

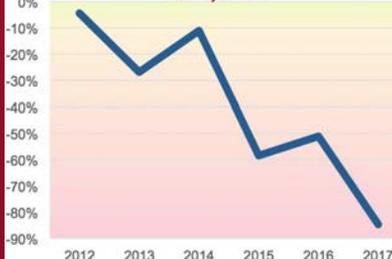
Global Agenda Index 2018

While old super powers remain stuck in negative narratives, new leaders and concepts win attraction

SDG Lab, Davos, January 24, 2018

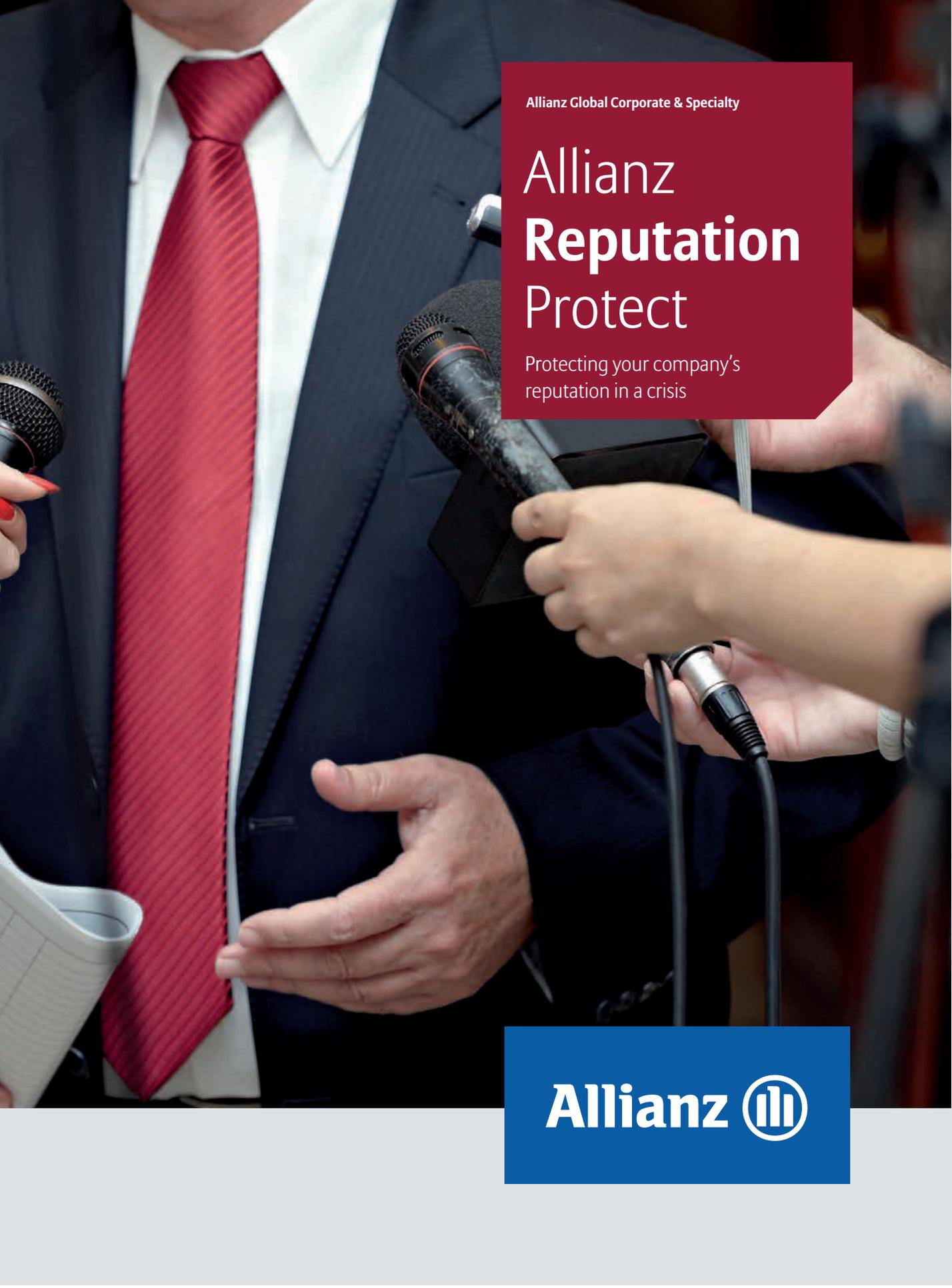
- Neither the U.S. under Trump, Russia under Putin nor Turkey under Erdogan were able to convince the world of their leadership in 2017.
- Emmanuel Macron's victory in France and the weak response of the EU towards Brexit presents a continent stronger than before
- United Nations Sustainable Development Goals have the potential to become the new game plan: 300 out of the largest 400 corporations in the world commit to these global goals in 2017.

Global media: Tone on cyber risks in the U.S. on international TV news and in business media, 2017



Global TV: Tone on global leaders on international TV news





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Global Agenda Index 2018

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1. **Executive Summary**
2. Methodology: Scenario Building
3. Expert Voices
4. Drivers of Global Change
 - i. Political Challenges: Shifts in global power
 - ii. Cultural Challenges: Religious bias and misunderstandings
5. Agenda Setting
6. Global Youth Poll
7. Appendix

A shifting landscape

Global developments:

- With Trump starting his presidency in the U.S., world leaders and institutions illustrated collective intelligence: none of his decisions or provocations caused overreactions. Rather the contrary was true: individual people as well as governments and institutions reacted in clear, reasonable ways. Alternatives became obvious and the new world order transparent. In the 21st century, there is no longer one power that can dominate the rest of the world. 2017 saw the U.S. president declare the end of U.S. participation in the Paris Agreement and within one hour, enough mayors of U.S. cities declared the opposite. Within America and outside of it, a new system of checks and balances became apparent.
- In early 2017, it was expected that the elections in Europe would push the continent to the far right, the opposite took place. Neither Geert Wilders in the Netherlands, nor Marine Le Pen in France, nor the AfD in Germany could win national elections. Emmanuel Macron's movement became the driving force for France and beyond. The European Union managed to overcome the shock after the referendum in the U.K. and is now framed in the best way since 2000.
- Confrontation as concept was no longer perceived as successful strategy. Turkey realized it was being more and more isolated. North Korea understood that at the end of the year it needed to engage in dialogue. Cooperation expressed in fair trade agreements remain the most accepted format for how government and regions will define their interactions in the future. Isolation and fragmentation are perceived as options only in those parts of the world where the remaining powers have not yet managed to find a way to dialogue with the next generation or the regional powers. The stagnation in which Spain finds itself is one of too many of these regional examples.
- The general conclusion for 2017 and perspective on 2018 seems to be the acceptance by multiple stakeholders from business to education and from Millennials to regional governments: that egoism is no longer an accepted way of doing politics, business, or education. The overarching spirit of win-win expressed in the Sustainable Development Goals signed by 191 heads of state in September 2015 has become a soft power attracting new leaders of society in all age groups faster than could have been expected.

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Improving scenario-building as a global tool

Taking advantage of the Agenda Setting Theory

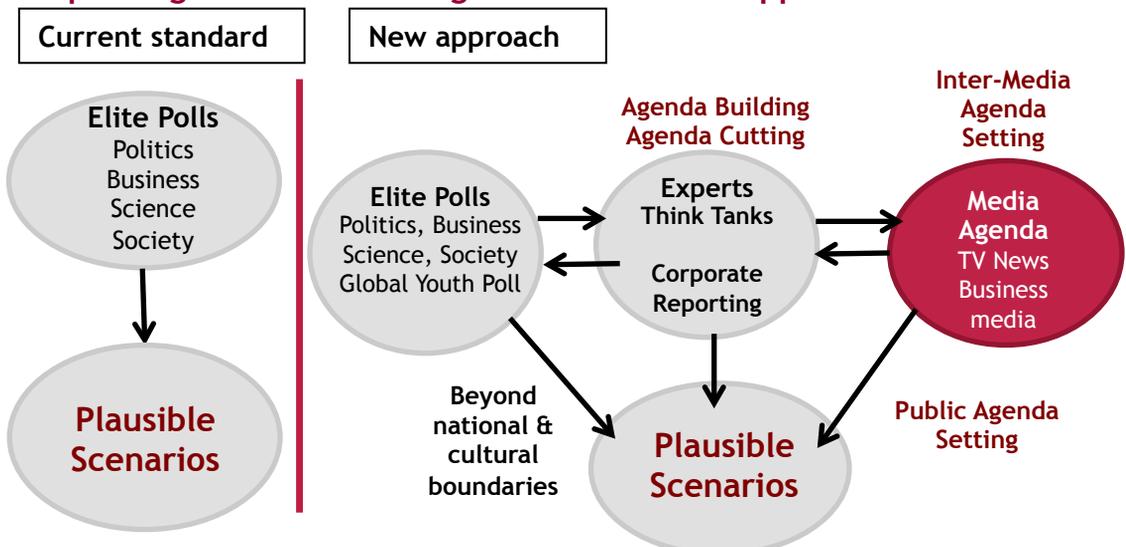
The UNAI and Media Tenor have partnered to develop a Global Agenda Index that goes beyond conceptions of nationally-based analysis to map and evaluate those global environmental issues that matter.

By adding applied agenda setting theory to the current standard, we are able to challenge existing “truths” and paradigms which are limited by nationalistic perspectives. Through ongoing international media analysis and leading analyst quotations, a more global perspective is considered in order to create a

more robust future scenario and identify the impact of game changers in the arenas of both politics and business.

In this new approach, the opinions about our future from 200 heads of state, parliaments, top CEOs, university presidents, and media leaders have been collected. Leaders had the opportunity to not only vocalize their expectations for the next five and ten years, but to also see how these opinions interact with the agenda of the mass media. In the future, we will also include the results of the Global Youth Poll on a quarterly basis.

Improving Scenario Building: A multi-method approach



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4. Drivers of Global Change
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 - ii. Cultural Challenges: Religious bias and misunderstandings
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6. Global Youth Poll
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The new roadmap of the SDGs helps leaders reduce errors on governance

Roland Schatz, Founder and CEO of Media Tenor International

When we analyze the causes of the largest failures in recent decades, we can agree that they did not happen due to lack of indices and data. Enron, the subprime crisis, Fukushima, and Brexit all happened mostly because those in charge framed alerts and relevant data as not relevant.

For at least 40 years we have been aware (thanks to Arthur D. Little and others) that, at most, 30% of all mergers create higher value afterwards than if the merged companies had been separate. This is true from a shareholder perspective, an employee perspective, and often believe.

even a client perspective. But against this strong empirical data, CEOs and CFOs continue to decide that their merger ideas will succeed without anyone asking them what they are doing so as not to end up as another example of those 70% who create less value for shareholders and employees.

Aside from this, it is common wisdom that every success of any company in the world is based on two pillars - a great team and a strong awareness of products. Still, two departments are well thought through and that it is perceived as the least respected in almost all companies: human resources and media relations. Over which are a solid basis for every new offering.

the past 30 years no one could see the start of any strong movement in business schools to change this.

We could focus on these three aspects in greater depth, but as the purpose of this text is to underline the call for more leadership we will move on. From the start, most companies need credit from those who have never heard about the company's core idea. Those in need of credit have to be perceived as credible, otherwise no investor will sign a check. Not surprisingly, both the words credit and credible have their origin in the Latin word *credo* -

In other words, without a clear and deep understanding of who one is and what one wants to achieve, credibility will not increase amongst those who may or may not listen. Therefore this *credo* has to have all the elements of the one composed by Ludwig van Beethoven in his compelling and convincing *Missa Solemnis*. The audience must be captured by the energy in this performance of trust in the one opportunity presented. There must be no doubt that this opportunity is well thought through and that it is perceived as a result of long lasting struggles, challenges, and failures -

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The audience does not take too long to realize that more “hidden champions,” that so often become lasting world market leaders, are on the way. While Austria or Switzerland -- small countries in the heart of Europe -- can proudly call 118 and 136 companies respectively World Market Leaders (companies reaching the highest share of all that are active in this market), there is one surprise. The U.S. did not manage to become home of more than 306 of these World Market Leaders - while Germany hosts more than 1500! And this has been true not only for the past five years, but the last three centuries.

How is it that Europe outperforms any other continent in the category of having companies that achieve the highest revenues in their niche by factor of ten or more? Because the *credo* of these corporate leaders in “good old Europe” is to believe in their products, missions, and teams to such a degree that they not only enjoy building these companies, but keep them for life before handing them over from generation to generation. This is in total contrast to those school books which seem to ask for an exit strategy even before the first cent is earned.

Where leadership is based on solid *credo*, KPIs and other relevant governance metrics are not only transparent, but easy to handle. They serve as supporting tools in the best sense of critique: constructive, challenging, clear. They help speed things up in times when a phlegmatic approach seems to dominate and they call for a break when it becomes clear that the engine has a tendency to overheat.

It is no surprise that Johan Sebastian Bach called his 48 masterpieces “The Well-Tempered Clavier.” While respecting all relevant numbers, metrics, and rules it never risks losing its purpose - serving and inspiring the audience. There is probably no other person who has been more productive, more highly creative, and more exceptional at serving than this mastermind. Leonardo da Vinci looks small against this musician, who never stopped reaching higher levels of creativity and productivity. Reaching the age of 65 in the 18th century was already remarkable, but he put the “The Art of Fugue” to paper while blind! He also taught and shared this know-how with the next generation of composers (of his children, five were

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well-known in this regard) and the members of the famous Thomaner Choir in Leipzig. All this combined made him a role model for centuries. It remains no surprise then that the origin of resistance against the communist regime and the starting point to bring down the Berlin Wall was this city which was influenced by Bach like no other.

It was difficult to adapt the concept of Bach and Beethoven onto today's world of business, politics, and science. But then 191 heads of states got together in New York on September 25, 2015 to sign a roadmap for cooperation in order to reach 169 Sustainable Development Goals no later than 2030. All of a sudden every teacher, every manager, every politician, and every other professional was given access to a "Dummies" version of Bach's "The Well-Tempered Clavier." These SDGs provide in all languages a basic compass that defines the rules of interaction into 4 respect levels:

Level 1: You need to respect yourself - be healthy, educated, etc.

