and was commissioned as an officer before embarking on his flying training after which he flew on various operational squadrons. Upon retiring from the RAF, David entered a different world of aviation, moving from fast jet fighters to general aviation. David has held various senior positions and has turned his attention to Hermes Aviation Consulting, which was formed to lead the way bringing everyone together for the common good and for the good of the industry.

How did HAC come about?

After spending more than 55 years in aviation and almost 40 years in general aviation of which over ten being hands-on running a multi-aircraft management and operating company, I have seen many of the faces, good, bad and indifferent of the aviation industry.

As I was presented the opportunity to start to take a back seat and a well-earned retirement, the prospect of which filled me with dread, I decided that a life of pushing supermarket trolleys through the aisles was not the retirement life I wanted or needed so the seeds of Hermes Aviation Consulting were sown.

The seeds of Hermes Aviation Consulting became obvious prior to its inception from what was a seemingly innocuous remark made by one man during an exploratory business meeting in North London, where it was said *"The pity of it all is that no one really knows about us".*

It struck a chord with me as he was absolutely spot on target. Here we were discussing the synergies of two different companies, one aviation the other automobile, but each with matching products and clientele, yet no one really knew about them outside their clientele and tight profession. The seeds of Hermes Aviation Consulting were almost ready to be sown.

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What is the role of Hermes Aviation Consulting?

The role of Hermes Aviation Consulting is simple. To provide an A-Z service by providing the link between all the many sectors that are business aviation to assist at every stage of the process, from initial acquisition of an aircraft with all that goes with it, all the way through to the eventual disposition of a business aircraft.

HAC is there to provide support to its clients, whether they be aircraft brokers, buyers, sellers, lawyers, service providers, cabinet and even candlestick makers.

Acquiring a business aircraft is not as simple as walking into a car showroom and choosing the colour and model then waiting for delivery. There are so many steps to be taken and in the right order, and not every player in the sequence knows what needs to come next. HAC is there to provide a seamless link through the whole process or even part of the process. HAC is simply linking in the services that are necessary to achieve the goal of the owner, whether a corporate entity or an individual. HAC performs, if you wish, a form of concierge service.

What is HAC's background in this?

The background for Hermes Aviation Consulting is the many years of experience Hermes Aviation has had as an operator and management company coupled with the individuals who are the core of Hermes-wide professional business aviation experience. We have all seen from our individual experiences where things can and do go wrong and where, had there been a Hermes Aviation Consulting in those times, we would have used its services to the full, confident in a successful conclusion, from logistics to catering, to soft furnishings to technical assistance in faraway places. Experience is a great background to have, it is not infallible, but it goes a very long way to making a silk purse out of a sow's ear.

We use our knowledge, our experience and our trusted contacts to create a network that is ever expanding that is the very core of Hermes Aviation Consulting.

How Can Hermes Aviation Consulting assist a client?

I was somewhat taken aback a couple of years ago when discussing the potential sale of our own aircraft with a sales executive of a well-known and reputable aircraft brokerage firm. In our general conversation he was bemoaning the fact that one of the aircraft they were selling required a PPI (Pre-Purchase Inspection), a normal feature of the sales process but, as he told me, he was concerned as no one knew where such an inspection could be carried out.

He was genuinely surprised when I told him that he was sitting in the very premises of the only manufacturer approved and authorised service facility in Europe; he genuinely was totally unaware of the fact but ready to advise

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his client to spend tens of thousands of dollars flying to another facility to have the inspection carried out when it could be done on his doorstep.

I have realised over the years that aircraft sales brokers have an important role to play in the aircraft acquisition process, but so few of them take it seriously, being more concerned with closing a sale as quickly as possible and then moving onto the next as soon as their commission payments hits their account.

Where is the follow-on or even the follow-up for the client? Where, for example, he should look for approved maintenance, what legal processes are involved including good (aviation) lawyers who are both efficient and charge reasonable fees.

These are but two simple examples of the myriad of processes and support the client needs to be guided through in a smooth, seamless flowing manner. This is where Hermes Aviation Consulting is the key as we can and do provide not only the information but make the arrangements to introduce the client(s)/customer(s) to the appropriate service provider, one whom we know and trust who adhere to our core principles.

Hermes Aviation Consulting not only provides services to aircraft owners, buyers and sellers but also arranges and works with all parties within HAC's network. So many service providers can benefit from each other with sales leads, product support, product diversity networking.

Hermes Aviation Consulting provides an open networking for both aviation professionals, companies, individuals, sellers, buyer and users in fact all stakeholders in business aviation bringing everything together to meet the needs and aspirations of aircraft owners anywhere in the world.

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A simple example of the networking Hermes Aviation Consulting provides is the automobile interior designer providing a useful lead to the aircraft interior designer and refurbisher, as they often have a common customer base. What better way than a client sitting in the customer lounge reflecting on the new interior for his Bentley Continental GT, seeing the photographs of interior designs and furnishings offered by the aircraft interior refurbishers and vice versa? Another spin off to this is both have a common speciality and can work professionally with each other, often providing increased business opportunities.

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What would you describe as being the typical concerns of clients?

Simple: the primary concerns are *"What do I need to do now", "What are my options", "Who should I contact".* The most common concern, particularly with a first-time buyer for example, is what type of aircraft to purchase and the acquisition costs.

Hermes Aviation Consulting in this case would discuss in detail with the client his or her requirements and his or her usage of the aircraft, and suggest the types and models of aircraft to best suit both budget and requirements. This selection is perhaps the most important of all and to be able to offer a choice of different types and models for the client to select and view.

Then there is the difficult question of finance; how to select the best option for the client from different lenders and assist the client in the process. Organising the viewing, the making of an offer, the legal niceties of an Aircraft Purchase Agreement and, if a pre-owned aircraft, whether it can be re-registered successfully to another aircraft register, which is not always straight forward.

Concerns as to which aircraft registry is best; again, not always evident. Concerns as to legal advice during the sales process and sale closing as bad advice can be very, very costly and difficult to put right.

What options does the client need? He does not need a long list but a carefully chosen detailed short list of targeted options, each one carefully noted explained and identified. Hermes Aviation Consulting can and does provide not only answers to the clients' concerns but also provides the solutions together with the detail, whatever the concern.

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Can you describe how Hermes has helped to solve its clients' problems?

Hermes Aviation Consulting is constantly evolving and providing solutions to problems is not always a necessity, except in extremis, as we try our best to avoid problems arising; it is our role to anticipate possible problems and issues, then to provide suggestions for small changes to be made to avoid the possible pitfall. We try to have the foresight to avoid having to reflect on hindsight; it is better to have progressive management than to have crisis management.

As an example of helping to solve a client's problem, I can look at the following example. A client of ours, an importer and sole concessionaire of prestigious champagne and fine wines, wished to look at expanding into aviation, but how? We know from experience that business aircraft owners enjoy good wines and champagnes both on the ground and in the air. It is not a 'bling' thing but a matter of taste and compliments the whole, the aircraft, the owner, the way of doing business.

First, we contacted the specialist catering companies who provide the food and beverages to and for the business aircraft, together with the FBOs where the aircraft operate from. From this we marketed both HAC and our client providing an opportunity for caterer, HAC, FBO and our client for an evening of wine tasting; this then spun off other ancillary but equally important additions of other upmarket specialist beverage suppliers to participate.

In addition, a bespoke interior soft furnishing designer/supplier to yachts and aircraft has joined in to participate in the evening. Not only have we provided a solution to our original client's problem of entering into the aviation market but also provided a showcase evening for others each one complimentary to the other; it's a win, win benefit solution for all participants. What better problem solving is this?

How do you see the industry developing?

Business aviation historically runs seemingly in cycles of 7 years. We have had a flat line in business aviation for a number of years now but there are encouraging signs of recovery. New aircraft sales are showing improving signs and the pre-owned market is fairly active. It is now time for the upturn in fortunes for business aviation.

Too often business aviation is maligned in the press; it's the popular thing to do and many journalists in the popular press have scant idea or notions of business aviation and what it provides to the economy of the world in terms of wealth, investment, employment and the ancillary positive effects.

Imagine a town with a large factory employing 70% of the town's adult population. Not only does the factory provide direct employment but also provides full employment to the trades people, shopkeepers, tinsmiths and candlestick makers in the town where the factory employees spend their money. The town council is rich from the con-

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tributions paid to it by the factory and the employees who work there; the town is vibrant, it functions, there is life and soul to the place. Now imagine closing the factory down and the economic catastrophe that would bring to the town and to the country as a whole.

Business aviation is that factory in my example, it is not a toy for the rich and famous but a tool. Business leaders are by their very nature important and busy people, as are their senior managers and directors. Their use of a company business aircraft is efficient, effective and an essential tool for the benefit of the company as a whole.

More and more companies are realising that the use of business aircraft is an essential tool in their business plans. Today taking a business trip to an international destination is a daunting affair. Commercial flights may require using an airport a long distance away, the flight times may not be convenient and having to arrive at least 2 hours before departure to clear check-in, immigration and security along with thousands of others is daunting. The flight even in business class does not guarantee that you will arrive fresh and in good fettle for that all-important meeting and the colleagues you need with you are also in the same state as you after the flight.

Yet taking a business aircraft can mean using the nearest airport to your business, with a departure time to suit you not the airline's schedule, with a private check-in, immigration and security on demand means the 2 hours in advance can be as little as 15 minutes. On the flight you are secure, your colleagues and you can spend the whole flight discussing strategy, finance etc and have constant access via the aircraft's WiFi and the internet to collaborators back home.

Met at your destination by dedicated transport, whisked through the FBO terminal customs and immigration in minutes, not hours and on to that important meeting fresh and ready for business. No longer having to look at watches to see when you can wind up the meeting in order to make the commercial airline flight back home as

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your business aircraft is as flexible as you and on demand. It is the tool of all tools; this is how I see the industry developing, taking itself out of the image of bling to being that of being the most efficient and effective business tool ever.

What message do you have to those considering using an aviation consultant?

Simply, look carefully, ask questions, feel comfortable, make sure the consultant has experience in the industry and is independent and has a good reputation.

A good consultant can save you tens of thousands, provide you with suggestions and options for your consideration. He or she should be your guide and hold your hand through whatever process or processes you have. A good consultant will take care of the hassle smoothing the path to ensure you reach your stated aim and goal.

Why wait? Contact Hermes Aviation Consulting. ■

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NBAA-supported events promote advocacy for global business aviation industry

Business aviation continues to enable global commerce and economic growth, thanks to the commitment of the National Business Aviation Association

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Despite its primary advocacy focus on behalf of business aviation operators across North America, the National Business Aviation Association (NBAA) also collaborates regularly with international industry stakeholders and associations on matters affecting our global industry at both the national and regional levels.