Level 2: You can't respect yourself without respecting other people.

Level 3: Respect nature otherwise

you won't be able to live your own life.

Level 4: Respect those institutions which deserve your respect.

Playing Johann Sebastian Bach or listening to his music teaches these respect levels. Since the 191 heads of state signed the SDGs, everyone can understand the concept of giving every voice a relevant role even without going into the details of polyphonic baroque music. Simply, every voice counts. And most important are those phases where one voice is silent. This shouldn't be misinterpreted as doing nothing - in contrast, it is the most active part for a musician. A musician needs to be good not only in the moment they stop playing, but must go on to follow the other performers in order to not miss the next part, where their own voice needs to be heard again by their fellow musicians as well as the audience.

Only one question remains at the beginning of 2018 as we look back to 2017 and, more importantly, ahead towards 2019 and even 2030. When the heads of state signed the SDGs, they signed as the first global goal SDG1 - No Poverty.

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Back when the rules of the Cold War were still perceived as the only reasonable ones, no one would continue reading, as it would have seemed impossible to reach this goal by 2030. But imagine, among these heads of state who signed on behalf of their people, were probably those who started to think that now is the time to move away from the concept of 'win-lose' and to 'win-win' as a leading principle. And, while one might always think that some head of state might not be serious in signing a paper, how likely is it that all 191 got together and decided to sign without thinking, as if their people wouldn't hold them accountable?

Let me close with one example showing how far one can get based on shared principles, trust, and transparency. If someone were to tell you that a huge symphony orchestra is able to perform a complicated Beethoven symphony at the Beethoven Festival in Bonn without a conductor, you would send that person home for pulling your leg, just as you send everybody home who declares the world has the potential to eliminate all poverty. Well, speak to the Deutsche Kammerphilharmonie. A few years

ago they were supposed to perform Beethoven on stage in the evening when they received a call from their conductor telling them that he was too sick to conduct. They got on the phone to try to get a replacement - but it was impossible. They ended up performing without conductor for the first time, and it was a tremendous success. Why was this possible? Because the members of the orchestra started playing together three years ago and stayed as members of the same orchestra. Actually, they are the shareholders of this orchestra. They happen to not only know each other as professional colleagues but also as business partners.

Not only do the heads of state know each other, but the 169 SDGs they signed are the result of a five-year conversation and intense negotiations amongst them and their different expert teams. Never was the interaction between individual countries and the different age groups stronger than in 2015. Yes, there is still a huge difference between the Deutsche Kammerphilharmonie and the rest of the world. But trust me... when these

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musicians got together the first time in the 1980s and decided to stick together and even form a business called music together, nobody would bet a dime on them. But today they are the most respected orchestra in the world, and not only when it comes to performing Beethoven. They advanced to other composers like Brahms and Schumann. This was never achieved before.

Leadership needs governance, but governance makes zero sense without leadership.

The United Nations Sustainable Development Goals (SDGs) and World Order

James Bindenagel

World Order is Unraveling.

Globalization, digitalization, and technology change have contributed to the erosion of support and trust in governments. Inequality arising from globalization makes winners of developing countries, notably Asia, at the expense of jobs in the developed world as Branko Milanović argues in his book *Global Inequality: A New Approach for the Age of Globalization*.

While Silicon Valley has brought new products to shape our lives, digitalization has disrupted the labor market as it transforms careers into “gigs” as Steven Hill describes in his book *Raw Deal: How the “Uber Economy” and Runaway Capitalism Are Screwing American Workers*. The digital transformation of society will devastate traditional work. Technological change over the past decades has replaced many jobs with robots, displacing workers.

The perfect storm of these economic shifts has drawn in the violent conflicts of Islamic State terrorism, the Syrian Civil War and Russia’s war of aggression in Ukraine. The South China Sea is the conflict zone between China and its neighbors. These forces of change challenge the state-based international order. Governments have lost control over events that threaten jobs and security. Indeed, when states increasingly stress national interests over the multilateral pursuit of a more stable and secure world for all, this endangers the very core of international institutions.

Nationalism, populism, and authoritarian rule offer an alternative to democracy, rule of law, and respect for human dignity

that define the international liberal order. The idea of liberal order - the West -- must be sustained or in this unraveling of the world order, it will disappear. Nevertheless, these considerations do not rebut the need for a stronger engagement, if national contributions are to serve both national interests and the public welfare.

Sustainable Development Goals (SDGs)

One answer came in September 2015, when the UN General Assembly adopted a new and ground breaking agenda to guide development efforts for the period 2015 to 2030. The 2030 Agenda for Sustainable Development sets out 17 Sustainable Development Goals (SDGs) and 169 targets, which jointly constitutes a comprehensive plan of action to eradicate poverty and ensure sustainable development.

The Human Rights Advocate article argues that SDGs focus on three dimensions of world order and sustainable development: social, economic, and environmental, as well as important aspects related to peace, justice, and effective institutions. They go on to add that the SDGs goals have been criticized for being contradictory, because in seeking high levels of global GDP growth, they will undermine their own ecological objectives.

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<https://sustainabledevelopment.un.org/EnergyConference/about>

(<http://us.macmillan.com/rawdeal/stevenhill/9781250071583>)

<https://sustainabledevelopment.un.org/EnergyConference/about>

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It has also been noted that, in relation to the headline goal of eliminating extreme poverty, “a growing number of scholars are pointing out that \$1.25 is actually not adequate for human subsistence,” and the poverty line should be revised to as high as \$5. Other critics argued that the 169 target indicators for the SDGs are too many, calling them “sprawling,” “misconceived,” and “a mess” compared to the Millennium Development Goals. It also criticized the goals for ignoring local context and promoting “cookie-cutter development policies.”

World order in the current state-based system needs states to implement the SDGs. The recently concluded COP23 review in Bonn lacked American government commitment to implement climate goals.

Donald Trump’s announcement that the U.S. will withdraw from the Climate Agreement tests the sustainability of SDGs and also American democracy. If the federal American government fails to commit to climate change, domestic parties below the federal level - the states, cities, businesses, Ngo’s, and universities will determine America’s global role in reaching climate targets.

Governors, mayors, and chief executives across the U.S. declared that whatever the U.S. federal government might do, their cities, states, and businesses would make sure the goals set out in the Paris agreement would be met.

California Governor Edmund G. (Jerry) Brown Jr. is undoubtedly the best Governor to lead in that effort. He is in

Europe and delivered keynote remarks at a climate summit organized by the Pontifical Academy of Sciences at the Vatican before coming to Bonn. At that meeting, religious leaders declared “that governments and other stakeholders should urgently undertake the scalable and practical solutions ... All nations should implement with urgency the global commitments made in Agenda 2030 (including the Sustainable Development Goals) and the Paris Climate Agreement.”

The international community should not underestimate the network of more than 2,580 mayors, governors, CEOs, and college presidents calling their effort “**We Are Still In.**” They are committed to supporting climate action to help meet the U.S. emission reduction targets under the Paris Agreement. They will work to ensure the U.S. will fulfill America’s commitments, despite a long tradition in American foreign policy that has included unilateralism, protectionist moves, and periodic calls for “America First.”

Can America, without the federal government, meet its climate goals as set out in the Paris agreement? Yes, the U.S. is still an ally in the fight against climate change. Simply stated, America’s Pledge brings together private and public

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Human Rights Advocate, “The New World Order: The Sustainable Development Goals (SDGs)”, March 27, 2017.

<http://www.pas.va/content/accademia/en/events/2017/health/declaration.html>

The United Nations Sustainable Development Goals (SDGs) and World Order

James Bindenagel

sector leaders to ensure the United States remains a global leader in reducing emissions and delivers the country's ambitious climate goals of the Paris Agreement.

First, the role of Governors, who have joined in the effort to fulfill America's commitments, is critical. California governor Jerry Brown set off for China the day after Trump's decision, promising to strengthen agreements with Beijing on promoting clean energy solutions. More than 30 mayors, three governors, and more than 100 business leaders have prepared a statement committing them to meet the US greenhouse gas emission targets under the accord.

States are playing a critical role in the fight against climate change – through investments in green infrastructure, ambitious renewable energy commitments, and efforts to reduce carbon pollution. Several actions are underway, including:

- Under 2: Signatories commit to reducing their greenhouse gas emissions 80 to 95 percent below 1990 levels, or limit to 2 annual metric tons of CO₂-equivalent per capita, by 2050.
- The United States Climate Alliance is a coalition of states committed to the goal of reducing greenhouse gas emissions consistent with the goals of the Paris Agreement.
- The National Energy Efficiency Registry (NEER) is a web-based platform that helps states document achievement of energy and environmental goals, disclose regulated entities' compliance activities, and

drive voluntary investment in energy efficiency and energy and water conservation initiatives.

Second, cities have developed city-to-city diplomacy. The C40 Cities Climate Leadership Group that led the push for the Paris climate agreement is an example of new formal global networks created among cities. According to research by Michele Acuto of University College London, there are more than 200 such networks.

Los Angeles Mayor Eric Garcetti promised to adopt it in Los Angeles. New York's mayor Bill De Blasio promised cities would take matters into their own hands. Mayors and governors must forge global networks to solve local problems.

In Chicago, the Global Philanthropy Partnership, where I serve on the board, is working with the Carbon Neutral Cities Alliance, the Urban Sustainability Directors Network of 125 cities throughout the United States and Canada. They have for several years improved energy efficiency by sharing plans on district heating, green roofs, and retrofitting buildings.

There are several examples of steps cities and counties are taking to tackle climate change include expanding the use of renewable energy to adopting aggressive emissions reductions targets and investing in sustainable infrastructure. They are organized as well with:

- The Global Covenant of Mayors for Climate & Energy: The largest global platform for sharing and building on climate action in cities, it includes over 125 cities in the United States, with more than 650 globally. Signatories

The United Nations Sustainable Development Goals (SDGs) and World Order

James Bindenagel

commit to reducing greenhouse gas emissions, enhancing resilience to climate change, and tracking their progress in an open, transparent way that fosters learning among peers.

And

- Climate Mayors: A network of U.S. mayors committed to action in their communities, as well as working together to secure supportive policy-making for ambitious climate action at the federal and international level. More than 350 Climate Mayors have signed a pledge to do their part to meet the Paris Climate Agreement.

Businesses are driving the transition to a low carbon economy; nearly half of America's largest companies have at least one climate or clean energy target.

There are many ways for businesses to integrate emissions-reductions strategies into their operations. Philanthropies such as Bloomberg's group support citizens across America that are taking action to fight climate change. Here are just a few:

- Adopt science-based targets: Businesses across the country are incorporating emissions-reduction strategies into their growth strategies to keep global temperature below 2°C. Science-based targets provide analytical and technical assistance to support companies through their transition to a low carbon model.
- Commit to 100% renewable energy: RE100: Join over 100 companies and commit to 100 percent renewable electricity and accelerate the transition to a clean energy matrix.

- Commit to improving energy productivity: EP100: EP100 is a global initiative for businesses that want to reduce their carbon footprint by doubling energy productivity, and lower their energy costs at the same time.

- Renewable Energy Buyers Alliance: Switching power sources can be hard to navigate. REBA facilitates the transition to renewable energy by connecting corporate demand to renewable energy supply.

Also Investors, too, have a role to play. They can:

- Join the Portfolio Decarbonization Coalition: The Portfolio Decarbonization Coalition is an initiative to drive carbon emissions-reductions by mobilizing investors committed to gradually decarbonizing their portfolios.
- Sign the Montréal Carbon Pledge: By signing the Montréal Carbon Pledge, investors commit to measure and publicly disclose the carbon footprint of their investment portfolios on an annual basis.

Finally, Europe and Germany can contribute to the American effort to implement SDGs as well. It may seem useless to try to convince the U.S. administration of the importance of the Paris Climate Agreement, but it is equally wrong-headed to isolate President Trump on international climate policy.

Here in Germany, a group of transatlanticists, called for Germany to have a strategy for America (Die Zeit, October 12). Along with my German

The United Nations Sustainable Development Goals (SDGs) and World Order

James Bindenagel

colleagues, we addressed climate change and urged ways to manage responsibly conflicts with the US. We warned against turning constant criticism into dogmatism.

We advised that after having cooperated on solvable issues and setting aside unsolvable problems for now, to turn to policy areas that require responsible management. The international community should seek concrete steps forward in climate protection together with the United States; i.e., states, cities, businesses, Ngo's, and universities.

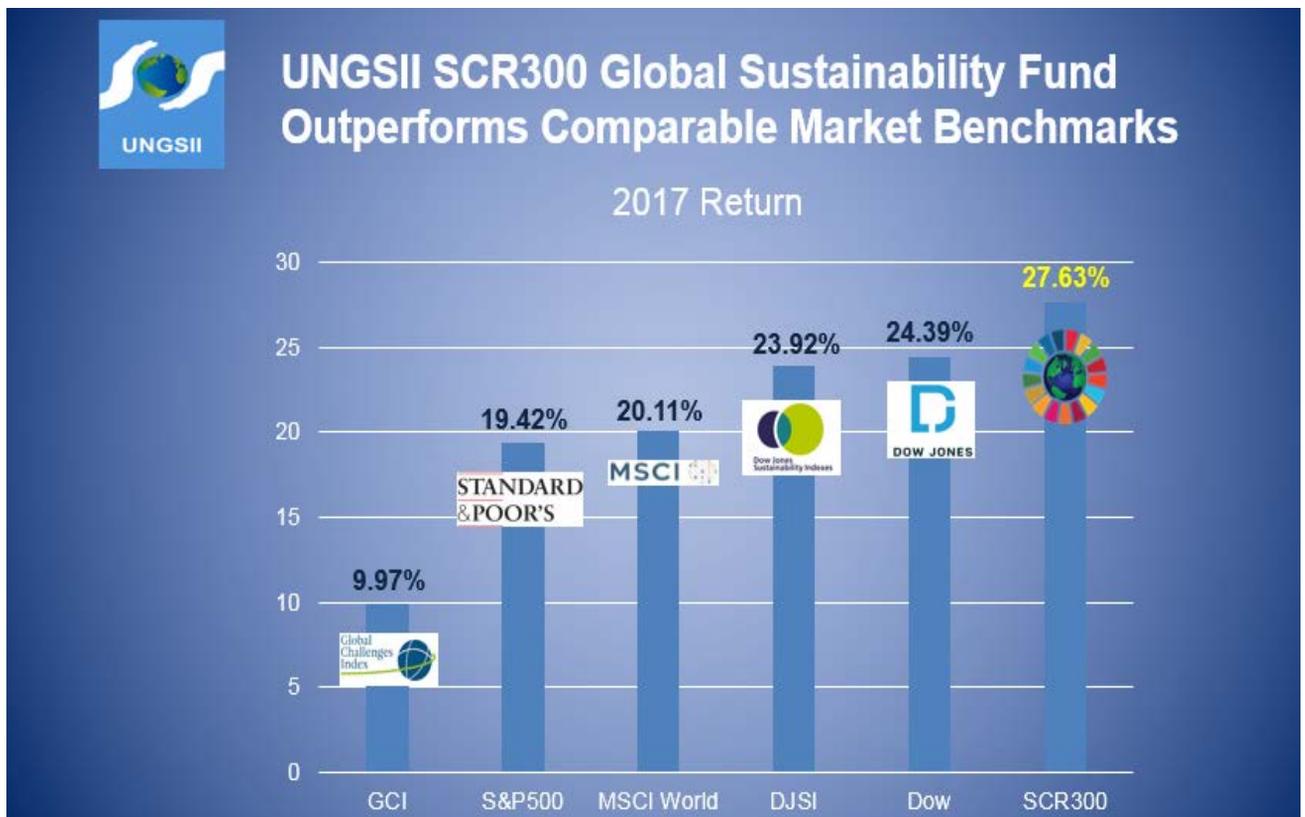
For instance, Germany does not need President Trump to engage with American partners who are interested in climate policy cooperation. Some states (not just California) and large cities are already rapidly reducing their CO₂ emissions. Political, scientific, and technical cooperation with local partners is possible.

There is no shortage of strong allies on climate policy in the United States, in the private sector as well as in civil society. Here, the key is to be proactive, to invest money, and to build networks that will endure and shape the future after the Trump Administration.

In the end, it will be America's scorecard that reveals how far the U.S. has come to meet U.N. SDG commitments, even without the federal government. And, yes, this is how democracy in America and the liberal world order are sustainable.

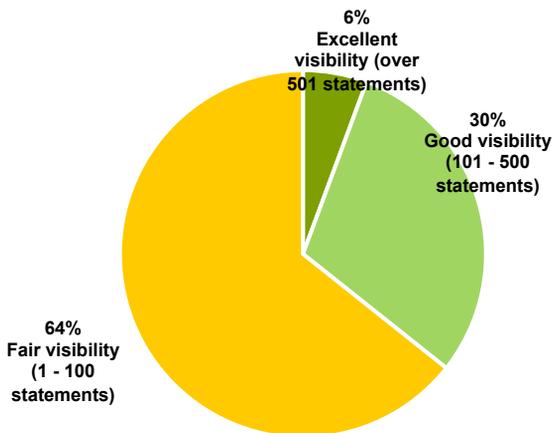
UNGSII SCR300 outperforms comparable market benchmarks

- The UNGSII Sustainable Development Goals Commitment Reports (SCR) has thus far shown a rate of return of 27.63%, more than three points higher than its closest competitor. This highlights that responsible, socially conscious business is also profitable business, providing unique opportunities to support progress on the SDGs while also
- making an investment profit. Because responsibility and sustainability improvements are always possible for all companies, the multiple data sources and regularly updated nature of the UNGSII SCR300 means its companies are always at the forefront of the business and investing advantage offered by supporting the SDGs.



Many companies are already driven by the SDGs

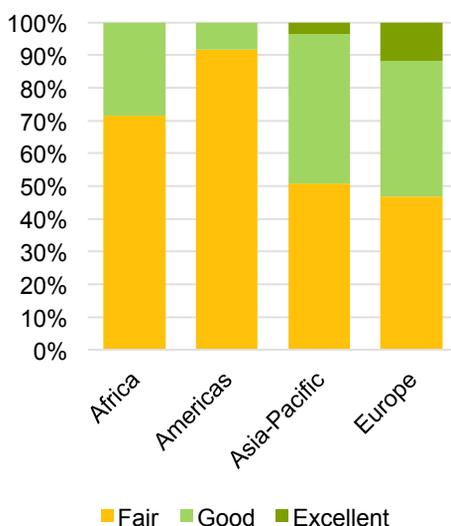
Overall share of visibility of the SDGs



The 300 top companies analyzed already talk about their commitment to the SDGs in their annual reports. This presents multiple opportunities. Impact investors have the opportunity to make solid profits while also helping the best performers in the categories they are most committed to stay best in class.

6% of companies are demonstrating exceptional commitment. Not only are they committed to the SDGs, they refer to them by name and address all or most of them in their annual reports. This helps to spread awareness and enlist others in helping to improve the planet. Focus on the SDGs and companies that contribute positively to the world will only continue to grow.

Overall share of visibility of the SDGs by origin of company



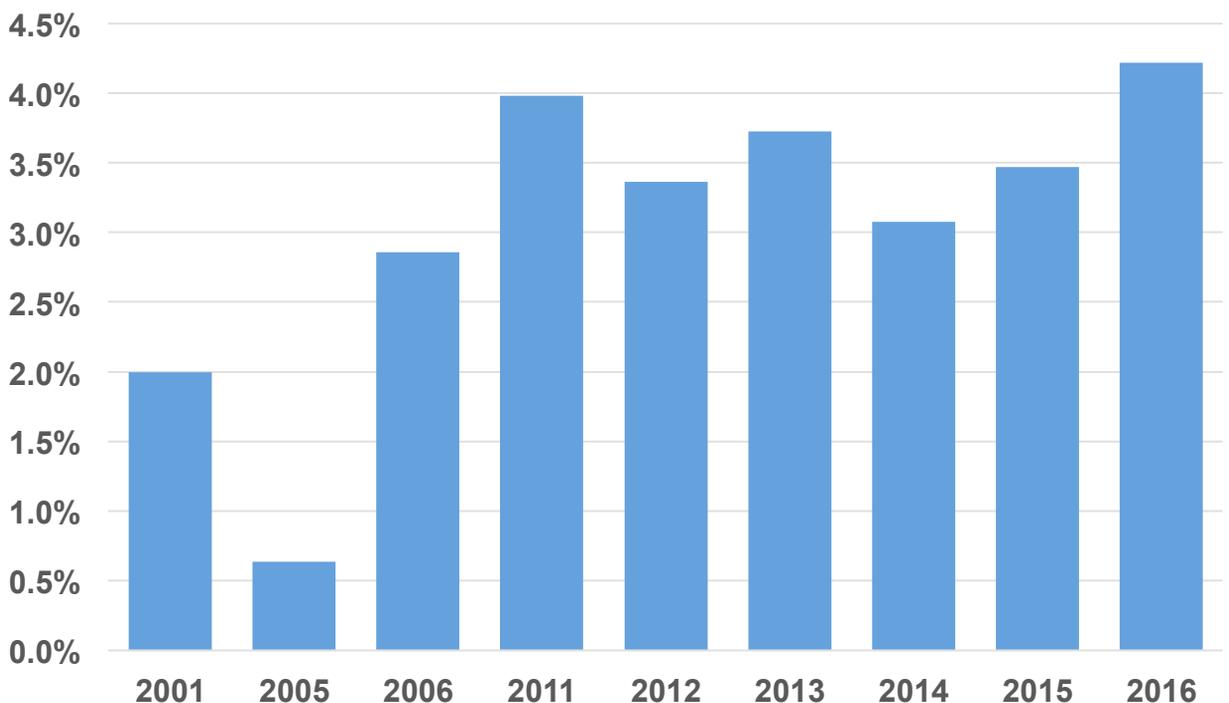
European companies perform the best in regard to the visibility of the SDGs in the annual reports of their companies with over 50% of European companies commenting on the SDGs at a level of good or excellent. This is ahead of other regions where discussion of the SDGs is less frequent. In particular this is markedly different than in the U.S. where the majority of companies do not reference the SDGs at a significant level. This is due to a number of factors, including a trend towards only producing a 10-K and not a magazine-style annual report in the U.S., as well as public sentiment about both the U.N. and some of the key SDGs (e.g., Climate Action).

CSR/ESG visibility grows in annual reports

The level of visibility for CSR/ESG topics in annual reports has grown steadily since 2001. This shows that companies are aware of the importance of these issues to stakeholders and profitability. Now with the SDGs in place, companies have a clear way of discussing key responsibility issues using a framework that is consistent across

industries and businesses. This allows investors to make direct comparisons and for stakeholders to track progress. Prior to the SDGs, it was easy for companies to only address CSR issues that they felt had a direct relationship to their business, but the SDGs send a message that overall societal well-being matters.

Share of visibility on CSR/ESG-related topics in corporate annual reports of the DAX 30

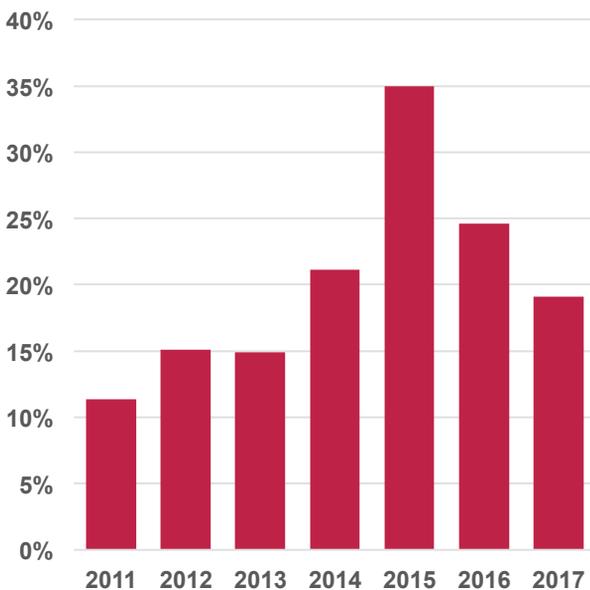


TV and business media offer an important check on other CSR reporting

TV and business media have long reported strongly on CSR issues, but this has mostly focused on scandalization. Without the presence of “constructive news,” the media do not necessarily cover corporate initiatives about reducing inequality, improving cleanliness of water, or eradicating poverty. Instead, coverage focuses on where companies have failed - such

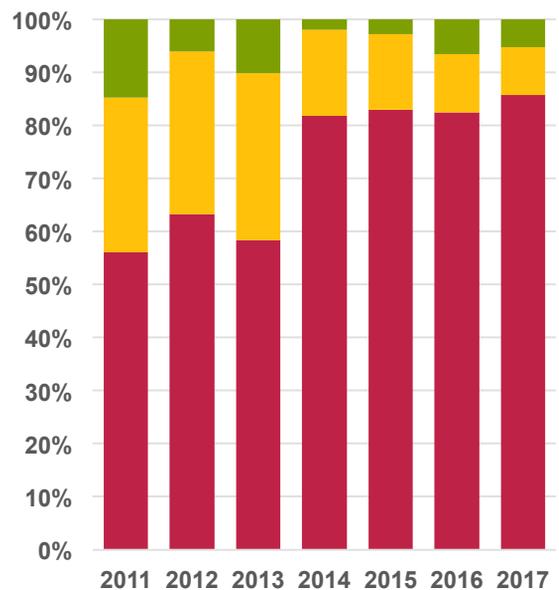
as the recent emissions scandal. This data is essential, but the full picture of performance can only be achieved through combining both corporate self-reporting on the SDGs in the legal document that is an annual report and media coverage. Where a discrepancy in tonality exists, the SCR300 score is weakened and stakeholders are advised to further investigate.

Share of TV and business media coverage on CSR topics for the DAX 30



■ Share of coverage on CSR topics

Tone of TV and business media coverage on CSR topics for the DAX 30



■ Negative ■ No clear tone ■ Positive

DAX 30 performance in the SCR300 varies

When each DAX 30 company was scored for SCR inclusion based on 2016 results, scores varied, with Adidas and Continental being rated excellent with a 75 and 80 respectively out of a possible 100 points. Eleven other companies were rated good, and seven others were rated fair. Some companies in the SCR300 faced risks around specific areas (e.g., VW and the

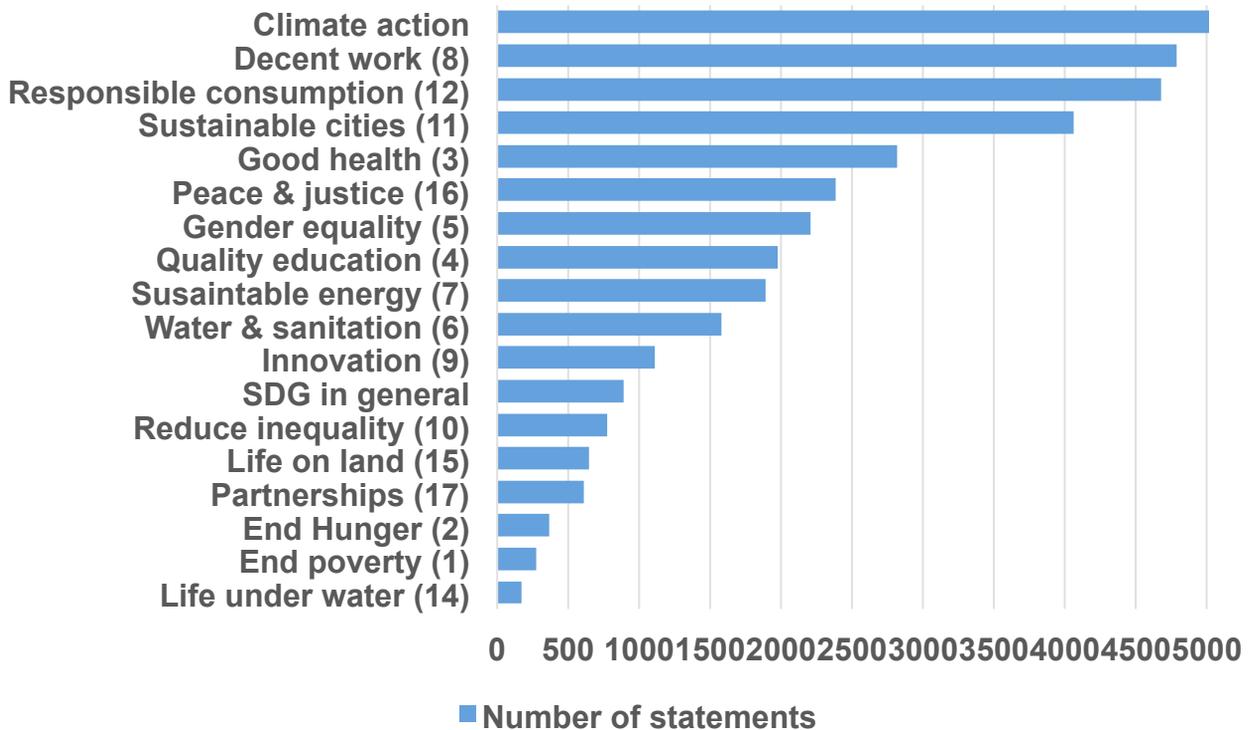
emissions scandal), but performance on other, unrelated areas allowed them some level of achievement even as opportunity for improvement remained. Discussion of multiple SDGs was key to companies reaching the good or excellent score category. The excellent category could not be reached without positive media support for the SDGs.