One of the most effective methods for doing so is through NBAA's support for influential annual industry events that serve to underscore the importance of business aviation to local leaders in business and government, as it positively impacts communities by aiding companies in efficiently performing day-to-day operations, generating new jobs and spurring economic activity and local investment.

For example, the Asian Business Aviation Conference & Exhibition (ABACE) is the largest event dedicated to showcasing business aviation's impact throughout China and the Asia-Pacific region. Thousands of top business aviation leaders, entrepreneurs, and other purchase decision-makers will come to Shanghai Hongqiao International Airport to experience the size and scope of this emerging industry.

Coming to Shanghai, China on April 17-19, 2018 and co-hosted by NBAA, the Asian Business Aviation Association (AsBAA) and the Shanghai Airport Authority (SAA), ABACE2018 is also the perfect venue for investors considering aviation as a business opportunity; companies thinking of using an aircraft for business; and flight departments who have long used aircraft as a valuable business tool.

The following month will bring the European Business Aviation Convention & Exhibition (EBACE2018) to Geneva's Palexpo Convention Center from May 29-31. Jointly hosted each year by NBAA and the European Business Aviation Association (EBAA), the leading association for business aviation in Europe, EBACE is Europe's largest event showcasing business aviation products and services.

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EBACE2018 will serve as a valuable opportunity to learn about the many roles of business aviation across Europe, as well as the latest products and services available throughout the industry. New business aircraft manufacturers, avionics firms, handling organizations, fractional providers, and charter/lease companies and aircraft resellers will display their latest products and services to delegates across three Exhibit Halls, and get critical business done for the year ahead.

Of course, a key aspect of EBACE is its ability to bring together influential leaders, government officials, and key industry stakeholders to discuss regulations and policies of importance to not only European business aviation operators, but to the industry across the globe. This important role will continue in 2018.

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Across the globe, business aviation offers the unparalleled capability to link cities with smaller regional markets, including areas that may offer limited infrastructure for ground transportation

NBAA-BACE hosts international business aviation community

This important advocacy role was also highlighted at NBAA's own recently-concluded 2017 Business Aviation Convention & Exhibition (NBAA-BACE) that featured an impressive demonstration of the industry's size and significance in the US, and around the world. Held October 10-12, 2017 in Las Vegas, NV, NBAA-BACE featured attendees representing all 50 US states, and dozens of countries.

NBAA-BACE 2017 featured about 1,100 exhibitors, including more than 100 new exhibitors. The show also remained the preeminent venue for manufacturers to unveil new models; for example, this year, the Bombardier Global 7000, Gulfstream G600 and Pilatus PC-24 made their debut at the show.

All three days of the show were packed with well-attended education sessions, including half-day programs at the NBAA National Safety Forum and Single-Pilot Safety Standdown. Discussions featured top safety experts and representatives from the Federal Aviation Administration (FAA) and National Transportation Safety Board (NTSB).

On the final day of the show, more than 1,000 students came to NBAA-BACE, many to participate in Careers in Business Aviation Day, hearing from Dreams Soar Founder and around-the-world pilot Shaesta Waiz – plus a chance to interact with industry leaders and potential employers at the College/University Roundtable event.

NBAA-BACE show-goers also had many opportunities at the convention to celebrate the association's milestone 70th anniversary, including a large, three-dimensional, moving *"NBAA70"* wall filled with signatures from those wanting to be a part of the occasion. The 70th anniversary was also celebrated at the static display of aircraft at HND, with the inclusion of a *"70th Anniversary Row,"* where a 1946 Douglas DC-3 business aircraft joined other vintage aircraft from business aviation's early days.

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Perhaps most importantly, the event also demonstrated how our industry is stronger when we work together. NBAA is looking forward to 2018, when NBAA-BACE returns to Orlando, FL on October 16-18.

Regional forums bring industry's message to smaller US communities

For those unable to make the trek to NBAA's annual convention, NBAA also hosts three Regional Forums every year, in different locations throughout the United States, providing local opportunities for aviation professionals to network and expand their knowledge about the issues affecting business aviation.

These Regional Forums take place at some of the most accessible airports and FBOs across the US, bringing many of the features and benefits of NBAA's larger events – including educational sessions, influential speakers, and aircraft static displays – to venues closer to home. In 2018, Regional Forums will be held in West Palm Beach, FL (January 24); White Plains, NY (June 21); and San Jose, CA (September 6).

NBAA Regional Forums are the best opportunities for business aviation professionals to attend education sessions, network with other local professionals and view static displays of aircraft and vendor exhibits, all in one day. Regional Forums also provide a venue for companies exploring the use of business aviation and local elected officials to learn more about our industry.

These gatherings also serve to underscore the importance of business aviation to local leaders in business and government, as it positively impacts communities by aiding companies in efficiently performing day-to-day operations, generating new jobs and spurring economic activity and local investment. Every NBAA Regional Forum includes participation by important local, state, and even national leaders, providing a vital opportunity for business aviation stakeholders to engage with these representatives on critical matters for the industry.

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Across the globe, business aviation offers the unparalleled capability to link cities with smaller regional markets, including areas that may offer limited infrastructure for ground transportation. This directly serves to increase economic activity and investment in those areas, boosting regional economies while also promoting global commerce and economic growth.

NBAA remains committed to protecting and promoting the global development of business aviation. On behalf of the more than 11,000 members of NBAA, I invite the *World Commerce Review* readership to consider attending one or more of these impressive events in 2018, where you may experience the strength and scope of our industry first-hand. ■

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ABOUT THE AUTHOR

Ed Bolen is President and CEO of the National Business Aviation Association (NBAA), promoting the aviation interests of organizations utilizing general aviation aircraft for business purposes in the United States and worldwide.

"Aviation Malta - Open for Business"

The Malta Business Aviation Association (MBAA) aims to promote excellence and professionalism amongst our Members to enable them to deliver best-in-class safety and operational efficiency, whilst representing their interests at all levels in Malta and consequently Europe. The MBAA will strive to ensure recognition of business aviation as a vital part of the aviation infrastructure and the Maltese economy.

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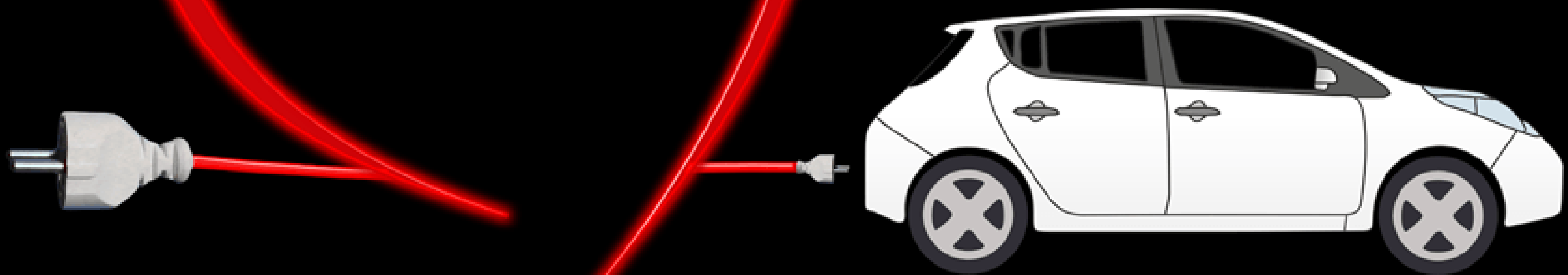
The coming EVolution of road transport



Aaron Cosbey examines the full impacts of a low-carbon future on the transport sector, where governments and carmakers are hastening the end of the internal combustion engine

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The global transition to a low-carbon future is going to be fundamental, wide-reaching, and anything but smooth. One of the best illustrations is the transport sector, where governments and carmakers are hastening the end of the internal combustion engine (ICE) age.

Electric vehicles (EVs) will account for more than half of global vehicle sales by 2040, according to estimates that are probably too conservative. The transition will be a wave of creative destruction, crippling long-entrenched markets and fostering new ones in their place. The full impacts will challenge economic and social systems to adapt at uncomfortable speeds, and result in significant shifts in geopolitical power and relations. While the switch to electric vehicles is being driven primarily by environmental concerns, it could set back the achievement of broader sustainable development goals if the transition is not well managed.

The transition to electric vehicles (EVs) shifted into high gear in 2017 with a series of major announcements. Norway will ban conventional automobiles by 2025, with other countries following close on: India in 2030; Scotland in 2032; Netherlands in 2035; France and the UK in 2040. The private sector, sensing an opportunity for first-mover advantage, is not far behind; Volvo and Jaguar/Land Rover will sell no conventional automobiles by 2019 and 2020, respectively, and in 2017 Daimler, Volkswagen and BMW all announced accelerated plans for new EV models. Two influential jurisdictions are widely expected to announce phase-out targets soon: California, valued as a regulatory leader in the US; and China, the world's biggest consumer of new cars, with a 30% share.

Those announcements will hasten a trend that already has momentum. The global EV stock grew by 62% in 2016, albeit from a small base[1]. Bloomberg New Energy Finance predicts EVs will be at cost parity with conventional automobiles in the mid- to late-2020s, and that globally by 2040 54% of new car sales and 34% of cars on the road will be electric[2]. ING Bank predicts that by 2035 all new cars sold in Europe will be electric[3].

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The question is not whether EVs will replace internal combustion engines, but rather when. And the answer is: sooner than everybody thinks. All the analysts focusing on that question have been scrambling to revise their predictions, as costs of production for batteries– currently around one third of the cost of an EV –dropped more quickly than expected, plunging from $1,000 per kWh in 2010 to $273 in 2016[4]. In 2017, The International Energy Agency more than doubled its previous year forecasts for EV fleet size by 2030, to 58 million; Exxon boosted its 2040 estimate from 65 million to 100 million; and BP increased its 2035 estimate by 40%. OPEC's 2040 estimate jumped 578%, from 46 million to 266 million[5]. This dynamic recalls the International Energy Agency's forecasts of renewable energy uptake over the last decade, which have consistently had to be revised upward, and have just as consistently still been far too conservative[6].

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The EV transition is just one of several that will change the global economic and social fabric in the coming decades, as countries, firms and citizens seek to orient toward more sustainable pathways

Underlying the accelerated pace of change is a mix of drivers all working in the same direction. Governments are enacting new policies to fulfill their climate change commitments under the Paris Agreement, and to pursue green industrial policy goals that promise both environmental improvement and domestic economic prosperity in the new green transport sectors. There has been a slow but accelerating consolidation of the relevant industry standards, such as those used for charging systems, leading to cost reductions and efficiency. Growing investment in high-speed public charging infrastructure has meant progress on the chicken-and-egg problem: nobody will buy electric cars if there aren't charging stations, but nobody will build charging stations unless there are users. Cost of production for EVs is falling as scale of production increases and learning-by-doing effects kick in.