Fair		Good		Excellent	
Linde	10	Deutsche Bank	40	Adidas	75
Siemens	20	Deutsche Lufthansa	40	Continental	80
Daimler	20	Henkel	45		
Allianz	20	Deutsche Post	45		
Deutsche Börse	30	Merck	50		
Bayer	30	Fresenius Medical Care	50		
Bilfinger	30	E.ON	50		
		BMW	55		
		Deutsche Telekom	60		
		VW	60		
		BASF	65		

2016 SCR300 Scores for DAX 30 Companies (max. 100 points)

Climate action dominates mention of the SDGs

Visibility of the SDGs



Climate action was by far the most visible of the SDGs. This was due to several factors, including legal requirements in some regions to report on greenhouse gas production and control. The visibility of climate action also showcased the urgency of this topic and reflected consumer expectations that companies behave responsibly when it comes to their impact on the environment. Regional differences related to the acceptance of climate change as a

crisis were, however, a factor. While some industries necessarily addressed this topic more than others - i.e., automakers, energy producers, and oil and gas companies - concern on this topic was visible across all industries. Decent work and responsible consumption are ranked second and third, closely followed by sustainable cities and good health. A few SDGs have extremely limited visibility, showcasing opportunity for companies that step forward.

Interview with Christian von Reventlow Chief Product & Innovation Officer (CPIO) at Deutsche Telekom

You have spent all your life helping to turn new ideas into successful products - you have been with Siemens, Intel, Avaya, Nokia, and Deutsche Telekom as Chief Product and Innovation Officer in charge of keeping companies alert and open minded so as to not miss the next hot thing. While corporates are looking back at an unseen growth paths during the few last years, there's an impression that R&D is facing more and more skepticism. What went wrong?

CvR: I believe there is a hidden, widening gap between organizations able to embrace the future and those dismissing research and living in the present.

Why?

CvR: We have three impacting factors: One, the overall economic environment. Two, the stealth character of coming exponential technologies - until they suddenly hit hard, and three, the general difficulty of translating research into meaningful business results:

1. The overall positive economic environment allows organizations to produce positive financial results even if they are not investing in the future. Or just talking about innovation and seeing it as marketecture. These companies are often seen as value stocks, delivering predictable financial returns. True, but only till disruption through exponential technologies hit. As these organization are often rigid and process driven they are unable to respond.
2. The stealth character of exponential technologies: Driven by Moore's law of

exponentially growing computer power, a slew of new technologies are appearing called exponential technologies: Artificial intelligence, robots, digitization (of everything including money, contracts, and trust), delivery drones... Every industry is or will be impacted. The stealth character of exponential technologies stems from the fact that exponential is difficult to imagine for humans. First there is a phase of deception, where it seems to have no impact, till the growth phase creates tremendous unforeseen impact. Some industries like the taxi industry with Uber have seen major impacts. Those dismissing the relevance of research are mostly in industries that have not seen an impact yet. The wakeup might be disastrous for the impacted firms.

3. The difficulty of translating research into meaningful business results: Today the word R&D (Research & Development) is often interpreted as Research only. It recognizes the difficulty of translating research results into meaningful product development - creating value for the corporation. Throughout my career, I have been applying answers to this issue. These vectors turn out to be key:
 - Predict the future: Besides asking technologists, apply a multitude of outside-in techniques - design thinking, sci-fi studies, kids & teenagers building the future...
 - CEO support: Protect the new and drive a balance of short and midterm fund allocation.

Interview with Christian von Reventlow Chief Product & Innovation Officer (CPIO) at Deutsche Telekom

- **Ambidextrous setup:** Translate research results into new business, AND spend 80% of the effort on value for the core business. The latter will buy support by the powerful P&L owners in the organization.
- **Focus:** Run a limited number of highly visible initiatives. Recommendation: 4+1+2: 4 large short-term initiatives creating value for the core business (80% of the total effort), 1 midterm (10% of total effort) and 2 long term initiatives (again 10%).
- **Dual-Citizenship:** Make P&L owners members of the innovation leadership team, co-owning the 4+1+2. Similarly, business and innovation co-leading the innovation projects .
- **VC style funding logic:** Quarterly deliverables. While giving the often-powerful finance organization a feeling of control.

The comments above can be translated into a meaningful action plan for every company in every industry. Delivering balances short and mid/long term results.

One of your babies is the development of real time navigation systems. Here.com was and is a tremendous success. Looking back, what would you have done differently?

CvR: At that time, we had an excellent

vision of the future. Going beyond basic cartographic maps, we had envisioned augmented reality as an annotating overlay to reality. And built a smart phone app as an implementation, giving users unprecedented information on your surroundings in major cities. Looking back, I should have started a standardization initiative. Plus build a toolkit, creating a browser with a language like HTML. It would have been a standard to describe what is called the digital twin - the digital representation of reality.

Why?

CvR: A standard with a browser and toolkit would have allowed everybody on the planet to build their own augmented reality annotation or descriptions of reality. And might have created a platform effect driving global scale.

Do you believe now is the time to start this initiative?

CvR: At the latest when augmented reality glasses replace smart phones someone will define this standard. That's at most 2-4 years out. Consequently, now is a good time to start such a project.

Our data show the growing skepticism towards Silicon Valley that those working in the U.S. seem to have no sensitivity when it comes to finding the right balance between privacy and corporate needs. Any views on this?

CvR: At Deutsche Telekom we did a design-thinking study with 373 digital natives age 10-16 in five cities on this planet. We learned that they are highly interested and aware of data privacy. And imagine

Interview with Christian von Reventlow Chief Product & Innovation Officer (CPIO) at Deutsche Telekom

that they can control what of their personal data gets shared with who. When challenged, they commented they are actively managing this already today. With carefully curated Instagram appearances and Snapchat being used for the casual non-permanent information. This indicates - I believe - new business models appearing: a different way to pay for managing data beyond advertising.

What are you doing to inform different stakeholders better?

CvR: Some of them we already discussed as part of the vectors for transforming research into business results. In addition:

- As a source of inspiration: Invitations for senior researchers, professors of the Singularity University, and world leading thought leaders to present to our leaders.
- Garage session: Our board and executive team was invited into the “garage” of the development team to experience hands on the state of product development
- Innovation days: Inviting our partners and all people interested in innovation for a whole-day of information exchange, joint brainstorming, and envisioning the road from today to the future
- Product and innovation board: a monthly meeting of our board and the P&L leaders to review and update the roadmap, jointly decide on funding of innovation projects and reflect on the state of things

DT is among those companies ranked best in the implementation of the Sustainable

Development Goals - you must have found a way to bridge the gap between aiming for the technical possible and the best for society. What concrete control mechanism do you have in place to not go over the edge and risk either expensive court cases or being blocked like Apple is now experiencing with the Attac protests?

CvR: We have a group solemnly focused on sustainability goals driving our actions. What you learn is the general challenge of management: to align seemingly opposing objectives. Let’s look at energy consumption as an example. More bandwidth and better coverage requires seems to require more energy. At the same time, sustainability makes a reduction of energy consumption desirable. Turns out that sustainability and business goals can be aligned, using less energy reduces cost and is good for the business as well.

What is your advice to leaders in the field of AI in regards to their position in the future? If they continue with their mismatch between announcing successes and delivering them, could it damage one of the most important fields of R&D?

CvR: We need to set the expectations right. I believe we need to distinguish between general purpose AI (identifying and solving general problems like a human) and application specific AI. General purpose AI is very difficult to deliver. However, application-specific AI is in the same phase as the internet was shortly before the web browser was invented. As with all exponential technologies it seems to move slowly and then suddenly accelerates creating unexpected consequences. At DT we saw substantial benefit in AI for chatbots. Creating a 50% swing in NPS.

Interview with Christian von Reventlow Chief Product & Innovation Officer (CPIO) at Deutsche Telekom

As you see on a daily basis lots of new things and developments presented, what do you recommend to your children as career path?

CvR: The next wave of disruption will be in robotics, molecular biology, and quantum computing. Robotics as the personal butler; moving from sequencing the DNA to engineering the DNA, plus quantum computing replacing the current transistor and silicon-based computers. And my biggest personal desire: use all the technology to transform education. Ensuring that all children can get personalized education, so that they can live up to their fullest potential.

And in which industry do you see the best growth options in the coming 5 years?

CvR: AI, robotics, and digitization of everything.

Ten years after the Lehman collapse the banks are still struggling. Who do you see as possible partners to finance this growth options?

CvR: There is no shortage of money in general. However, the money is looking for low-risk high-return opportunities. Translating general opportunities in robotics, AI, and digitization into low-risk investment opportunities is the challenge for entrepreneurs, startups, and large corporates alike. To get funding requires a solid proof point that one has cracked this nut.

Talking with VC experts in the Valley they have an impressive list of investments in AI which didn't bring the expected returns - what could help VC to understand risk and

timing of these investments better?

CvR: Applying AI as a technology to better understand the investment space.

Specifically, some AI is a tool to identify hidden patterns in large amounts of data. Now apply the famous phrase: "history repeats itself," and one should be able to better predict what investments will pay off or not. An example of the hidden pattern is the work done by MediaTenor in the last year: Identifying the pattern that sustainable organizations generate better financial returns than average organizations.

BTW I am thankful for your question - I love to take this on as a general challenge on and find more concrete examples.

Where do you see banking in 5 years regarding to be a partner for innovative products?

CvR: I believe that banking as an industry is ready for a major innovative upgrade. And if played right it can become a partner for innovative products. Two examples:

- A major finance institution could become a major driver for the "API economy". (API's - Application Programming Interfaces - are interfaces between software products/services). Specifically, to couple micro finance transactions with the value exchange transactions of partners along a value chain.
- Or make blockchain as a ledger useable for mainstream business. Currently Bitcoin is lacking real identity. All accounts are anonymous. Providing

Interview with Christian von Reventlow

Chief Product & Innovation Officer (CPIO) at Deutsche Telekom

real identity will eliminate most of the fraud and abuse. This opportunity can get played on three levels:

- A major financial institution, launching something as a central bank electronic ledger with real identity, will achieve immediate large transaction scale.
- Launching jointly with two other global institutions will ensure global scale.
- Globally transformative impact will result in backing by the full faith and credit of a government.

A view on the downside of not taking action by Joi Ito, director of MIT media lab: "The blockchain will lower cost, disintermediate many layers of business and reduce friction. As we know, one person's friction is another person's revenue."

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

I-spga as a new immunogen, a modest contribution to the fight against the Antimicrobial Resistance.

This report describes the UNGSII program for development of new step in the field of science to combat antimicrobial resistance.

The draft IVP-BNTRI was updated after the antibiotic resistance and new superbugs impact 5 in medicine (2017) taking into account the preclinical and clinical studies conducted in Romania, using avian immunologically active proteins (PI-2A) (3,4,6).

Following the WHO statement on the transition to the post-antibiotic age of April 30, 2014, the occurrence of all antibiotic-resistant bacterial strains and bacterial strains, termed superbug, resistant to all antibiotics including Colistin, was reported.

If the emergence of superbugs with a high degree of pathogenicity (gonorrhoea) has created emotions in the medical world, the presence of an impressively large number of bacterial strains resistant to all antibiotics present on the medical market can be considered to be of major importance for pathology as well as for the programs of prevention and control of antibiotic resistance.

During this time period (2014-2018), except for using antibiotics (in higher doses, taking the risk of excessive and unnecessary administration), there is no other option to provide, from the scientific and practical point of view,

any possibility of preventing and treating antibiotic resistance. At the same time, it has been shown that bacteria not only have they found solutions for counteracting the activity of antibiotics, but also have developed their own informational system which allows them to transmit the genetic information for antibiotic resistance from their own DNA to the other native bacteria of the same or other species present in their natural environment.

In stage I of the research, an immunogen for laying hens, I-PC2, containing 16 types of antigens, was used. For each species of bacteria, a mixture of seven strains isolated during 2013-2015 was used, except *Helicobacter pylori* and *Candida spp.* The immunogen did not contain immunomodulators or marker proteins.

Immunogens of the type I-spga with superbug *K. pneumoniae* and other antibiotic-resistant germs that have been pre-clinically and clinically tested, were prepared *in-vitro* for the inhibition of the isolated superbug *K. pneumoniae* and *in vivo* in the treatment of urinary infection treatment.