The new EVs are also beating conventional engines in ways that are important to consumers, including acceleration and power. As well, consumer acceptance of EVs has begun to increase exponentially as they become less novel and more commonplace. Many of these trends are non-linear, subject to quick take-off once tipping points are reached. The biggest game changer may be China's weighing in with the kind of full-on industrial policy support that has made it an overnight world leader in solar and wind power technologies[7].

The EV transition is about more than what kind of cars are on the road; the impacts will be felt across a range of areas, many obvious but some perhaps surprising. Environmental impacts are to be expected, since most government policies in this area are climate- and pollution-related. If we take the Bloomberg prediction that 34% of cars on the road in 2040 will be EVs, this means 8 million barrels of oil per day displaced[8], or roughly 1,256 Mt of CO_2 per annum[9] - just under the total GHG emissions of Japan in 2015[10].

But the transition will also have important non-environmental impacts. The most obvious is loss of markets for oil exporters. Road transport consumes 43% of all oil produced[11], so loss of over half of that market in the next 20 years would not be a trifling matter, especially for the many states over-dependent on oil exports. At least 16 countries

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relied on fuel for over 60% of their merchandise exports in 2015, including countries like Iraq, Angola, Algeria, Brunei Darussalam and Venezuela, where the figure exceeds 90%[12]. This is not just an economic challenge; it's a geopolitical and social challenge as well, with influential states such as Russia and Saudi Arabia facing significant loss of markets for a major export revenue earner. The social and political chaos in Venezuela over the last few years are in some part a function of persistent low global prices for oil.

The shift to electric vehicles also implies a shift in categories of government revenue and spending. In many non-oil producing countries, transport fuel levies are a significant portion of revenues. The EU collected an estimated €167 billion in revenues from transport fuel excise taxes in 2013[13]. These countries will need to shift tax rates and models to accommodate the loss of revenues as fuel sales drop. In many oil producing countries, the impacts will be mixed: loss of royalties from oil production, balanced off against a lower fiscal burden, given that many such countries heavily subsidize domestic consumption of fossil fuels. Lower demand, leading to world oil prices, will decrease the need for such subsidies (though in many cases the subsidy is not an actual outlay, but is rather losses of income from selling domestically at lower prices than could be had on the world market).

Industries that supply the automobile manufacturing sector will also be shaken up. Miners and smelters of lead, for example, will suffer from a major drop in the demand for lead-acid batteries, to which almost three quarters of their product goes[14]. Markets for new products will boom. To satisfy the Bloomberg predictions for EV fleet by 2030, production of lithium and cobalt will need to increase by 300% and 127% respectively (assuming current battery technologies). This again points to geopolitical shifts and risks, depending on the distribution of resource endowments. Around half of the world's current cobalt production, for example, is in the Democratic Republic of Congo.

While EVs demand more material inputs, primarily because of their batteries, they are not as labour-intensive as conventional automobiles because their engines are much simpler are more easily amenable to automation[15]. This

will reduce employment in a sector that has traditionally employed large numbers of middle class workers. In the United States, just under a million workers were involved in vehicle and parts manufacturing in 2017[16].

The transition will also affect the electricity sector. A primary impact will be an increase in demand for electricity, but the challenge may be more about when demand occurs than overall level of demand. One scenario for the UK foresees an increase in peak demand of 30% by 2050 due to EV demand[17]. Building new capacity to meet those peak levels would be prohibitively costly; they will have to be met by smart grids and systems of demand-side management that go well beyond what now exists. One upside of that kind of systemic reform would be the possibility of using a fleet of electric vehicles as a huge distributed battery to smooth out electricity demand peaks.

Another would be the ability to better handle intermittent sources of power such as solar and wind. There is also an issue with the so-called last mile of distribution, given that many local transformers will not be able to handle the spikes in demand created by EVs returning from their daily commute and plugging in to charge at the same time. This problem is serious enough that, even at today's low rates of penetration, California and Texas are considering requiring that utilities be notified when customers in their service areas purchase EVs[18].

The ongoing EV transition will be disruptive, no matter what anyone does. It will destroy long-entrenched markets, create new ones, will challenge economic and social systems to adapt at uncomfortable speeds, and will be accompanied by significant shifts in geopolitical power and relations. While it is being driven primarily by environmental concerns, if not managed well it will set back the achievement of broader sustainable development goals such as poverty reduction, decent work and economic growth, and reduced inequalities.

All that said, it is a more or less predictable transition, and timely action by governments and their agencies will make a huge difference to the extent of the coming disruption. Grid operators need to plan now for the needed

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investments, schools and education ministries need to plan now for the new skill sets needed as automobile manufacturing fundamentally changes, planning ministries need to redouble their efforts to diversify national economies over-dependent on the status quo.

All of these processes are already ongoing in most countries, of course; economic diversification in commodity-dependent economies, for example, has been preoccupying economists for decades (with decidedly mixed success – many of the countries most in need are those with the least capacity to plan and execute the needed changes). But the coming changes make all those efforts more urgent.

Beyond crisis management, governments should be striving to exploit the opportunities that the transition presents. The market for EVs, and associated materials and technologies such as batteries, represents a huge new territory, with commensurate payoffs for those firms and economies able to anticipate, innovate and invest appropriately.

China's strategic drive to develop national excellent in renewable energy offers a vivid illustration of the possibilities[19]. From a global market share in solar PV production of around 1% in 2001, China has grown to become the world's single biggest producer, with 40% of global polysilicon manufacturing capacity – twice the next largest country's share[20]. Of course, few countries can match China's potential for state support, but the point is that support matters; there are national payoffs to judicious support for finance, research, demonstration, commercialization, and market creation for new technologies.

This is the stuff of green industrial policy – the drive by the state to help push national economies in the direction of the coming green markets[21]. While industrial policy has a history with more failures than successes, the modern discourse in this area focuses less on whether it should be done and more on how to do it right, in light of the lessons

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of the past. Among other things, it requires an executing bureaucracy that is close enough to the business community and capable enough to understand its needs, but independent enough to be insulated from the influence of rent-seekers.

The EV transition is just one of several that will change the global economic and social fabric in the coming decades, as countries, firms and citizens seek to orient toward more sustainable pathways. The lesson to be drawn from the assessment in this article is that some of those changes will be fundamentally disruptive, with potential to set back sustainable development more broadly, but that they will be less so if they are anticipated, managed, and even exploited for their positive potential. This is a difficult path for governments, and a risky one for firms, but it's a path down which we will go like it or not, so it were best to go intentionally and strategically. ■

Aaron Cosbey is a Senior Associate at the International Institute for Sustainable Development

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World Commerce Review is pleased to announce that Knox House Trust Limited has been awarded the Best Aircraft and Yacht Corporate Services Provider 2018.

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Emergence of the coal alliance

Vijay Jayaraj writes about the concerns of the developing world about the carbon imperialism imposed on them by the Paris Agreement

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A year ago, no one could have predicted the emergence of a coal alliance. Not when the leader of the most powerful country—President Obama—was crusading against coal. One year later, the coal alliance has arrived!

During his presidential run, Donald Trump pledged that the US would pull out of the Paris Agreement—the poster child agreement of the climate alarmists who advocate for the shutdown of coal plants. Trump also indicated that he would bring major reforms in national policies concerning controversial environmental issues such as pollution and climate change.

In 2017, he fulfilled both his promises, declaring the US pullout from the Paris Agreement and bringing major changes in the US Environmental Protection Agency—the country's authority on environmental policy. This signaled the end of the anti-coal regime in the US.

At the recent climate talks in Bonn, the US government explained how advanced and pollution-free coal-burning technologies available today make coal a clean and reliable source of energy.

Developing countries, most of which face the uphill task of meeting their domestic energy demands, capitalized on this move and began to be vocal about their reservations concerning the Paris Agreement. Their revolt was explicit, and they began calling out the hypocrisy of developed countries during the international climate conferences.

Philippines was the first country to pull the trigger when it withdrew from the Paris Agreement in 2016, setting a precedent for other developing nations who face the increasing pressure from the anti-coal establishment.

India has termed the coercive policies of Paris as 'Carbon Imperialism'. With a population of 1.3 billion people, India cannot afford to reduce the consumption of coal—the country's most affordable, abundant, and reliable source of energy.

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In a public gathering, Arvind Subramanian, the country's chief economic adviser, said, *"India needs coal in the short to medium term... India cannot allow the narrative of carbon imperialism to come in the way of realistic, rational planning for the country's energy future."*

He added that formation of an international coal alliance would negate the carbon imperialism imposed on developing countries. *"Coal will remain and should remain. The time is ripe for creating a green and clean coal coalition mirroring the (international) solar alliance. That, rather than unconscionable calls to phase out India's cheapest source of energy."*

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The global coal coalition may not exist on paper, but it is an undeniable reality. It is only a matter of time before we see a new global coal alliance

India created surplus energy in the year 2016—producing more electricity than the demand. This was mainly due to the country's booming coal industry and the pro-fossil policies of the government. Coal India Limited, the state-owned coal producer, generated a record 536 million tonnes of coal in the year 2015-2016—an increase in coal production by 8.5 percent from the previous year.

India aims to more than double its coal production from about 600 million tonnes a year towards 1.5 billion tonnes by 2020. Indian projected coal consumption of 1,300 million tonnes of coal equivalent (Mtce) in 2040 will be 50 percent more than the combined demand of all 34 countries that form the Organization for Economic Cooperation and Development, including the United States and Canada.

India's Asian neighbor and the world's largest emitter of carbon dioxide—China—is projected to increase its coal consumption in the next three decades. Currently, coal contributes to 60 percent of the domestic energy consumption.

China has significantly contributed to the growth in coal emissions, due to an increased domestic demand for coal-powered energy. During the first three quarters of 2017, China imported 6 percent more coal than the previous year.

Both India and China have refused to make any drastic changes to their domestic policies that are coal-friendly. Their contribution to the Paris agreement, in terms of emission reduction, is negligible, and they are determined to expand their coal production and consumption.

While countries in Asia have openly embraced coal, others in Europe like Germany continue to consume more coal despite being misunderstood as 'climate leaders.'

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Germany's coal consumption increased in 2016, and its carbon dioxide emissions continue to increase for the third year in a row. Forecasts indicate that the country will also miss the emission reduction targets that it had proposed in the Paris Agreement for 2020 and 2030.

Together, the US, Germany, India, and China constitute the biggest emitters of carbon dioxide in the world. Their move to embrace coal has signaled the continuation of a coal era that was largely responsible for the development of modern society during the Industrial Revolution.

Other European countries have joined Germany in resisting the phase-out of coal. The Spanish government recently refused to shut down two coal-fired plants that were originally intended for closure.

Poland—Europe's biggest coal burning nation, began its coal imports from US this year. The country's Energy Minister Krzysztof Tchorzewski squashed rumours of coal-shortage in the country saying, *"I can say that this winter no one will be cold in their homes because of a lack of coal."*

President Trump, during his trip to Poland earlier this year said, *"America stands ready to help Poland and other European nations diversify their energy supplies, so that you can never be held hostage to a single supplier."* This guaranteed a reliable coal supplier for Poland and their dependency on coal is set to continue.

At Bonn, a few countries like France and Canada pledged to phase out coal completely. While it may appear to cause a disruption to the coal industry, it does not affect the global coal consumption in anyway.

France and Canada do not depend on coal for the majority of primary energy production. Coal accounts for just 12 percent all electricity produced in Canada, whereas in France it accounts for just 3 percent of electricity produced

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(2014). In contrast, coal accounts for 72 percent of electricity generated in India and China (2014), and they are not phasing out coal.

The International Energy Agency forecasts indicate that South East Asia's coal-fired power generation capacity will increase by 100 GW in the next twenty years, growing by 50 percent over today's levels. Coal prices in Asia are likely to remain high in the coming days because of the increased demand in China and India.

The global coal coalition may not exist on paper, but it is an undeniable reality. It is only a matter of time before we see a new global coal alliance. ■

ABOUT THE AUTHOR

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World Commerce Review is pleased to announce that the Isle of Man Air Registry has been awarded the Best Global Aviation Registry 2018.

The selection panel took into account service innovation, on-going customer support and best practice criteria.

In addition, forward planning and CSR were seen as key areas for the award committee.

The World Commerce Review awards are recognised as the principal indications of professional conduct and excellence.

Have fewer kids to fight climate change?

You don't need to weigh your children's contribution to global warming, argues Cal Beisner

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Because *"having one fewer child reduces one's contribution to the harms of climate change,"* Travis Rieder argues, *"everyone on Earth ought to consider having fewer children."* Rieder confesses that *"this is an uncomfortable discussion."* He says he's *"certainly not arguing that we should shame parents, or even that we're obligated to have a certain number of children."*

But on his grounds, why shouldn't we? If he thinks we're morally obligated to limit our childbearing, shame would seem the least penalty appropriate. If having too many children is, as he implies, analogous to murder, why not criminalize it?

Does he really analogize childbearing with murder? Yes:

> *If I release a murderer from prison, knowing full well that he intends to kill innocent people, then I bear some responsibility for those deaths …. Something similar is true, I think, when it comes to having children ….*

So we shouldn't be surprised that he recommends an article justifying China's one-child policy. There Sarah Conly says the world's 7 billion people cause *"soil depletion, lack of fresh water, overfishing, species extinction, and overcrowding in cities."* When we reach *"9.7 billion by 2050,"* the situation will be even worse.

That's standard rhetoric for population-control advocates. More people = more consumption = resource depletion. Scholars like Julian Simon (a former advocate), Ronald Bailey, Indur Goklany, and even myself have rebutted that equation for decades.

Those who predict resource depletion as a consequence of population growth treat humans solely as consumers. They forget that we're also producers. On average, we produce more than we consume. That's why each generation

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tends to be wealthier than its parents. And our productivity rises through mutual interaction. That means the more people there are in a given locale—including the whole world—the more, on average, each will produce.

They also forget that resources aren't natural. They're manmade. Petroleum was a nuisance until people figured out how to refine it into fuel, plastics, fertilizer, and medicines. Raw materials become resources when people relocate

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In short, not just your child's but all humans' future CO_2 emissions won't make a detectable contribution to climate change. And that means they won't make a detectable contribution to 'droughts, storms, rising sea levels,' or any other alleged harmful consequences of it

and refine them. With some substances, like clean air and fresh water, under most circumstances that's easy. With others, like uranium, it's extremely difficult. And even air and fresh water can require considerable relocation or refining under some circumstances. Ask any scuba diver or desert traveler!

The combination of rising human productivity and this understanding of resources explains why the long-term inflation-adjusted and wage-indexed price trend of all 'natural' resources is downward. That means resources are becoming less scarce. The truth is that more people = more production = more resources.

Nicholas Eberstadt, in a chapter in Bailey's *The True State of the Planet*, argues compellingly that 'overpopulation' can't even be defined by any empirical demographic criteria—not density, growth rate, birthrate, 'dependency ratios,' or anything else. He concludes, *"The images evoked by the term overpopulation—hungry families; squalid, overcrowded living conditions; early death—are real … but … are properly described as problems of poverty."* And poverty, in turn, doesn't hinge on demographic criteria.

And overcrowding in cities? 'Overcrowding' is subjective. Some people like living in high-density cities. Indeed, migration patterns show that more do than don't. At least, they consider the advantages to outweigh the disadvantages. Also, overcrowding correlates not with population density but with poverty. Household living space per person in cities is typically greater than in rural areas. That's because city life brings greater wealth. Wealthier people afford more living space.

But are cities bad for the environment? Edward Glaeser argues the opposite persuasively in *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*. Cities concentrate human impact. They reduce habitat conversion. City dwellers tend to consume less energy and other resources per capita than rural dwellers—even as they produce more.

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But Rieder and Conly's main argument against having children is that doing so will cause climate change. 'More people = more production = more resources' seems the opposite of what's needed to rebut this. Why? Because productivity depends on energy, some 85 percent of energy worldwide comes from fossil fuels, and using them adds carbon dioxide (CO_2) to the atmosphere. That in turn makes the atmosphere warmer. And that causes 'droughts, storms, rising sea levels, and heat.'

So, the argument seems conclusive. Because *"having a child is a major contributor to climate change … everyone on Earth ought to consider having fewer children."*

Unless human action *isn't* really a major contributor to climate change, or unless climate change isn't so self-evidently harmful as Rieder and many others think. Rieder, Conly, and others who argue similarly appeal to the Intergovernmental Panel on Climate Change (IPCC). They consider it the world's most authoritative scientific body on the subject. Its 2013 Fifth Assessment Report (AR5) famously declared, *"It is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century."*

Forget that the IPCC is more political than scientific, riddled with bias, conflicts of interest, and beset by serious violations of its own scientific standards. Since AR5 it has become increasingly clear that the computer climate models on which the IPCC and many governments rely grossly exaggerate CO_2's warming effect. Two lines of evidence show this.

First, on average the models predict two to three times as much warming as observed over the relevant period. This means the models exaggerate CO_2's warming effect by *at least* double if not triple. Why 'at least'? Because, since Earth has warmed as much and as fast in the past as during the modeled period, it's impossible to rule out natural contributions to recent warming and blame it all—or even any particular portion of it—on CO_2.

That leads to the second line of evidence. Past periods of comparable warming demonstrate that, contrary to AR5's claims, natural forces *could* have caused the observed warming during the modeled period. Recently, however, three researchers have provided a convincing argument that they *did*.

Climate scientists John R Christy and Joseph S D'Aleo and statistician James P Wallace III have analyzed the correlations of what they call 'Natural Factors'—solar, volcanic, and ocean current (especially El Niño/Southern Oscillation) variations—and human-induced atmospheric CO_2 concentration, on the one hand, with global temperature, on the other. They conclude *"that once just the Natural Factor impacts on temperature data are accounted for, there is no 'record setting' warming to be concerned about. In fact, there is no Natural Factor Adjusted Warming at all."*

In short, not just your child's but all humans' future CO_2 emissions won't make a detectable contribution to climate change. And that means they won't make a detectable contribution to 'droughts, storms, rising sea levels,' or any other alleged harmful consequences of it.

Add to that the fact that, according to alarmists' most authoritative source, it's not possible to tie increasing frequency or intensity of severe weather events to global warming. Indeed, there's been no upward trend in either, as, for example, Ryan Maue shows for hurricanes. It follows that global warming, insofar as it happens, and whatever causes it, isn't likely to be the disaster the alarmists think. So, whatever else you might weigh when considering how many children to have, you don't need to weigh their contribution to global warming. ■

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Developing collaborative leaders

Sriven Naidu describes a new type of collaborative leader required for the complex interdependent systems in a global economy and resource-constrained world

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'Human capital' can be thought of as a measure of the 'ability to perform labour so as to produce economic value'. However, abilities that were previously human capital may be liabilities in a new, resource-constrained context.

Imagine a group of human explorers settling on an island called 'Terra'. Every young adult is taught to hunt the animals in the forest. This increases the community's collective 'ability to produce economic value'. Since the island has abundant flora and fauna, the settlers are lulled into calling this new home 'the land of plenty'.

While training expert hunters increases the community's welfare initially, this will not always be the case. Over-hunting soon occurs and leads to diminishing returns – or even extinction of the most valuable species that underpin the economy and life on Terra.

Once this over-hunting stage has been reached, training more expert hunters no longer adds to human capital. To sustainably continue producing economic value, human capital must be rebalanced with other forms of capital. The island's wild animals are natural capital. The security and harmony of the community is its social capital.

As individuals, our voracity is 'mismatched' to today's environmentally constrained world. Before humans became so numerous and technology so powerful, our spear-yielding ancestors with unrestrained appetites for consuming resources achieved better 'individual fitness' for survival and reproduction than their rivals who showed more self-restraint.

In matters of consumption, self-restraint does not come naturally to the hunter-gatherer mind that their modern-day descendants still possess. (See *The evolutionary mismatch hypothesis: Implications for psychological science*. Current Directions in Psychological Science. Li, NP, van Vugt, M, & Colarelli, SM (in press.))

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This mismatch leads to the 'tragedy of the commons' concept popularised by ecologist Garrett Hardin in 1968. Hardin revived a passage from William Forster Lloyd, a 19th century Victorian economist. Lloyd had crafted a cautionary parable on the effects of unregulated grazing on common land (colloquially called 'the commons' at that time).

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Our world is too interdependent to think in terms of survival of individuals or distinct groups. 'Group fitness for survival' may soon mean 'humanity's fitness for survival as a single indivisible group'. The process-focused approach proposed here is a positive vision for a new norm of collaborative leadership and governance

To ensure collective survival, social norms emerge in each community. For example, it is taboo to kill young or pregnant animals in many hunting communities. On the island of Terra, the need to train and organise 'forest rangers' to constrain excessive hunting by 'poachers' soon emerges. The average individual's chances for survival increases if the society he or she belongs to adopts norms that result in enhanced 'group fitness' for survival. In the present day, regulators and policy-makers are like 'forest rangers' and may, for example, oversee financial markets or business sectors.