The programme relating to the preparation of the I-spga immunogen aims at the use of superbug pathogenic germs or germs resistant to all antibiotics available

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Presentation model: Global Framework for Development & Stewardship to Combat Antimicrobial Resistance Draft Roadmap. WHO/EMP/IAU/2017.08 (revisited 19 October 2017)

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

in Romania and the use of the products obtained from the hyperimmune egg *in vitro* and *in vivo* for the purposes of inhibiting the increase of antibiotic-resistant germs, including the newly-appeared superbugs.

ACTIVEIMMUNITY is a company set up for the development of the research and production programme for the production and exploitation of the hyperimmune egg of *Gallus domesticus*, which is stage II in the programme for the prevention of and fighting antibiotic resistance.

Stage II of this programme is represented by:

- ✓ obtaining a new immunogen called I-spgaused for inoculation to hens for immunisation purposes;
- ✓ the immunogen consists in antigens from 22-24 species of bacteria, out of which, each antigen consists in seven strains isolated for Romanian patients during 2016-2017 which are antibiotic-resistant, including for the Candida group, except for *Helicobacter pylori* obtained from ATCC;
- ✓ using an immunomodulatory (G) for stimulation the hen's immune response;
- ✓ ensuring two biological markers (G,A) for the I-spga immunomodulator;
- ✓ exploiting the immunologic-active proteins formed in the egg and which can be found in the eggshell, the chorion-allantoid membranes, the vitelline membrane, yolk, and white;
- ✓ superior verification from a qualitative perspective of the proteins extracted from the egg in the 'raw' phase or of

the hyperimmune egg in the eggshell;

- ✓ preclinical and clinical studies using the immunoglobulin extracted from the hyperimmune egg yolk (IgY-mono, IgY-poly);
- ✓ preclinical and clinical studies using ovo-transferrin, ovo-mucin, ovalbumin and lysozyme that are immunologic active;
- ✓ preclinical and clinical studies using the shell and vitelline membranes, the eggshell with shell membrane;
- ✓ preclinical and clinical studies using conditioned nanogels in the form of gels, creams, lotions;

The interests of the group of Romanian specialists were different from those of other specialised institutions worldwide, using as antigens bacteria strains isolated directly from hospitalised patients. Each antigen is represented by a mix of seven different strains. The immunogen contains immunomodulators and also biological markers for identification.

The results of the first and second stage of study were publicly presented before the Romanian Academy, in OneHealth sessions, European congresses, and they are protected by ***eight patent applications with OSIM Romania*** and published in specialised magazines and more recently in *OneHealth Magazine*, Romania.

The first generation products produced at Romvac S.A. were recorded with the Institute of Food Bio-resources, Bucharest, Romania,

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

and the second generation products under the ImunoVIP brand are recorded with the Institute of Food Bio-resources, Bucharest, Romania, they are produced in the own laboratories of Mogosoia, Ilfov County, Romania and they are conditioned in Fabiol S.A. Bucharest, Romania. Both immunogens I-PC2 and I-spga have been insulated by the author of the present paper.

Considering that the products from the ImunoVIP group approved under the Notification Certificate series AA/no. 10779 of the 3rd of August 2017 are recommended for maintaining human health, regardless of the age and that they directly relate to the support of immunity-including the remedial of the immune deficiencies either naturally occurred or inherited or acquired, an exhaustive introduction has been developed covering, on a case-by-case basis, different pathological conditions where a successful intervention can be made.

This paper also responds to the insistent calls of the WHO for the identification of solutions for the boosting of antibiotics or their replacement, since these products have proved effective in the laboratory or in the treatments of humans, and may be an important scientific option, as well as this programme against antibiotic resistance.

The results obtained with the products in stage I of study and by ImunoVIP allow us to claim that these products from the category of food supplements become a new formula for fighting the most serious antibiotic-resistant infections that put humans' health and life at risk, such infections being a real hazard for the life

of millions of people (2017).

Many scientists, whose ideas and propositions on the use of immunologic active avian proteins (PI-2A) are mentioned in this Chapter, support our results and underline that oral administration shows a particular advantage and so do the products used, which are natural and are derived from eggs.

In addition, it must be emphasized the fact that these original food supplements prepared for the first time in the world in Romania contain, in their active form immunomodulators, growth factors, anti-inflammatory factors, and also, a new group of immunologic active proteins produced during the immunisation with I-spga and which are identified *in vitro* and in the successful treatment of patients infected with antibiotic-resistant bacteria.

The scientific part included in this paper is the result of studies showing the usefulness of the hyperimmune egg in many fields in humans' biology and pathology areas. There are entire chapters referring to the health conditions on which intervention should be made. Overall, the paper is a document that will allow a change in the perception on the use of food supplements, limited to a series of fields useful to the human health, but not to the pathology created by the immunological dysfunctions created genetically or acquired as a result of antibiotic resistance.

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

1. SCOPE AND OBJECTIVE

1.1 CONTEXT

In April 30, 2014 World Health Organization [2,3] officially announced the end of the antibiotics era, at least of those existing at that time, following to make an exceptional effort to find and use effective potentiation of antibiotics and the use of new antimicrobial medicines.

In September 2016, the United Nations General Assembly in its “Political declaration of the high-level meeting of the General Assembly on antimicrobial resistance” called upon the WHO, together with FAO and OIE, to finalize a global development and stewardship framework. As mandated in WHA68., the framework will support the development, control, distribution and appropriate use of new antimicrobial medicines, diagnostic tools, vaccines and other interventions, while preserving existing antimicrobial medicines, and promoting affordable access to existing and new antimicrobial medicines and diagnostic tools, taking into account the needs of all countries and in line with the Global Action Plan on Antimicrobial Resistance. The WHO Director-General submitted options for establishing such a global development and stewardship framework to the Sixty-ninth World Health Assembly.[1]

In January 2018, the new Institute of Bio-Nanotechnology [IVP- NBTRI], under direct coordination of UNGSII, makes a modest contribution to this program to combat antibiotic resistance, with new

antimicrobial proteins made by I-SPGA as immunogen [4,5,6], developed as a result of over 10 years of experience in the field.

1.2 OBJECTIVES

- On the basis of resolution WHA68.73 and as described in A69/24.Add. 15, the objectives of a global development and stewardship framework can be described as the following:
- Research & Development (R&D): the Institute supports the development of new affordable antimicrobial products, diagnostic tools, vaccines and other interventions for detecting, preventing and controlling antimicrobial resistance;
- Access: promotes affordable access to avian immunological active proteins [PI-2A] new antimicrobial products made by I-spgaimmunogen and diagnostic tools of assured quality;
- Stewardship: preserves antimicrobial medicines by taking measures to be associated with the new generation of PI-2A

1.3 WHAT DO WE UNDERSTAND BY "PI-2A"?

At the outset, one of the key questions is how to reach a common understanding of the character and function of a framework. In drafting resolution WHA68.7, the World Health Assembly deliberately chose the term ‘framework’ to provide flexibility with respect to the selection of the most appropriate instrument(s).

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

The term PI-2A as a ‘framework,’ in general, refers to a basic conceptual structure. In our case the framework PI-2A thus will provide an overarching structure for various tools and instruments aimed at addressing three key objectives: 1) fostering research and development (R&D), 2) access, and 3) stewardship [1].

In doing so, the PI-2A as well as hyper-immune eggs will build, on existing standards, guidelines and tools that are currently being implemented by WHO and FAO. Where gaps remain, new tools need to be developed. In general, elements of the PI-2A as framework that have repercussions for human health sectors could be endorsed by the constituencies of the three organizations.

PI-2A as well as hyperimmune eggs are, in the same time, in the competence of FAO. The joint FAO/WHO Codex Alimentarius Commission develops food standards with the dual objective of protecting consumer safety and health and ensuring fair trade practices. These existing instruments will be taken into account and can be used to further the objectives of the framework. In general, elements of the framework that have repercussions for human, animal, plant and environmental health sectors could be endorsed by the constituencies of the three organizations.

The joint UN Sustainable Development Goals, Health targets for SDG3, pct. 3.3, 3.4, 3.8, 3.b and 3.c as existing instruments will be taken into account as objectives of the framework,

1.4 HOW DOES THE PI-2A SCIENTIFIC PROGRAM RELATE TO THE GLOBAL ACTION PLAN ON ANTIMICROBIAL RESISTANCE?

The scientific program regarding PI-2A relates to the Global Action Plan on Antimicrobial Resistance to study the second generation made by I-spgaimmunogen and to create an environment conducive for developing new antimicrobial products, conserving them, and ensuring affordable access.

This framework, therefore, directly addresses to following objectives:

- optimize the use of antimicrobial medicines in human and animal sectors as standard products;
- to produce personalized PI-2A for individual patient, for a group of people, for one hospital or for larger geographical areas;
- develop the economic case for sustainable investment that takes account of the needs of all countries;
- develop the evaluation assay of the PI-2A specific activity;
- set up other interventions using PI-2A

PI-2A by specific immunological activity against the microorganisms resistant to antibiotics can support the use of antibiotics by their potentiation. Idiotype-stimulating activity of the immune system, increases efficiency against antimicrobial agents.

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

PI-2A program that is based on modern immunology will address:

1. improving awareness and understanding of the immune mechanisms underlying this program;
2. organize programs to prevent antimicrobial resistance through effective communication, education and training;
3. organizing programs to support immunological immune senescence;
4. organizing a program for the production of PI-2A anti antimicrobial resistance, including anti-superbugs specific for each isolated from the patient;
5. strengthening the knowledge base and evidence through surveillance and research;
6. reduce the incidence of infection through effective prevention measures of sanitation, hygiene and PI-2A preventive treatment of the entire medical staff and patients regardless of length of stay;

Activities to address targets 1-6 are already in various stages of implementation under PI-2A plan. The framework is meant to be a comprehensive framework. It will support but not interfere with or replace national action plans, which will remain the main instrument for the implementation at country level action plan overall.

1.5 SCOPE OF THE FRAMEWORK

Resolution WHA68.7 takes a very broad

approach, encompassing new antimicrobial medicines, diagnostic tools, vaccines, and other interventions.

These programs/initiatives aim to foster the development of new treatments, improve access to existing treatments and, in part, address disease-relevant issues surrounding resistance.[12, 13]

Neglected tropical diseases are a typical example where the costs of the R&D cannot be offset by future product sales. ***Fostering R&D for neglected diseases is, therefore, addressed within the follow-up process of the report of the Consultative Expert Working Group on Research and Development: Financing and Coordination (CEWG).***

Likewise, the speed with which antimicrobial resistance emerges and spreads varies considerably from one pathogen to another [1-4]. This stresses-out the important need for investment in strategies and approaches for infectious disease prevention and control that are not heavily dependent upon the development of new medicines that will also become ineffective in the near future[1].

Standard immunological PI-2A corresponding to a newly isolated microbial antigen from the patient, such immunologic corresponding antigenic structure of these immunogens can be synthesized, standard immunological PI-2A corresponding to a newly isolated microbial antigen from the patient, such immunologic corresponding antigenic structure of these immunogens can be synthesized, resulting in personalized

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

ImunoVIP products, each of which is made with isolate or isolates obtained from each patient (isolated involved in the etiology and progression of the disease). These products will be made both the need for prevention or treatment.

Personalized products PI-2A bring specific immune intake, being different from autovaccine that appeals directly to the body's immune response. A part of PI-2A activity, the segment referring to an immune response, act instantly and permanently while the administration program is done and maintains an active immune threshold for 20-25 days after the treatment is discontinued. PI-2A can recommend long time periods, up to 14 years of treatment without their adverse reactions [9-11].

Given that, a specific function of the research program is to harmonize stewardship policies in the human and food sectors. The framework will mainly focus on health technologies that can be used for human health.

RESEARCH AND DEVELOPMENT

IVP-BNTRI is the result UNGSII activity for stimulating research and development of new antimicrobial drugs, diagnostic tools, vaccines and other interventions for detection, prevention and control of antimicrobial resistance.

Priority research and development incentives and investment in research and development and the coordination of IVP-BNTRI are:

- Postgraduate training program in the field of modern immunology and AMR^{a)};
- Education program of healthcare^{b)};
- Education program regarding AMR population education^{b)};
- Getting PI-2A custom or standard antibiotic effective anti AMR;
- Studies of the PI-2A association with antibiotics for potentializing of the AMR specific efficacy) ;
- Studies on the PI-2A specific activity anti Neisseria gonorrhoea);
- Studies on the PI-2A as specific vector^{e)};
- Good capitalization technologies and methods for the treatment of urinary tract infections^{f)};
- Recovery technologies for the treatment of infections with AMR;
- Studies the immunogram as test for the confirmation of the specificity of PI-2A against AMR;
- Studies on specific action to PI-2A on MRA cell adherence, cell penetrability, avidity;
- An achievement of modern technology to produce quality and affordable PI-2A in terms of price and accessibility and safety for use^{g)};
- The Chicken and Egg System for the Development of Anti-Idiotypic Vaccines^{e)}
 - Program for Romanian and foreign students;

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

- Program for Romanian people;
- Studies of the old generation of antibiotics as well as new antibiotics;
- Studies on the PI-2A specific activity anti *Neisseria gonorrhoeae* isolates antibiotic resistance including superbugs;
- Anti-Idiotypic Vaccines for chicken and other animals as models;

The Research Center is based on over 50 years of experience in human and veterinary medicine. There is a number of scientific papers which shows the good results obtained to support immunological treatment of antibiotic resistance, cardiovascular treatment by ovo-transferrin and biological vaccines [5,6, 12,16, 23,24, 34-47, 42-45,52].

The research program for **avian immunologically active proteins** on antibiotic resistance and the immune deficiency began when we worked on specific pathogen free (SPF) chickens (1965), in collaboration with P. Biggs, E. Churchil and N Payne from the Houghton Poultry Research Station, Huntington, England and with Bruce Calnek, S. Hitchner, R. Colle, J. from Cornell University, Ithaca NY., USA. A significant part of this studies has been performed in IV Patrascu Laboratory, at Romvac SA, Voluntari where we produced the first generation of these products, using I-PC2 as immunogen. The second generation (I-spga) is developed and produced in ACTIVEIMMUNITY Laboratory, in Bucharest, Romania.