Their jurisdiction may be national or international. Unfortunately, experience shows they have limited influence in a globalised economy with complex interdependent systems for food, water and energy – which in turn affect security. An article about research at the New England Complex Systems Institute describes how corn has become simultaneously food, biofuel, and the subject of financial market speculation which the researchers show led to numerous food riots.

Traditional forest rangers such as regulators can only do so much. Management education has begun to train new varieties of more ecologically-conscious rangers. Cross-disciplinary ecological consultants, Greentech engineers, CSR and sustainability reporting professionals are just some examples.

Unfortunately, this is still not enough because the real world is far more complex than our imaginary island of Terra.

To better appreciate the real challenges involved, we need to add the following layers of complexity to Terra.

Cultural friction

Imagine another human community arrives and settles on Terra after the explorers. This subsequent community consists of farmers who plant crops and rear domesticated animals. They appoint consensus-building leaders according to their customary procedures. In contrast, the explorers are led by an hereditary chief.

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Governance transition

Over time, both communities have interacted and learned to appreciate the strengths of each other's governance practices. As a result, each community is continually evolving its own governance.

Paradigm transition

A group of disgruntled hunters have left the explorer camp to live at the edges of the forest, upriver from the farming community's land. They hunt game indiscriminately and are growing in numbers rapidly. They have no malicious intent. They simply do not understand why they cannot hunt without restraint as their elders did.

How might all the communities pursue a prosperous co-existence on their shared Terra? A new type of collaborative cross-cultural leader is required to help. He or she must:

- anticipate plausible crisis scenarios
- build effective coalitions for collective governance
- co-create a compelling shared vision
- diffuse know-how and new social norms
- over time, shift every stakeholder's paradigm towards the shared stewardship of Terra.

To equip such leaders, future-oriented thinking such as the scenarios practised by Royal Dutch Shell and adopting a complexity 'lens' for understanding systems seem to be two useful mindsets to develop. Especially in cultures where such mindsets are uncommon.

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The facility to rapidly 'codeswitch' between different cultures (whether professional, national, the culture of government, private sector or NGOs) is also worth developing. This ability is crucial to collaboration and innovation. The 'curricula' will continue to evolve and new useful topics will emerge.

The pedagogical approach for developing requisite skills and more expansive mindsets will be a crucial challenge. Assembling a varied group of senior participants from diverse nationalities, political systems and sectors, and building a mutual support ecosystem would be a very effective approach. To develop skills to a sophisticated level (in areas such as communication and negotiation), these participants must work on actual problems.

This should include identifying and engaging a coalition of diverse stakeholders to begin addressing this problem. This may appear resource-intensive. A programme with participants from the same country, same background or with the same generational challenges would be temptingly cheaper to run but, as Warren Buffet cautioned: *"Price is what you pay, (whereas) value is what you get".*

Since sustainability benefits organisations in all sectors, every organisation can benefit from investing in developing such senior leadership.

There are probably no final solutions to complex challenges, only processes for continually discovering new solutions. Among the various types of leaders needed for multinational enterprises, we will need many more of the kind who inspire commitment to mutually respectful dialogue and continual negotiations.

Our world is too interdependent to think in terms of survival of individuals or distinct groups. 'Group fitness for survival' may soon mean 'humanity's fitness for survival as a single indivisible group'. The process-focused approach proposed here is a positive vision for a new norm of collaborative leadership and governance.

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At stake is nothing less than ensuring a sustainable future for the generations that will follow us. ■

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World Commerce Review is pleased to announce that Hermes Aviation Consulting has been awarded the Most Recommended Aviation Consultancy 2018.

The selection panel took into account service innovation, on-going customer support and best practice criteria.

In addition, forward planning and CSR were seen as key areas for the award committee.

The World Commerce Review awards are recognised as the principal indications of professional conduct and excellence.

Enabling ICT for development

Interview with Dr M-H Carolyn Nguyen, who explains why governments need to start thinking seriously about how to leverage ICT for their development goals, and why an appropriate policy environment is crucial to enable the level of investment necessary to support sustainable economic growth

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Biography

Dr M-H. Carolyn Nguyen is a Director of Technology Policy at Microsoft, focused on policy issues related to Internet governance, the digital economy, and artificial intelligence. Dr Nguyen is also Vice Chair ICC Commission on the Digital Economy

What does ICT mean for sustainable economic development?

ICT applications in all sectors around the world are already accelerating the pace of development in national economies, addressing the United Nations Sustainable Development Goals (SDGs), and improving the quality of life in numerous communities. ICT offers the potential to empower everyone and enhance their lives by giving them access to education, better healthcare, and more opportunities; lowering barriers to market entry for entrepreneurs and enabling organizations of all sizes to be more efficient, innovative, and increase their market reach; and helping governments to provide better services and interaction for their citizens.

There is a wide variety of technologies that serve different purposes in enabling economic development. To better appreciate the broad spectrum of ICT, it is helpful to think of the technologies involved as layers within an ecosystem:

- At the foundation of any digital service is an *infrastructure* layer that includes the networks and devices that enable access to relevant applications, contents, and services; and the sensors that provides appropriate information for the different services (eg. traffic patterns, meteorological conditions, water levels). Examples of infrastructure technologies include wireless broadband networks that provide affordable access to remote

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The IGF provides an opportunity for those policymakers who wish to benefit from diverse sources of knowledge, and generate policy options from the experience and expertise of relevant stakeholders, all of which can then be translated into local action

communities; and sensors in the ground in farms that provide timely updates on soil humidity to help improve crop yield in an environmentally responsible manner.

- *Applications, contents, and services* that are relevant to the different communities and sectors. Examples include online information that enables students to learn subjects that are not otherwise available, or small businesses to identify potential partners and buyers for their products; healthcare applications that remind people to take their medications, or enable remote experts to consult on cases; and mobile payment capabilities that make it possible for more people to conduct financial transactions, or send money to relatives. Furthermore, the ability to link the physical and digital worlds using information available through sensors and insights provided by data analytics has the potential to enhance every process, transform our daily routines, and enable significant innovations in every sector.

- An essential element of this enablement is *user* digital skills and literacy, both to be able to access and consume the services offered, as well as to create services that are relevant to the local communities. Sustainable economic development requires applications and contents that are of interest to people.

ICT provides so many cross-cutting opportunities for sustainable economic development. It is fundamental to the realization of the SDGs.

What is the role of business in making this happen?

Business is at the forefront of developing the technologies that can enable inclusive growth and sustainable development both globally and locally. Working in partnership with governments and organizations around the world,

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we have been deploying innovative solutions for the goals articulated by the SDGs, and investing at all layers of the ICT ecosystem on both the supply and demand side, to address needs at the infrastructure and applications layers, as well as build capacity and digital literacy skills for people to not just consume, but also create new services. Business has also spearheaded a number of global education initiatives, promoted innovation and startup hubs, and entered into public-private research and development partnerships.

We have always endorsed multi-stakeholder approaches, recognizing that each stakeholder contributes unique perspectives that can help develop more effective and practical approaches and policy frameworks. We see ourselves as an integral part of the policy-stakeholder community globally.

Business also has a role in helping people understand how ICT actually works. As technology often evolves faster than regulation, policy stakeholders must have a working knowledge of technology to develop future-oriented policies that can encourage responsible development of technology and contribute to societal goals, while not hampering innovation. Forward-looking and flexible approaches will lead to better outcomes, meet national objectives and ensure that the societal benefits of ICT are not lost by short-sighted policy measures.

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How can governments drive investment and reap these benefits?

Governments need to establish a holistic policy environment that is focused on enabling a continued level of investment that can lead to sustainable innovation, growth, and development. With ICT, the private sector has played an important role in deploying internet-related infrastructure and delivering a wide range of services.

Continued investments will require stable and predictable policy and regulatory frameworks that recognize the value of ICT and the need for developing healthy ICT ecosystems that can lead to sustainable economic growth. Without growth, investment becomes philanthropy; and without growth, realization of the SDGs is not possible.

For example, public policies should promote rather than deter investment in innovative broadband technologies that can extend reach and affordability of network access to new applications. The full potential of the internet as a platform should be enabled by adopting policies that comply with applicable privacy and security regulations while enabling cross border data flows. Investment in high speed networks and ICT services can create a platform for economic growth, job creation, and greater competitiveness.

ICC's recent policy statement on ICT policy and sustainable economic development is a useful tool to help governments understand the impact policies have on the infrastructure, applications, services and user-engagement layers of the ICT ecosystem.

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You note the importance of an 'enabling policy environment', what factors come to mind when considering this for ICT?

ICT is an essential foundation for enabling the SDGs, but not sufficient without a policy environment that enables its development and deployment.

An enabling policy environment balances considerations in four dimensions:

- First, *economic* considerations about how to promote sustained investment and encourage innovation and

entrepreneurship that can lead to national economic growth.

- Second, *social and cultural* considerations about how to foster ICT and digital literacy skills to enable consumption as well as creation of relevant content, services, and applications for the local communities that are respectful of human rights.

- Third, *technical* elements that are important for maintaining a safe, secure, resilient and globally interoperable infrastructure that supports the above objectives.

- And finally, *governance approaches* that (1) encourage public-private partnerships and initiatives that can leverage the unique contributions of each stakeholder group, including government, business, civil society and the technical community, and (2) reflect the needs of stakeholders and the different considerations that are required to achieve sustainable economic development and consider regionally or globally interoperable policy frameworks.

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How does this work in practice?

A key dimension of an enabling policy environment centers on 'governance approaches' and the need to leverage the unique contributions of each stakeholder group, including government, business, civil society and the technical community. To illustrate how this works in the real world, I'll take SDG goal five to *"achieve gender equality and empower all women and girls"* as an example. This SDG specifically calls for enhanced use of enabling technology to help empower women.

ICT can impact gender equality by providing women with access to education, financial means, healthcare information, and tools that can make them feel more physically secure, thus creating opportunities for them to participate more readily in the labour market. However, this requires women to have meaningful access to ICT, which depends on factors such as affordability, relevant content, skills and security, to name a few examples.

Currently fewer women than men have internet access in all developing regions. Worldwide, some 2.3 billion women do not have internet access and women are currently less likely than men to use or own digital technologies. Bridging these gaps will require women to overcome the barriers to access as well as creation of relevant applications and contents.

This is where effective 'governance approaches' that leverage the unique and relevant contributions of each stakeholder group can make a difference. For example, business is investing in extensive community training to enhance womens' use of technology. By partnering with local nonprofits, programmes equip women with digital devices and provide training so they can teach their neighbours and women in nearby villages to find relevant content, and how to make the most of these tools. Many of the private sector initiatives are also encouraging a lifetime attitude to training and raising awareness for women of all ages.

Civil society can advise on societal and cultural factors within social groups that may impact women's access and use of ICT. These groups are often able to collect data and raise awareness on issues that create barriers for women. The technical community lends its expertise by advising on technical capabilities of infrastructure and technology. This expertise is invaluable in considering how technologies might mitigate the socio-economic and political issues identified. For example, the technical community can work to gather data on gender gap and develop insights that help drive evidence-based policy-making to overcome challenges.

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Government policy-making can really benefit from working with all stakeholders. Pooling relevant expertise and experience can lead to better and more impactful outcomes to address gender digital divides.

It sounds like collaboration is important, where can governments and businesses meet to have these exchanges?

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A good example of how and where stakeholders can collaborate and share knowledge on a global scale is through the Internet Governance Forum (IGF). The IGF provides a unique opportunity because stakeholders meet on an equal footing and share best practices and policy options on a range of subjects pertaining to the internet.

The IGF provides an opportunity for those policymakers who wish to benefit from diverse sources of knowledge, and generate policy options from the experience and expertise of relevant stakeholders, all of which can then be translated into local action.

The 12th IGF took place in Geneva at the United Nations Palais de Nations under the theme: *Shape Your Digital Future!* A workshop of note, organized by the business community, government and civil society explored the complex relationship between ICT and women's economic empowerment and gathered capacity building options to address challenges faced in developed and developing countries. More information about the workshop and IGF itself can be found on the IGF website.

How does ICC facilitate business engagement in multistakeholder dialogues globally?

The ICC Commission on the Digital Economy gathers business expertise across sectors and geographies to produce policy guidance that helps the global development of the digital economy and promotes investment in ICT. This information is leveraged in a number of ways, including through the Business Action to Support the Information Society (BASIS) initiative at the IGF and other global forums. BASIS helps evangelize the value of the multistakeholder approach and contributes business expertise to policy-making intended to leverage ICT for sustainable economic development. ■

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Bermuda's yearly rendezvous to celebrate innovation and achievement

The Bermuda Department of ICT Policy and Innovation reviews the annual celebration of the digital economy

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In Bermuda and all over the world, technology is acknowledged as today's greatest enabler of progress. The Department of ICT Policy and Innovation (IPI) within the Ministry of National Security in Bermuda recognises this principle and consistently promotes initiatives that encourage technology innovation and e-entrepreneurship. As such, year after year, it partners with public and private entities Island-wide to assist in bolstering progress through technology, specifically by empowering the Island's entrepreneurs with the tools which they need to launch e-businesses and write their own success stories.

Year after year, Global Entrepreneurship Week (GEW) takes the Island by storm in November with a full calendar of events and activities targeting current and potential entrepreneurs. GEW provides the opportunity to recognise, celebrate, congratulate, and inspire the Island's entrepreneurs in a frenzy of happenings all through the community. During that time and worldwide, over 160 countries participate in the global event and approximately 25,000 organisations plan more than 30,000 events, directly engaging over 10 million people globally.

The aim of GEW is to inspire Bermuda's entrepreneurs of all ages, backgrounds, and experience levels to join in the multitude of workshops, activities, competitions, and networking evenings and to turn their entrepreneurial dreams into reality. Through the variety of encounters, they meet like-minded people, have direct access to subject-matter experts, harness technology, and unleash their ideas.

In Bermuda, IPI partners with the Bermuda Economic Development Corporation (the BEDC) and the Youth Entrepreneurship Initiative of Bermuda (YEI) to grow the GEW Bermuda presence. As a result, the GEW buzz is palpable throughout the month and much is achieved and celebrated for the various GEW audiences. Several times, Bermuda has won the *Champion Catalyser* Award at the yearly Global Entrepreneurship Congress.

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As a key part of the Ministry of National Security, the mission of IPI is to develop sound policies and regulatory frameworks that promote and enable innovative, cyber-safe, and cyber-secure ICT-enabled industries and to facilitate the adoption and growth of a secure and advanced digital economy.

IPI is primarily outward-facing and is involved in the areas of cyber security, e-commerce, e-business, cybersafety, privacy, technology literacy and development, and Internet governance.

During GEW, IPI provides sponsorship and other forms of assistance for specific GEW events:

- PitchTECH, a sub-category of the annual Rocket Pitch Business Idea Competition, another popular competition that culminates during GEW, and

- The Technology Innovation Awards, or TechAwards, which are a highly -anticipated signature GEW Bermuda event.

Where opportunity meets hard work, technology enables creativity and innovation

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PitchTECH

The Rocket Pitch competition gives individuals the opportunity to pitch a business idea in a bid to win seed funding and business services to launch it. PitchTECH is the category dedicated to new and innovative technologies or e-business ideas with a technology focus.

The TechAwards

An overlap of many of IPI's objectives lays in the e-business and e-skills area, building on how technology and entrepreneurship underpin a strong and dynamic economy and how technology. And so it is only fitting that IPI has sponsored Bermuda's Technology Innovation Awards since 2006.

The TechAwards, this year celebrating ten years of success and innovation, are the Island's opportunity to celebrate innovation and achievement among the ranks of Bermuda's residents and companies. They allow IPI to recognize the Bermuda residents and Bermuda-based organizations which have provided notable technology solutions to Bermuda and its residents. Every year, the winners demonstrate that the Island, despite (or thanks to?) its small size, has what it takes when it comes to technological innovation and achievement. The Bermuda public is the driving force of TechAwards as it is called to nominate local innovative achievements that are to be recognized and applauded.

Consistent winners and international players

Some technology companies have won more than once over the TechAwards ten-year history. Three-time winner First Atlantic Commerce (FAC), a provider of online payment solutions and international credit card processing for merchants, banks, and partners all over the world, was first recognised in 2007.

FAC provides merchants with multi-currency payment solutions, tokenization services and PCI validated Point to Point Encryption solutions. The 2007 TechAward was for FAC's product Verified by VISA and MasterCard SecureCode™ designed to reduce credit card fraud for online merchants in Mexico and Latin America.

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Dr Marisa Stones, Director of ICT Policy and Innovation, and Chris Burns, CEO of TechAward winner First Atlantic Commerce

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TechAwards 2017 winners

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GEW Host Committee: Maryem B Starling and Dr Marisa Stones of the Department of ICT Policy and Innovation, Erica Smith of the BEDC, Joe Mahoney of the Youth Entrepreneurship Initiative, and Jamillah Lodge of the BEDC

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In 2012, FAC won a TechAward for its Payment Gateway which allows merchants to lower PCI-DSS costs, protect data and improve overall transaction security. And just this year, FAC won the 2017 TechAward for a PCI-Validated P2PE Call Center Payment Solution for companies in Latin America Caribbean, further enhancing this new offering across Central America.

This expanded the company's current bank card processing offering to companies and banks in Europe, Mauritius, the US, Canada, Panama, Bermuda and across the Caribbean, and positions FAC as the most well-connected gateway in the Central American and Caribbean territories.

Another multiyear winner in 2014 and 2015, Trunomi is one of the hottest FinTech start-ups around. It has created a patented technology that can simplify the process of sharing personal data, in particular between individuals and financial institutions. Trunomi operates a consent-based data sharing platform to streamline the customer verification process for financial industry clients internationally.

Not just that: Trunomi recently won the Global FinTech Hackcelerator competition in Singapore. It also won the Visa Europe Collab Startup Competition in Israel and was named most promising start-up at the Benzinga Global FinTech Awards in New York. The company also features on the 2015 European FinTech 50 ranking.

Additionally, two members of the Trunomi team were recently named on the Innovate Finance Top 100 Women in FinTech Powerlist: Sally-Anne Baron, Chief Financial Officer, and Chia Brewin, Director of Customer Development. Stuart Lacey, founder and CEO of Trunomi, said: *"We are making it possible for financial institutions to progress beyond the outdated paper-based customer onboarding and data remediation that remains widespread today by delivering a mobile solution that benefits both the institution and the individual."* Mr Lacey has consistently spoken of the great potential he sees for the Island as a home for financial technology development.

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Last but not least, QuoVadis is another Bermudian company that has grown into a global leader. In 2008, QuoVadis won a TechAward and has since come full circle. Founded in 1999, it received startup funding from e-VentureCentre, a Bermuda-based member of the Zurich Financial Services Group. The Island's vibrant international community and well-grounded regulations for electronic transactions provided a springboard for QuoVadis' international expansion.

Bermuda was one of the first jurisdictions worldwide to enact legislation dealing with the formation of electronic contracts and the validity of digital signatures. Long a home to leading insurance and investment companies, the island now hosts a growing convergence of global e-business companies and service providers.

According to QuoVadis co-founder, Tony Nagel, *"Bermuda [is a focal point] in the development of international e-business. Many local operations sit at the hub of business networks that extend around the world, dealing with high-value transactions and confidential transfers of information. Use of [the] Bermuda certificate authority increases the overall security of our clients' businesses and reinforces their affiliation to their preferred offshore regulatory, legal, and fiscal environment."* With its 2017 acquisition by Swiss cybersecurity firm WISeKey, QuoVadis Holdings has come back to its Swiss roots. Roman Brunner, CEO of QuoVadis, said the acquisition would help QuoVadis to expand its multinational corporate markets.

TechAwards, a springboard to success in business and technology

IPI, through many partnerships and year after year, strives to ensure that technology plays its part in empowering Bermuda's entrepreneur and bringing recognition to the winners of the various GEW challenges. It takes a committed, hard-working community of dedicated entities and individuals to make a busy calendar like that of Bermuda's GEW a success in serving, empowering, and celebrating the Island's entrepreneur.

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Every time a Bermudian is given the opportunity to strive for success, they impress with their drive, creativity, and hard work. The technology-themed GEW events continue to show that in the right context, where opportunity meets hard work, technology enables creativity and innovation. ■

Bermuda Department of ICT Policy and Innovation

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World Commerce Review is pleased to announce that the Malta Business Aviation Association has been awarded the Best Aviation Association 2018.

The selection panel took into account service innovation, on-going customer support and best practice criteria.

In addition, forward planning and CSR were seen as key areas for the award committee.

The World Commerce Review awards are recognised as the principal indications of professional conduct and excellence.