A milestone of these studies conducted in IV Patrascu laboratory, at Romvac SA, Voluntari, has been the production of the first generation of these products, using I-PC2 as immunogen, followed by the second generation, using I-SPGA, in the ACTIVEIMMUNITY SRL laboratories, Bucharest, Romania .

We are working now with the "Victor Babes" Institute of biology, Carol Davila Nephrology Hospital, Victor Babes Infectious Disease Hospital, National Institute of Food Bio-resources and ACTIVEIMMUNITY S.RL.

2.1. ACTIVE IMMUNITY VIA PASSIVE IMMUNITY

Human and animal pathology studies expanded to the matter of antibiotic resistance for which we organized a similar research program, significantly different from those of other research institutes in the World.

Such studies were based on ***the active immunity produced in the body of animals and humans by oral administration of IP-2A***. The immunologically active avian proteins (IP-2A) crosses the digestive mucosa and reaches the protein molecules that carry the V-variable, including lymphocytes B and T which they are directly effective against, by transfer of target antigenic epitopes information. This information is absorbed differently by lymphocyte B and lymphocyte T respectively, each of these cells having distinct reactions.

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

In the bone marrow, IgY is effective on the initial embryonic structures of lymphocyte B and produces hyperactive lymphocytes B ten times more effective than the lymphocytes which have not reached IgY. The native lymphocyte T absorbs the negative information from the V-variable of IgY and transfers it to its own DNA which is to be cloned. This new mature lymphocyte reaches the hyperactive lymphocyte B where it transfers the negative information from the V-variable of IgY and stimulates idiotypic IgY-identical IgG production. The number of antibodies produced in the animal organism corresponds to a vaccination with an attenuated live virus. This mechanism represents a part of the effects of immune modulators and immunologically active proteins in the human organism.

The preclinical and clinical studies conducted during 2012-2016 revealed that we have insulated a set of IP-2A obtained on chickens (*Gallus domesticus*) and that we can use it in various product-forms for human administration. These products that have been prepared for the first time in the world, are completely different from the biological products currently used for psoriasis treatment and for other immune disorders in humans as well [4,5,9,10,82,24,28,38,41-47,51].

The biological products prepared on monoclonal antibodies or their protein structures are murine or human proteins considered as “non-self” by the human organism, with adverse or idiotypic reactions against them. This group of products structured on mammalian molecules (mice, humans) is considered as

“non-self” in the human organism and induces multiple and violent adverse or idiotypic reactions that, within 10-14 days, reduce or even destroy these products in the human body. The parenteral administration of these products was shown to be inappropriate and harmful resulting in severe local and general reactions and even anaphylactic shock, which are life-threatening for people. Such products are to be replaced as soon as possible based on the recommendations from the European Food and Drug Administration, CDC Atlanta, Ge., ECDC Europe and from the scientific observations of certain specialists from EU, Japan, USA, Canada [53-58]

IP-2A are products obtained from poultry, that are phylogenetically 350 million years away from humans, more immunologically active than IgG of mammals, which are 35 million years away from humans [59]. Under these conditions, the chicken reacts distinctly from mammals, including humans. Compared to monoclonal antibodies, IAPs are able to identify a large number of epitopes on the structure of the antigen and have specific effect against bacteria, viruses, fungi, unicellular parasites and even round worms. IP-2A are considered as “self” and induce no adverse or idiotypic reactions. Therefore, treatments have been carried out for 14 years on daily basis in humans, without adverse or idiotypic reactions throughout the treatment period.

Modern psoriasis treatment consists of biological drugs (-ximab, -xumab, -umab, -cept) with a few deficiencies like blocking of certain cell functions and annihilation of parenterally administered cytokines,

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

threatening the patient's health due to some severe adverse and idiotypic reactions. The emergence of antidrug antibodies (ADAS) against biological products resulted in functional or structural damage of biological products within 14-20 days post administration. ADAS may restrict the use of biological products for treatment of psoriasis, rheumatism and other diseases.[60].

IP-2A have a number of benefits compared to biological products, such as: interaction of V-variables, mucosal absorption, immunologically active proteins, big phylogenetic distance from humans, no adverse or idiotypic reactions, possibility of long-term treatment.[42,43].

2.1.1. PSORIASIS VULGARIS TREATMENT

Within the last two years we have started an ambulatory treatment program for skin infections, on which occasion we find out that we could treat psoriasis vulgaris using IAPs (more than 300 patients). Considering the properties of these proteins and the fact that for 14 years of study they have been accepted as "self" by the human body without inducing any adverse or idiotypic reactions, IAPs represent a scientific issue of particular importance. IAPs were used in children, resulting in healing of five of the 20 psoriasis children. The other children are still under treatment and their condition has improved. Another interesting fact of psoriasis children treatment is the wellbeing state that occurs in children and their parents as well. Preventive treatment is still administered in the cured children.

[37-42,44-46] It has been for the first time in the world reported that the skin of patients who have been suffering from psoriasis for 30-55 years and cured, was completely healed without any scars. This is also an important matter to discuss in order to understand the changes occurring in the wounded skin and the way it heals. Pictured is a girl who had a severe form of psoriasis vulgaris that healed in 40 days of treatment with IgY-versatile and two years remain healthy.

2.1.2. EPIDERMOLYSIS BULLOSA (EB) TREATMENT IN CHILDREN

Upon request from a few parents with *epidermolysis bullosa* children, we administered an oral and topical IAP treatment in 4 children. These treatments are ongoing and we have not been able to determine a final assessment methodology or term yet. At this point, we can report, for the first time in the world, that the disorders due to the digestive localizations of the disease, from mouth to anus, can be successfully treated in a short time, without knowing for sure what sequelae EB causes in the digestive tube. After administering this IAP treatment, the internal and external wounds on the lips, oral and lingual mucosa, pharynx, esophagus, stomach and intestines have healed and now the children are able to eat normally and they can tolerate any kind of food, including cellulose-containing foods. These children now have a normal intestinal transit. Their health condition has significantly improved during this treatment.

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

At the same time, the respiratory tract and skin of 9-14 years old children born with EB have improved considerably. A 12 years old female patient with larynx wounds and changed voice, constantly coughing for 7 years and suffering from digestive disorders beginning with lips, tongue, palate, palatine velum and esophagus, received, under strict parental observation, IAPs by aerosols for the respiratory tract, orally for the general treatment and IAP solutions for topical skin treatment. Remarkable health status improvement was reported after 14 days with disappearance of cough, oral and esophageal wounds and normal voice. To this extent, the patient started eating normally and a state of wellbeing could be noticed both in the patient and her parents.

Significant improvement was recorded after 30 days, the skin on the soles healed and it became thicker, more flexible and resistant to trauma. During the following weeks, the patient reported that no more blisters had appeared on her skin.



First child cured of epidermolysis bullosa. Wound blistering of the skin and mucosa have been blocked and MRSA infection have been treated.

The next step is the treatment and specialists will perform clinical examinations to describe each and every part of the body that has been affected by EB.

The small number of patients we have at present forces us to be scientifically cautious and circumspect. But we must make these results available since we are talking about the first children suffering from EB, whose health condition has significantly improved. [37,42,52].

2.2. NEW IMMUNOLOGICAL ACTIVE AVIAN PROTEINS [IP-2A]

2.2.1. Ovo-transferrin [conalbumin] immunologic active protein.

One of the three objectives of the framework is to foster R&D of new antimicrobial medicines, diagnostic tools, vaccines and other interventions for detecting, preventing and controlling antimicrobial resistance. The activities that are required are identification of R&D priorities, incentives and investment in R&D as well as coordination[1].

Ovo-transferrin (OTf) belongs to the family of transferrin's. This group of bilobate proteins plays an essential role in binding ferric iron and retaining it in solution. OTf is a monomeric glycoprotein that has been isolated from egg white (albumen). Structurally, OTf is the second major protein present in the egg white (12-13%) and it binds iron ions (Fe^{3+}). OTf appears in two forms: *apo-form* and *holo-form*. The *apo-OTf* form does not contain

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

iron and can be destroyed by the physical and chemical treatments, while the *holo*-form fortifies iron and is steady in the process of proteolytic hydrolysis and heat denaturation. Both forms can be converted into immunologically active proteins[47-49].

The non-specific antimicrobial properties of OTf are the consequence of its ability to sequester iron needed for the development of microorganisms [63,64]. OTf is successfully used as a valuable constituent of diverse products, such as the following: supplements fortified with iron, instant drinks, and protein bars for athletes, and it has an undeniable influence on health and performance [62].

To demonstrate the specificity between OTf PC2 and the bacterial antigens, used to immunize hens, direct ELISA test was applied. From multiple OTf PC2 samples, binary dilutions were made, starting with 1 : 100. The results obtained and shown in Figure 1-4 revealed that OTf extracted from hyperimmune egg white has a high specificity for all bacterial antigens. This demonstrates that the hen's immune system responds equally to antigenic stimuli inoculated.

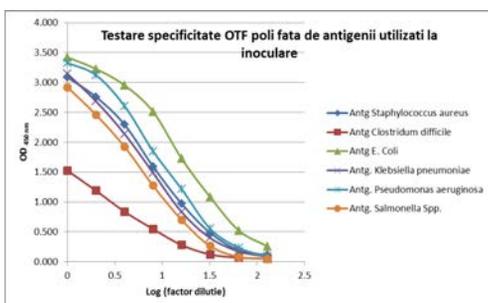


Fig. 1. OTf apo multiple immune reaction anti original antigens used as immunogen by direct ELISA assay

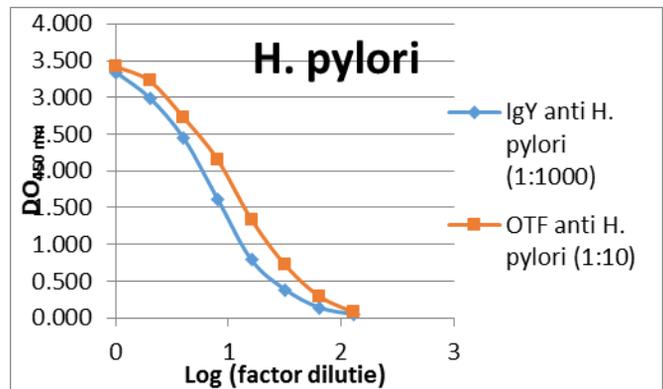


Fig.2. OTf apo anti Helicobacter pylori-specific reaction anti H, pylori antigen by direct ELISA test

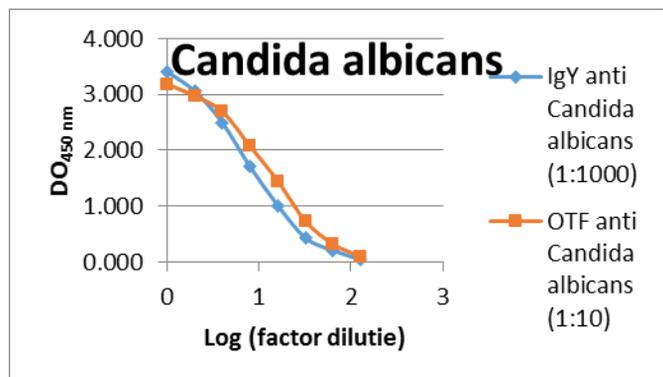


Fig.3 OTf apo anti Candida albicans-specific reaction to anti Candida albicans antigen by direct ELISA test

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

The OTf specificity study proves an important vector role for this protein. This is specifically exhibited in reacting with antigens' epitopes used to immunize hens and revealing certain immunological properties of OTf isolated from the hyperimmune eggs. OTf specific immune response can be monovalent [anti *Helicobacter pylori*, *Candida albicans*] or multiple with a maximum intensity and specific immune response. Here, we have demonstrated that multiple OTf extracted from the hyperimmune eggs showed specificity towards all bacterial antigens used to inoculate hens in our experiment [Fig. 1-3].

Preclinical studies performed with holo- and apo- ovo-transferrin have shown that specific acts and have the ability to inhibit "in vitro" growth of bacteria that were used in the preparation of the immunogen and immunization of hens. In Fig. 4 is an example for inhibiting the growth of a strain of *Klebsiella pneumoniae* resistant to antibiotics. The specific activity is related to the activity OTf -poly-poly IgY extracted from the same hyperimmune eggs of hens immunized with *K. pneumoniae*.

OTf-poly crosses the digestive mucosa, generating an idio- type-idiotype immune response, similar to multivalent IgY (fig.6)

OTf- poly cross digestive mucosa and acts on T and B lymphocytes producing IgY idio- type-idiotype immune response identical with OTf-poly given orally (Figure 6). This model can be used to prepare a new type of vaccine, which will be discussed below.

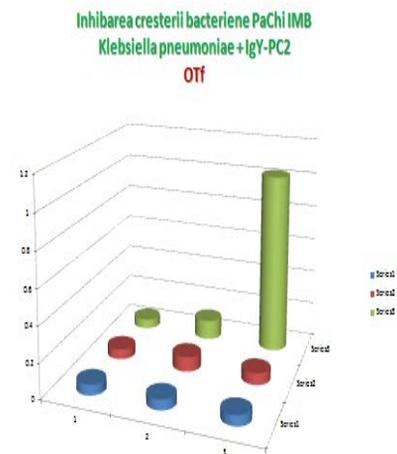


Fig.4 "In vitro" inhibition of bacterial growth of *Klebsiella pneumoniae* antibiotic resistance, by OTf-poly and IgY poly at 24 hours
 Green: *K. pneumoniae* in broth culture medium:
 Red: *K. pneumoniae* with specific IgY
 Blue: *K. pneumoniae* with apo-specific OTf

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

The OTf immunological activity may be used with certainty as alternative biological means in the prevention and treatment of antibiotic resistant infections. OTf can be used as a medicine, meaning to achieve therapeutic effects in humans. Also, the use of OTf as nutraceuticals could be a gain in the biomedical investigation due to their role as natural means for prevention of diverse health issues. Institute program is limited to further studies in chickens and the immune response to antigens, after parenteral administration. The species traditionally chosen for antisera production are mammals especially rabbits but recently there has been a growing use of the titer of specific antibodies is high but different for each antigen separately.