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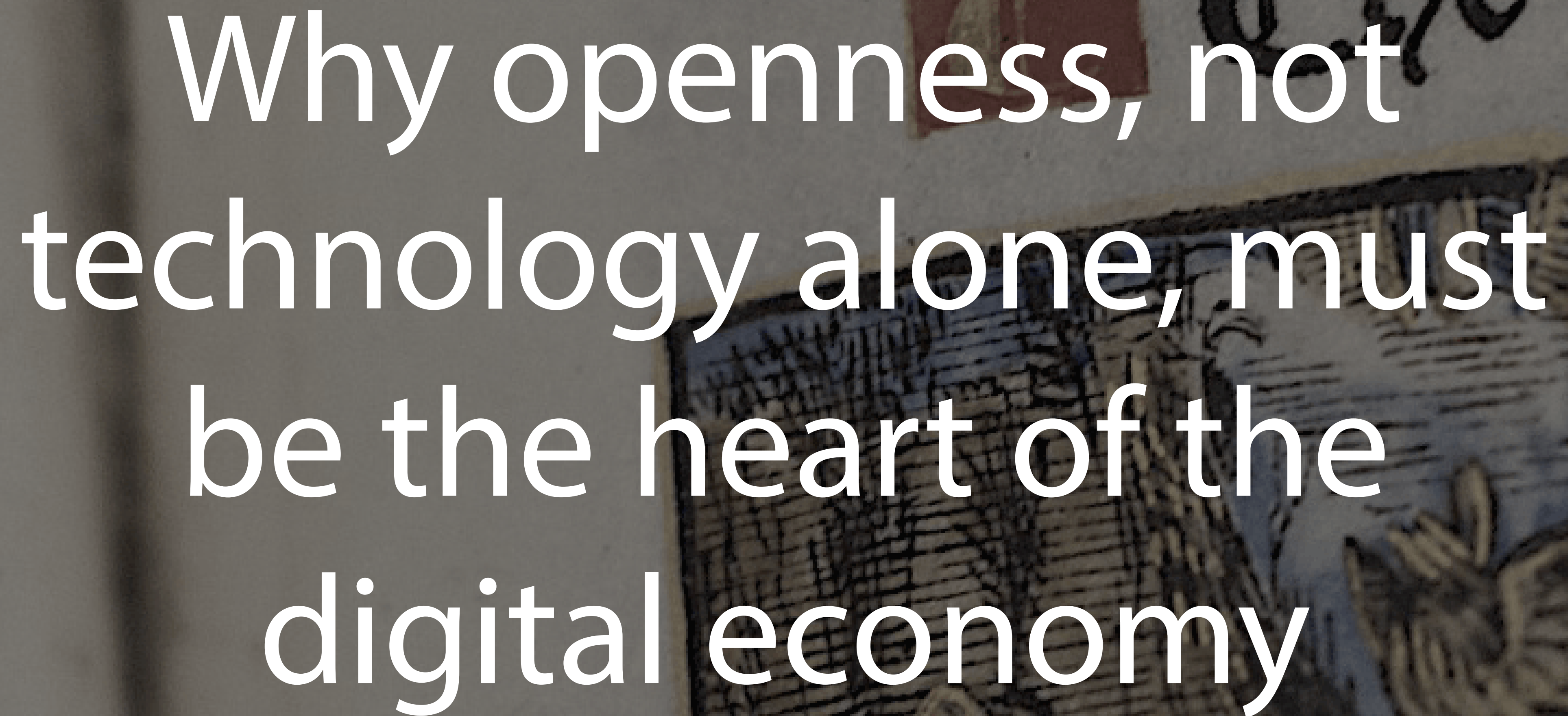

Why openness, not technology alone, must be the heart of the digital economy

Rufus Pollock argues that for creativity and freedom to flourish we must put openness at the heart of the information age

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When Johannes Gutenberg invented the printing press in 1440 it was, just as the internet has been in our time, a revolutionary development. Before the printing press, it is estimated there were just 30,000 books in all of Europe. Fifty years later, there were more than ten million. Over the next 500 years Gutenberg's invention would transform our ability to share knowledge and help create the modern world.

Less than a century later on October 6, 1536, a man named William Tyndale was burnt at the stake as a heretic for producing the Bible in English that bore his name. Just 40 years old, Tyndale grew up in a world transformed by Gutenberg's invention. Educated at Cambridge, Tyndale became a scholar and a priest. At that time it was forbidden and deemed heretical to translate the Bible from Latin. The reason was simple: control of the information in the Bible provided immense power.

Very few could read Latin, not even most aristocrats. By ensuring the Bible remained in Latin only the Pope and priests of the Catholic Church retained control of the information within it. This allowed the church to exert religious authority and also to maintain secular power and generate revenues, for example by inventing new 'pay-for' sacraments with no scriptural basis – the most egregious of these were 'indulgences' which permitted their purchaser automatic forgiveness of sins.

Tyndale had an independent mind. Inspired by Martin Luther's call to reformation he became a medieval information freedom fighter. Tyndale was committed to opening up information by translating the Bible into English. Between 1524 and 1527 he produced the first printed English translation of the Bible from abroad to avoid prosecution, which was secretly shipped back to England. Despite being banned and publicly burnt, his translation spread rapidly, giving ordinary people access to the Bible and sowing the seeds of the Reformation in England.

Fast-forward to today and we are living through another information revolution as digital technologies such as the internet change how information is created and communicated. Our world may seem very different from that of Gutenberg and Tyndale, but if we look deeper there is much we can learn.

Gutenberg's technology may have laid the groundwork for change, but the printing press could very well just have been used to produce more Latin Bibles for priests – enabling only more of the same without changing the balance of power. It was Tyndale's efforts to translate the Bible in order to democratise access to it that created real change:

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Knowledge power in the 16th century came through control of the Bible. Today, in our data-driven world it's much broader: everything from maps to medicines, sonnets to statistics

the printing press was just the means to carry his message to the masses. In doing so he empowered and liberated ordinary people and gave them the opportunity to understand, think and decide for themselves. This was open information as freedom, as empowerment, as social change.

Knowledge power in the 16th century came through control of the Bible. Today, in our data-driven world it's much broader: everything from maps to medicines, sonnets to statistics. And so today we need to open up public data and information, making it freely available to anyone for any purpose, building insight and knowledge from it together.

In fact we already have concrete examples of how this would work. For example, OpenStreetMap is an open, global map service based on freely available sources. OpenTrials is an open database of medical and clinical trials, open source software such as Linux and Android powers 80% of all smartphones and of course there is a vast amount of publicly-funded research made available through open journals.

Tyndale's example highlights the crucial role of openness: too often we focus on technology and forget the structures of law, ownership and power that technology operates within. Dazzled by the astonishing pace of technological advance we can easily think that information technology is itself the solution. Instead we must think about the purpose, power and politics of information technology, and not presume some in-built positive aim. Put simply: the medium is not the message, and the internet's open architecture will not itself guarantee a more democratic or open world – as the events of 2016 should demonstrate.

If we need reminding of this we need only look to radio or even cable TV. Discussions of radio from the 1920s sound eerily familiar to early utopian visions of the internet: radio would revolutionise human communication, creating a peer-to-peer world where everyone could broadcast, enabling a new and better democracy. Radio may have de-

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livered on its technological promise but not on its social one. Far from a peer-to-peer communications democracy, instead we have a one-way medium dominated by state broadcasters and a few huge corporations.

Likewise, take a look at the 21st century internet and it's clear that the internet's costless transmission enables the creation of information empires and information 'robber barons' as much as it does digital democracy and information equality. Modern information technology offers unprecedented opportunities for surveillance, as a newly passed Investigatory Powers Act in the UK demonstrates, and for the manipulation of information. It is just as easily used to exploit as to empower.

Which brings us back to Tyndale. He took the possibility the printing press offered and married it with openness. In doing so he created something truly transformative – modern versions of the Bible incorporate much of Tyndale's translation. The same is true for us: in all areas, from databases to drug formula, we must combine the possibilities offered by digital technology with a policy of openness. Only by putting openness at the heart of the information age can we fully realise its potential – be that for creativity and collaboration, or for freedom and fairness. ■

Rufus Pollock is an Associate of the Centre for Intellectual Property and Information Law and the Founder and non-executive President of Open Knowledge International at the University of Cambridge

This article was originally published on The Conversation

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World Commerce Review is pleased to announce that the Isle of Man Air Registry has been awarded the Most Recommended Global Aviation Registry 2018.

The selection panel took into account service innovation, on-going customer support and best practice criteria.

In addition, forward planning and CSR were seen as key areas for the award committee.

The World Commerce Review awards are recognised as the principal indications of professional conduct and excellence.

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Data is the best weapon against fraud

Banks and merchants are turning to data-driven technology to counter the rising problem of fraudulent transactions and chargebacks, Alice Bonasio writes

In October 2017, the European Banking Association closed its consultation on draft guidelines for reporting fraud under revised PSD2. With more than 5,000 cases of fraud reported every day in Britain in the first half of 2017 (according to recent research by Barclays), banking fraud is a mounting problem and one of the most challenging issues facing the industry today. Coupled with the new reporting requirements brought by PSD2, this situation is prompting many banks to rethink their fraud prevention and intervention provisions, and to update their defences against all types of financial fraud.

"Risks are shifting with every new digital banking innovation. As a result of this, banks are turning to digital means to reduce fraud", says Steve Morgan from Global Business Process Outsourcing firm Intelenet. *"Machine learning is increasingly being applied to help speed up the resolution process, resulting in improved customer support for those who have fallen prey to fraud".*

Models like Google search have proven that feeding more data of size and breadth into an algorithm leads to greater performance than simply trying to optimise the model itself. It is no surprise, therefore, that the leveraging of large, diverse and rapidly changing datasets should make a big difference in fraud detection. The storage, analysis and sharing (in real time) of big data can turn the tide on fraudsters.

In 2016 at the Retail Risk conference in London, the Chief Constable of the National Police Chiefs council for Business Crime Reduction, Susannah Fish, had also highlighted the growing importance of tackling fraud in the sector, by giving her support for a crime data-sharing platform, the National Business Crime Solution (NBCS). The platform subsequently won the Best Crime Partnership of the Year at the Retail Fraud Awards, and in December of the same year – in recognition of their work and success – the Home Office agreed to fund expansion of the NBCS via the Police Transformation Fund.

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The NBCS's first end-of-year report provided a solid evidence base on the value of combining data and intelligence, and clearly lays out the case for the benefits of effective and timely data sharing in the context of tackling and preventing various strains of fraud-related crimes.

The NBCS has proven so successful because it enables the effective sharing of appropriate data between the police, crime reduction agencies, and the business community to reduce crime and subsequent risks to all. Sitting above other commercial intelligence hubs, as an independent 'not-for-profit' unit, helps maximise the value of all the busi-

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Real-time data sharing helps resolve disputes the moment they occur, which, apart from avoiding loss of profits and resources, can help to preserve and even increase customer trust, loyalty and retention

ness data before submitting it to law enforcement through a single data-sharing agreement. Rather than numerous hubs with differing data, the group aims for a central data source that can be shared to best effect incomplete or localized. This is an approach that is being widely adopted across all areas of fraud prevention by both banks and merchants.