2.3. THE PROGRAM FOR NEW VACCINE AGAINST ANTIBIOTIC RESISTANCE AND MORE. ACTIVE IMMUNITY BY PASIVE IMMUNITY CONCEPT

According to Jerne's network theory, antibodies contain in their variable region a representation of the 'universe' of antigenic structures, the idio type. It is possible to produce an antibody against the antigen-binding site of antibodies produced to that antigen [18,22]. It was reported the development of a humoral and mucosal immune response in rabbits fed daily doses of the MOPC-315 murine IgA antibody, supporting the hypothesis that human exposure to xenogeneic antibodies,

may provoke the production of anti-idiotypic antibodies [23]. We wanted to support the same hypothesis by demonstrating the capacity of animals orally fed with hyper immune eggs to induce systemic immune responses against the same idio type. Our first study was to demonstrate that immunized chicken with the rabies vaccine strain Flury and bovine leukemia vaccine virus BLV-NBL2 to produced specific anti-Flury and anti-BLV antibodies in chickens and hyperimmune eggs after parenteral administration.

The second set of experiments was to demonstrate that chickens free of rabies and bovine leukemia antibodies, fed with anti-Flury -immune eggs and anti- BLV-immune eggs can develop antibodies that are able to inhibit the binding of rabies vaccine Flury strain and bovine leukemia vaccine BLV-NBL2 strain original antigen, showing that the anti- Flury and anti-NBL-BLV2 antibody raised in chicken after feeding, was an anti-anti-idiotypic antibody [18,19].

This experiment was the fact that chickens are not susceptible enzootic bovine leukemia and rabies and the viruses cannot be found in in body hens used in these experiments. All serum samples of this hens before the start of the experiments were negative for the vaccine strain Flury vaccine strain and NBL-BVL2.[37,38]. Similar experiments were done with HIV on the cats, successfully [36]and in this field appeared are some promising results [22-26].

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

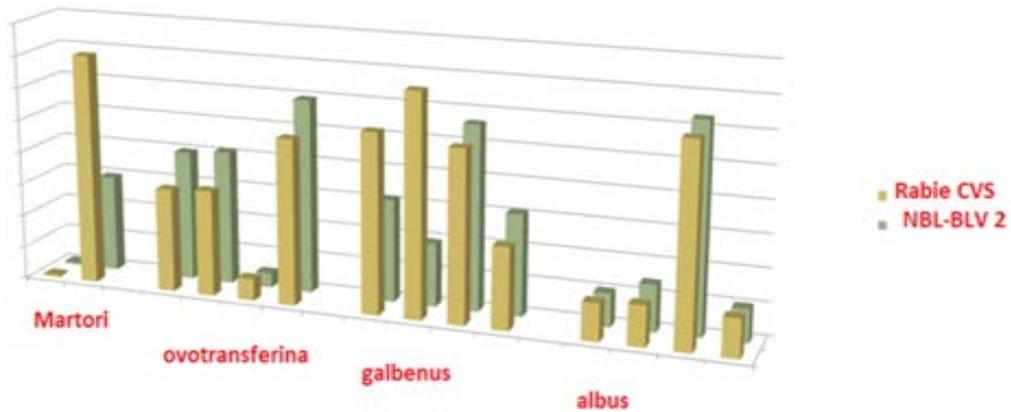
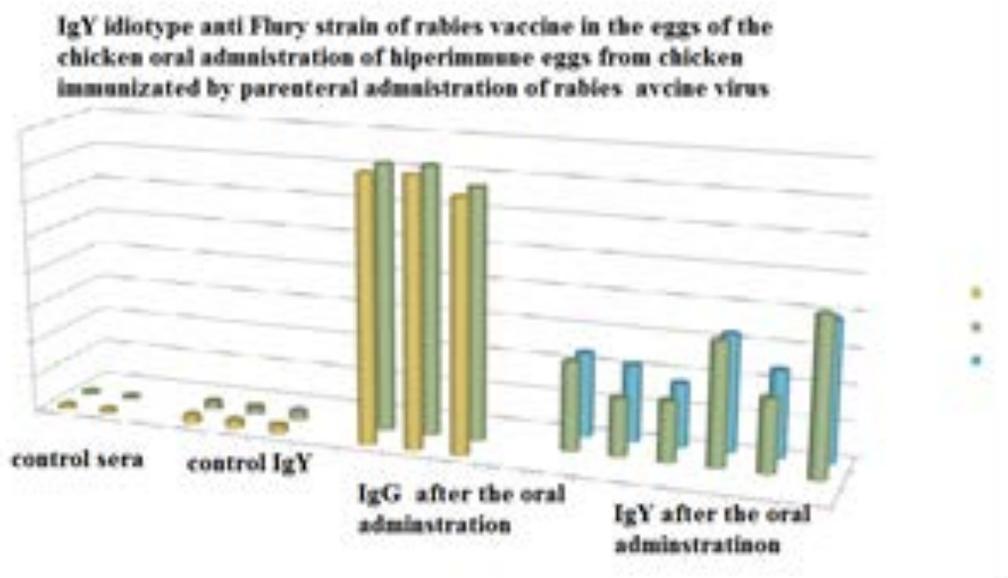


Fig. 6 Hyperimmune-idiotype IgY from eggs of hens fed with the polyvalent ovo-transferrin, yolk or egg white with biological markers of bovine leukosis virus (BLV) and CVS rabies virus vaccine



Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

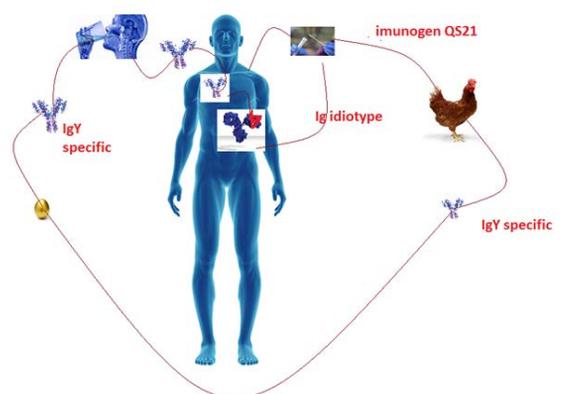
Based on the experience that we have using PI-2A through the oral treatment of urinary tract infections with antibiotic resistance in humans cure patients managed without any other medication. These results are subject join new patent. From the information that we have from 96 patients with urinary infections with the antibiotic resistant treated byPI-2A after 16 months 70% of them have not had relapses (personal studies).

Lastly, WHO is supporting R&D initiatives for Rapid Point of Care (PoC) in vitro diagnostics (IVDs). PoC IVDs are needed to help address appropriate therapy and the occurrence of antimicrobial resistance by informing health professionals on the exact nature of the pathogen and the presence of drug-resistance. The most effective treatment can then be determined during the patient's visit.

- In the present study we have in the program:
- avian proteins immunologically active [PI-2A] and their characterization;
- PI-2A preclinical studies;
- Clinical studies on the PI-2A treatment of urinary tract infections by antibiotic-resistant bacteria;
- Studies on the treatment of antibiotic-resistant infections in patients with diabetes
- Treatment of Neisseria gonorrhoeae infection by specific PI-2A.

2.4. IP-2A CUSTOM

IP-2A products can be achieved with a standard immunogenic I spga mono or polyvalent [up to 24 different antigens] called IP-2A custom. The immunogen I spga is made of antigens coming from the microorganisms isolated from a single patient or complex of an immunogen derived from a mixture of antigens [bacteria, viruses, yeasts] originating select a hospital or select a geographic region. IP-2A-specific personalization enables treatment of antibiotic resistant infections to a person or a group holders, which has been prepared this product



Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

2.5 GUIDING R&D INVESTMENT BY SETTING PRIORITIES

Suggestion:

- The FAO, OIE and WHO have started to identify as priorities in the human, animal and plant sectors. We have some suggestions as following:
- to organize an information system accessible by the institutions involved in this program AMR;
- to admit the possibility of efficient use of other methods and products AMR
- these new anti AMR should be able to achieve in 90 after emergence of new forms of resistance,
 - to organize a reference laboratory to:
 - a) assess preclinical products evaluation but not more than 30 days;
 - b) to evaluate the clinical efficacy of these new products in the shield AMR as possible depending on the pathogen and the evolution of the infection.

2.5.1 Human R&D priorities of BNTRC

Prioritization of pathogens for research and development is highly challenging given the absence of established criteria that define the impact of pathogens on human health (1). As a result, no consensus exists on the most effective methodology to develop prioritization of infectious

diseases. Ranking antibiotic-resistant organisms in order to direct future research and development requires a detailed identification and integration of extensive information that defines the burden of antimicrobial resistance (microbiological, epidemiological and clinical). Moreover, communicable diseases differ in clinical presentation and duration (e.g. acute versus chronic), treatment approaches (e.g. multidrug versus single drug therapy), and in etiology (e.g. bacterial, viral, fungal).[14]

The WHO report on prioritization of pathogens for R&D identified 12 classes of priority pathogens (critical, high and medium priority), along with *Mycobacterium tuberculosis* that are increasingly resistant to existing antibiotics. R&D programs should focus urgently on new antibiotics specifically active against TB (including multi- and extensively drug-resistant strains) and against multi- drug resistant Gram-negative bacteria that cause acute clinical infections in both hospital and community settings worldwide. Development strategies should also focus on new formulations for pediatric use and user-friendly (e.g. oral) formulations.[14].

PI-2A products meet WHO requirements because they are specific anti multi-drug resistant [up to 24-26 drug-resistant strains, each a mixture of seven strains] and are extensively drug-resistant strains by the sources of antigens [different location different people] which are part of I-spga as immunogen for chicken immunization.

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

The joint FAO/WHO Codex Alimentarius Commission develops food standards with the dual objective of protecting consumer safety and health and ensuring fair trade practices. These existing instruments will be taken into account and can be used to further the objectives of the framework. In general, elements of the framework that have repercussions for human, animal, plant and environmental health sectors could be endorsed by the constituencies of the three organizations [1].

Subsequently, in September 2017, the WHO published an analysis of the current antibacterial clinical pipeline including biologicals and treatments for TB.[20]. The current pipeline was found to be insufficient and lacking potential treatment options for most of the resistant bacteria, especially for multi-drug resistant Gram-negative pathogens [21] This analysis, to be updated annually, focused both on the quantity and the potential added value of products in the pipeline and will inform future discussions of the WHO Expert Committee on Health Research and Development.

A similar analysis should be done annually to antibiotics, the drugs, vaccines and other products used in the prevention and control of antibiotic resistance.

In parallel, the WHO is also undertaking an evidence-based prioritization exercise for human vaccines that may reduce the impact of antimicrobial resistance to guide

future priority R&D investments. WHO is working closely with stakeholders to prioritize which vaccines (existing or under development) would have the greatest impact on either antibiotic use, or antibiotic resistance. This will take into account the relative contribution of the vaccine-preventable diseases to the overall antibiotic consumption, and the costs of administering the vaccines.

The ACTIVEIMMUNITY project aims to integrate modern immunology in prevention and treatment of resistance to antibiotics. In order to attain this purpose, the mechanisms which can determine active immunity using passive immunity shall be used, based on the results of our current activity. Using I-spga immunogen, which contains immunomodulators and biologic markers, standard products can be produced for immune specific reactions applying to up to 24 bacterial strains used for immunization.

The second option is using the I-spga personalized immunogen, specific for antigens selected from particular geographic area or locations, such as hospitals, as well as for individual human antigens (harvested from one individual patient).

The proven specific I-spga activity anti-Klebsiella pneumoniae superbug compels us to expand the current investigation area and to study all possibilities to use the ImmunoVIP products in prevention and treatment of antibiotic resistant bacteria.

Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

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Active immunity by passive immunity

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Active immunity by passive immunity

Patrascu Ionel Victor, MVD, PhD

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1. Executive Summary
2. Methodology: Scenario Building
3. Expert Voices
4. **Drivers of Global Change**
 - i. Political Challenges: Shifts in global power
 - ii. Cultural Challenges: Religious bias and misunderstandings
5. Agenda Setting
6. Global Youth Poll
7. Appendix

The U.S. faced a significant image decline in 2017 *China and others saw their images improve in response*

The overall image of most major countries on international TV news is negative. However, the level of negativity varies widely, and there have been marked changes in images for several nations.

This has been the most visible in regard to the U.S., which was the country with the most positive tone on international TV news in 2016, but dropped to sixth place in 2017 as levels

of negativity nearly doubled. This decrease was tied to a number of issues, but was largely related to the change to the Trump Administration.

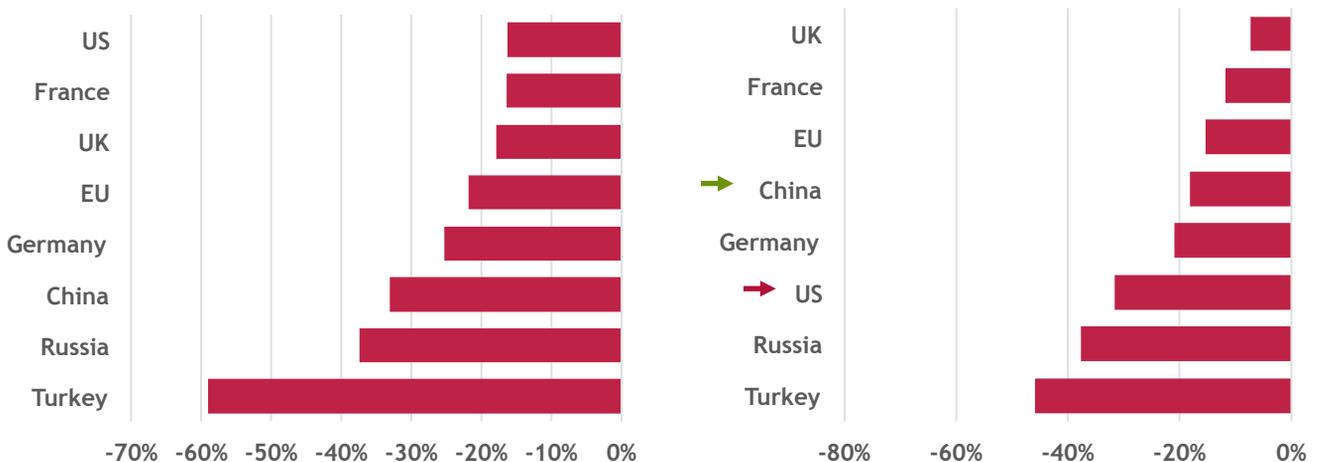
While the U.S. focused inward due to related policy shifts, other countries communicated on leadership they could offer to the global community, resulting in a far more positive tone for China, which as early as January 2017, gave an Obama-like speech at WEF.