Friendly fraud

Merchants and banks lose billions every year to online fraud and chargebacks. But what are credit card chargebacks? Generally, when a customer sees a transaction on their bank statement that they don't recognise, they may challenge that it was in fact a legitimate purchase that they made, often requesting that the charge be refunded. These disputes often lead to a refund, or chargeback, being issued. This is especially convenient to customers and issuing banks, when the alternative is an in-depth investigation in the face of little data to establish whether the transaction actually took place.

Sometimes these cardholder services disputes arise from a genuine concern by the shopper, which can be a sign that their account details may have been compromised. However, sometimes consumers will illegitimately dispute a transaction, more often than not going directly to the bank rather than the original merchant. This leads to loss of revenue, merchandise, and shipping costs to merchants, who have to cover any additional fines and fees applied by the bank, as well as being affected by potential long-term damage to customer relations.

While the term 'friendly fraud' may seem innocuous enough, this rising problem has a high impact on the business community, with current estimates suggesting that financial impact of chargebacks could reach close to $30 billion globally by 2020. In fact, according to a 2015 report by Javelin Research on the impact of fraud and chargebacks, management of the issue consumes a significant percentage of resources (between 13% and 20%) within organizations. In the UK, fraud and cybercrime cost the economy nearly £11 billion last year, according to Action Fraud.

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Today's dispute process creates many challenges, as many more channels are open for customers to easily make purchases. This brings convenience but also much more room for potential misinformation, miscommunication, and fraud. Common cases include so-called 'buyer remorse', automatic renewal of subscriptions, or children using a parent's account to buy gaming content online without consent. Often, the merchant's name as it appears on a statement doesn't match their trading name, making it more likely that forgetful or confused customers will dispute any given transaction.

In order to address this problem and assess with reliable accuracy whether a dispute is legitimate or not, it is crucial for issuers to have access to data and that the outcomes be shared with the merchants promptly for resolution, before disputes escalate and create costly chargeback problems.

"Shared data can be beneficial in multiple fraud scenarios, and friendly fraud is no exception. I've been hearing from e-commerce merchants in the app and gaming environment that friendly fraud is just going through the roof, representing as much as 75% of all their card-not-present chargebacks", explains Julie Conroy, from Boston-based analyst firm Aite Group.

This represents a serious problem for the industry as a whole, but it is ultimately the consumer who bears the cost. To tackle these issues effectively, technology needs to align itself with the interests of cardholders, banks, and merchants and bridge information timing to when the customer initiates the dispute.

The power of big data

"The amount, timeliness and depth of data that a party in the payments eco-system acquires to associate a transaction with a customer, and what that customer divulges during the purchasing experience, allows us to make the best-in-

formed decision". - Matthew Katz, CEO of Verifi, a leading global provider of end-to-end payment and risk management and card not present fraud and chargeback solutions.

In April 2017, Verifi launched Order Insight, an advanced collaboration platform that applies this principle of connecting merchants, issuers and cardholders to access accurate and timely data to the benefit of all. Alongside this solution is Verifi's Cardholder Dispute Resolution Network (CDRN), which enables issuers at the initiation of a dispute to redirect consumer disputes to the merchant, pausing the chargeback process for up to 72 hours, allowing the merchant time to assess and resolve the issue appropriately before becoming a chargeback.

Order Insight enables near real-time sharing of the transaction details between cardholders, merchants and issuers, providing detailed information for the customers to act upon disputed transactions, and for merchants to have the ability to challenge and deflect chargebacks. Thus, whenever a dispute arises, each party will have access to the information to eliminate customer confusion, provide an improved customer experience, and determine the legitimacy of the sale, reducing the impact of issues such as friendly fraud.

"Order Insight is the next phase of our services evolution, where all parties are connected working together for mutual benefit", adds Katz . *"By being able to share and access data – such as purchase item description (size, colour, style), date of purchase, merchant's name and contact information, customer's device used, IP address, etc. – the volume of chargebacks can be significantly reduced. This results in fewer fees and penalties imposed on merchants, but most importantly the retention of sales and improved customer relations, all of which translate into increased profits".*

All businesses want to derive insights from leveraging big data in order to make better, smarter, real-time and fact-based decisions, especially when it comes to dispute resolution. Companies that both invest in and derive value from their data already have a huge advantage over their competitors. A key success factor in achieving this, how-

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ever, is the availability of the right data at the right time. Businesses need to know what decisions need to be made, when to take action, and how these actions will impact their business.

As fraudsters have gone digital, banks and merchants are discovering very quickly that the best way to combat online fraud is to develop machine learning programs. This allows organisations to leverage data – large, varying and fast-changing datasets – to enable the extraction of insights, either as visualisations for consumption or as predictive computer models for consumption. Fraud detection – whether true fraud or 'friendly' fraud – is a predictive analytics issue. Predictive analytics techniques work by extracting patterns from past data to predict the future.

Traditional predictive models, which assume that what was accurate last year will also be accurate this year, are limited by nature. You can only optimise a mathematical model so much. For such models to be effective requires accurate, timely, and extremely broad data. To increase the accuracy of a model requires more data with greater size and breath. Banks and merchants constantly collect a great deal of data from their customers, via multiple channels such as service preferences, transactions, blogs, feedback and surveys.

Verifi's Order Insight allows issuers and merchants to share detailed order information in near real-time at the initiation of a customer dispute. Apart from the goods or services in dispute, detailed information on the cardholder's transaction history, previous disputes filed, refunds issued, and account delinquency may also be available. The device (and type) that was used to make the purchase may be accessible, in addition to the name, username, IP address, location, phone number and email address included in the merchant's customer profile to match the unique cardholder information with the bank's system.

Customers, too, have access to their order details through the issuer-hosted mobile or online banking application, providing immediate answers to a transaction query for a quick and painless resolution. If a transaction isn't recog-

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nised, then the name, address, customer service number and email address, as well as terms and conditions, warranty information and return policies, may be provided to resolve the confusion created by vague descriptions on a statement.

With this robust information to hand at the rise of a customer-disputed transaction, issuers can quickly determine if the transaction should be flagged as fraud or accepted as a legitimate transaction. Data sharing can thus greatly benefit issuer and merchant, preventing costly chargebacks, loss of merchandise, and fees, which can lead to increased confidence and profits for the merchant as well, as saving banks both time and unnecessary expense of call centre investigation and office operations to facilitate the chargeback process.

But this leveraging of big data is not all about purely saving money and addressing the economics of fraud. It can generate and preserve consumer confidence and loyalty. Real-time data sharing helps resolve disputes the moment they occur, which, apart from avoiding loss of profits and resources, can help to preserve and even increase customer trust, loyalty and retention. The shared feedback loop between merchant, cardholder, and the issuer allows for an overall better customer experience. ■

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Digital transformation – the pinnacle of superior customer experience

Digital transformation, when thought out and deployed correctly, is the pinnacle of good customer experience, Jonathan Sharp asserts

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Customer advocacy has never been so important and positivity breeds positivity, so it's crucial that businesses tell a good story from the offset. If your customers experience bad service, then they will tell everyone about it, offline and online and your brand and reputation will consequently suffer.

Consistent customer service is only delivered if a company invests in communications technology that makes it easy for customers to seamlessly move through the different channels of communication. If customers have experienced a faultless and impressive service then they will tell their friends, colleagues and family of their good experience which will differentiate you from your competitors. The power of a positive story is your most valuable tool for your business and brand, as it builds momentum in the market being shared via word of mouth and across social media.

Which road to take?

Many businesses are not sure how communications technology can help them to achieve their objectives. One of the biggest challenges we are seeing is that business and IT leaders are often unaware of what is possible with communications technology. It's often a case of *"you don't know what you don't know"*, which is why working with a solution provider is beneficial to guide your business on getting back to basics and working out what your objectives, strategy and vision are. By working closely with a solution provider you will discover what you need, how communications technology can help you achieve your goals and they will explain the art of the possible.

On the same journey

Often the Board or the business leaders do not speak the same language as the IT decision makers, therefore their pitch in getting approval for communications technology may not be very effective. Key messages and the propositions are often lost in translation and the benefits haven't been articulated in the compelling manner that they should have been.

The art of storytelling or scenario setting is an effective way of breaking down these barriers. By going back to basics, you create an environment that people can identify with and understand where they want to get to and why. Everyone needs to see the vision, and how you are going to get there, and the benefits that it will deliver to the staff, the customers and the business overall.

In the driving seat

Customer experience is at the top of every company's agenda at present and the IT team can help drive it from conception, through to implementation and finally to success. Digital transformation is not for the faint-hearted and

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For [technology deployments] to be successful you need to provide effective training and change management programmes

it is recommended that you work with a solution provider to assist you in developing and managing a technology strategy and roadmap.

Solution providers should hold discovery workshops with their customers to ensure that they can guide you appropriately through the process, developing a personalised story for the customer. In order to have a seamless and successful customer experience, businesses need to adopt the right strategy, roadmap and execution to constantly meet the evolving customer's and business's requirements.

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Getting your employees on-board

A solution provider will assist you in getting your employees on-board in selecting the technology the business requires. After all they are the ones that use it and know what will improve their jobs and give better customer service. A solution provider will work closely with the different business units by involving them and empowering them to do their jobs more effectively, and to design and deploy technology that will best serve these needs. Select innovators to champion the technology and evangelise it internally, the art of connecting is about listening to employees, involving them and working together as a team so they believe in your plan and your vision.

If your employees believe in you, then your customers will.

Often technology deployments fail due to inadequate training. For it to be successful you need to provide effective training and change management programmes, which a solution provider can assist you with.

Gearing up to an innovative culture

Embracing and understanding change is a huge part of digital transformation. For instance, there will be some employees who prefer to communicate by phone, and some who prefer IM; you need to provide choices to both employees and customers and produce seamless touchpoints for both.

It is important to not only embrace change but to also encourage an innovative culture in your business where employees and customers feel they are listened to, and their ideas are being taken on board.

Integration

If a business doesn't take a holistic approach, then the technology project fails because it becomes siloed and therefore doesn't integrate with the existing technology and the back office. The approach with technology communications should be organic so the communications and customer experience is fluid improving business processes and customer service.

Technology solutions are now much more complex and often consist of several vendors, therefore presenting more challenges to the IT department. A multi-vendor solution can also be costly and cumbersome to manage. Solution providers have the expertise in integration to ensure the solution is seamless.

Digital transformation – the pinnacle of customer experience

Digital transformation, if thought out and deployed correctly is the pinnacle of good customer experience. Take time to get back to basics and plan your objectives and strategy with the assistance of a trusted solution provider, ensure that you involve and listen to your employees and customers and design a technology solution that will result in improved communications, improved business processes and a successful customer experience.

Remember, success breeds success; get in the driving seat! ■

Jonathan Sharp is a Director at Britannic Technologies, an award winning provider of telecommunications solutions, systems integration and managed services to customers worldwide

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