Global TV: Tone on selected countries from international news

2016

2017



Basis: 173,482 reports regarding countries on international TV news

The global reaction to Trump is clear *First year of the new presidency is sharply criticized*

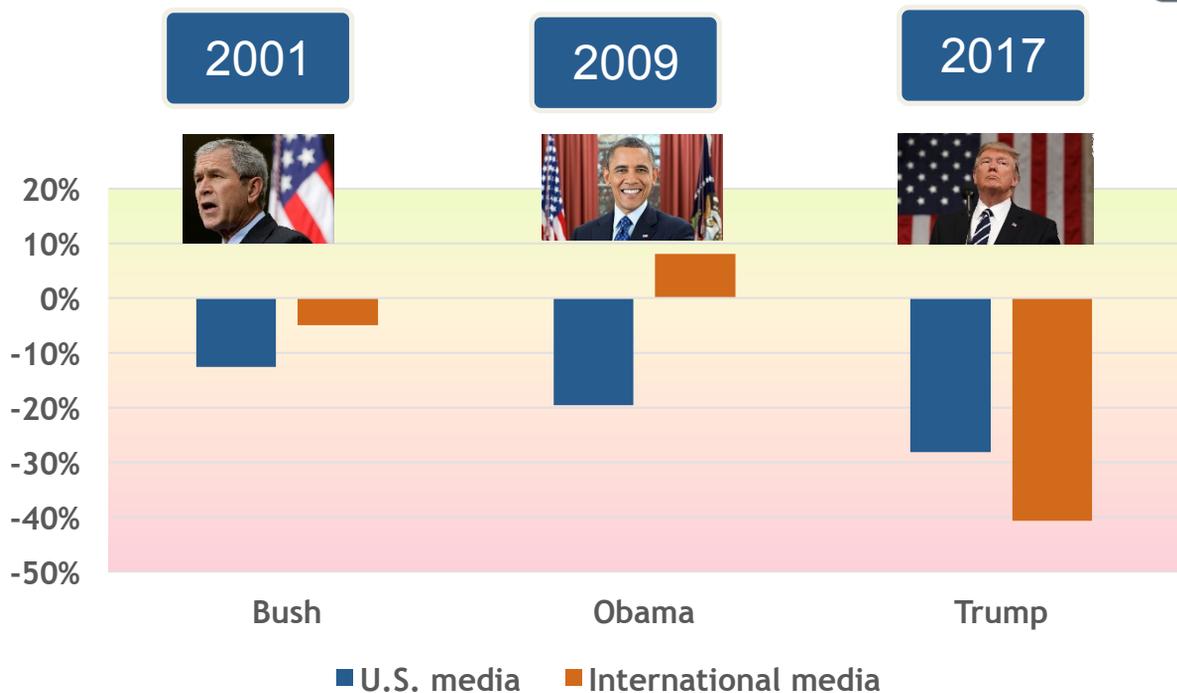
Long-term analysis of international TV news shows the significant difference in the tone of coverage for US presidents in their first year in office.

While both Bush and Obama were perceived better abroad than at home, this switched in regard to Trump. For 2017, his image was far more negative

than either of the other two recent presidents on U.S. TV news. But coverage on international TV news was even more severely critical. Indicating a significant shift in the perception of U.S. leadership around the world.

Overall, Trump's image in his first year was 50 points more negative than Obama's.

Global TV: Image of recent U.S. presidents in their first term



Basis: 14,430 reports on U.S. presidents on international TV news

France, China move into global leadership images

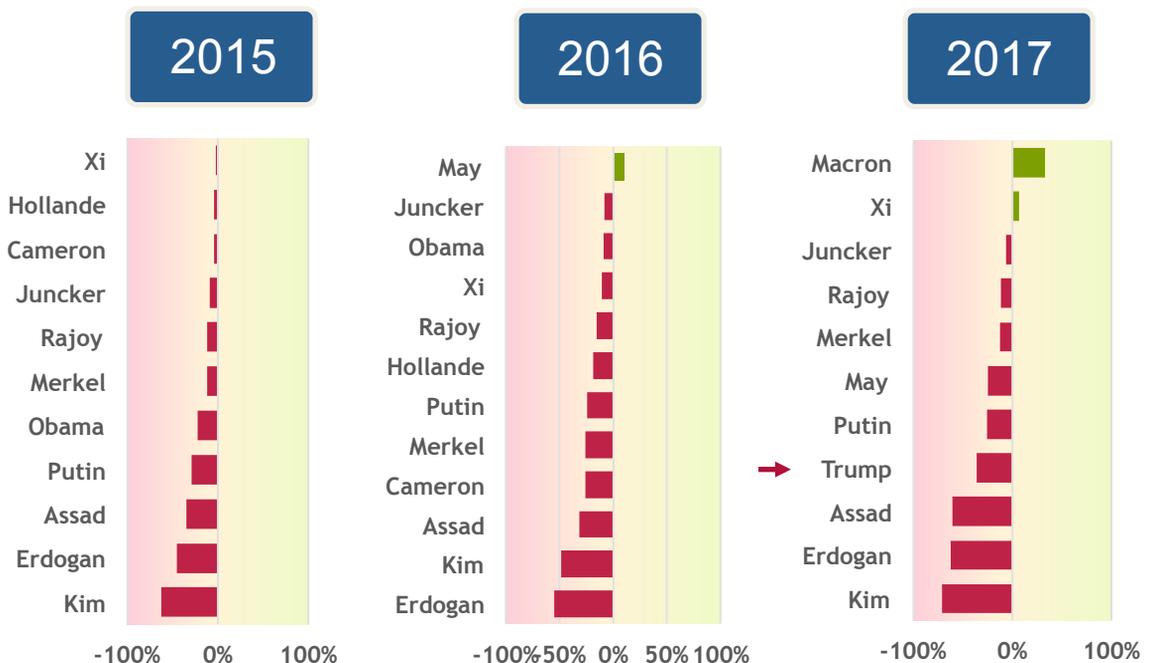
Trump, May images suffer amid isolationism

New French president Macron had the most favorable image of a selection of major world leaders in 2017. This was in part because of his election victory, but also because of his strong statements in support of the EU as well as statements supporting science research and inviting U.S. researchers to continue their work in France

due to the hostile climate in the U.S. China's Xi Jinping was the only other leader to have a positive image on international TV news as both Merkel and May faced questions about the stability of their positions.

Meanwhile, the only leaders perceived more negatively than Trump were those of Turkey, Syria, and North Korea.

Global TV: Tone on global leaders on international TV news



Tone of coverage: Share of positive-share of negative reports

Basis: 167,624 reports in 2015 / 135,390 reports in 2016 on 11 global TV news programs



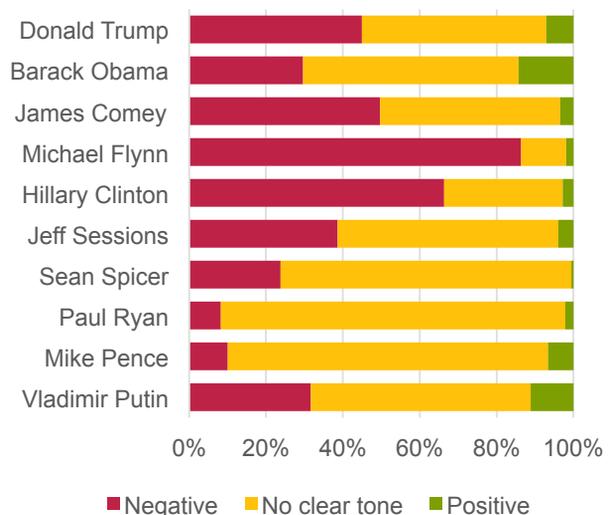
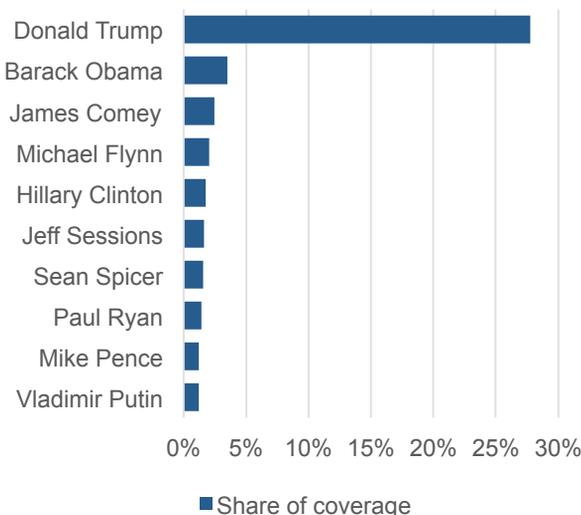
Trump is the main story on the U.S. *Russia link drives the news*

In 2017, Donald Trump was responsible for almost 30% of international TV news coverage about the U.S. While it is standard for a country's leader to be the most visible, this share was higher than for other countries.

Other major protagonists were all associated with Trump in some way, including members of his administration, key figures in the investigations

against him, and his opponent in the 2016 election, Hillary Clinton. Also strongly visible was Vladimir Putin. Putin was not visible on U.S. TV news because of traditional diplomatic issues, but rather because of the ongoing news story about Russian meddling in the U.S. election. Putin's status as a former intelligence agent was also frequently noted.

Global media: Share of coverage on persons regarding the U.S. on international TV news, 2017



Basis: 54,859 reports on world leaders o international TV news in 2017



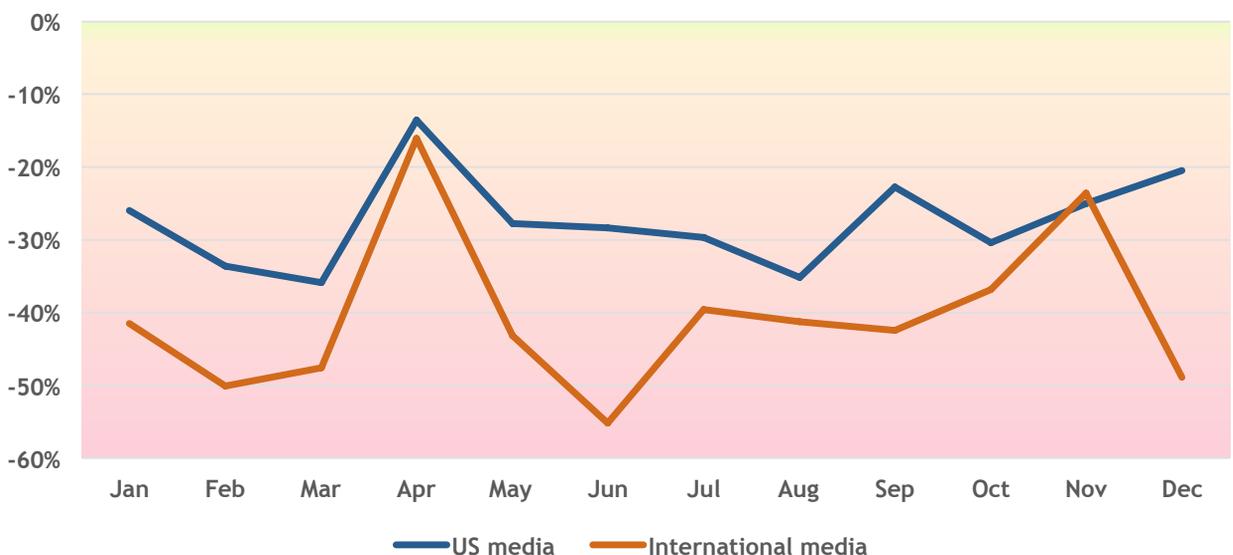
Global media not warming to Trump *U.S. coverage tone stabilizes*

While negativity for Trump on U.S. TV news seems to have stabilized especially since August, international TV news has had a far more negative image. Improvements in that image have been short-lived, with image drops resuming based on actions with international agreements (such as the Paris Accord) and in response to off-the-cuff statements in interviews or on

social media attacking the U.S.'s historical allies.

This negativity in the media is not isolated. Gallup polling also indicated intense negativity for Trump, with its U.S. daily polling ending the year with a 40% approval rating, the middle of a range which hovered between 45% and 34% all year. As usual, the clear relationship between media information and polling response was clear.

Global media: Tone of coverage on Trump, 2017



Basis: 54,859 reports on world leaders on international TV news in 2017

International concern about role of U.S. *Trump's temperament in focus in U.S. media*



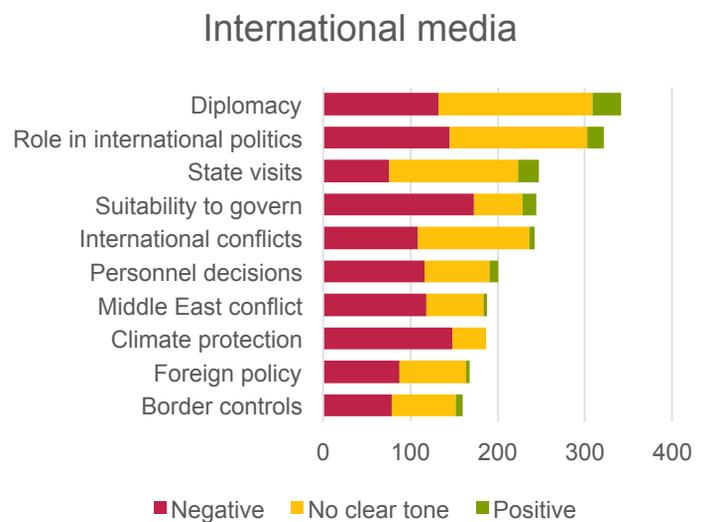
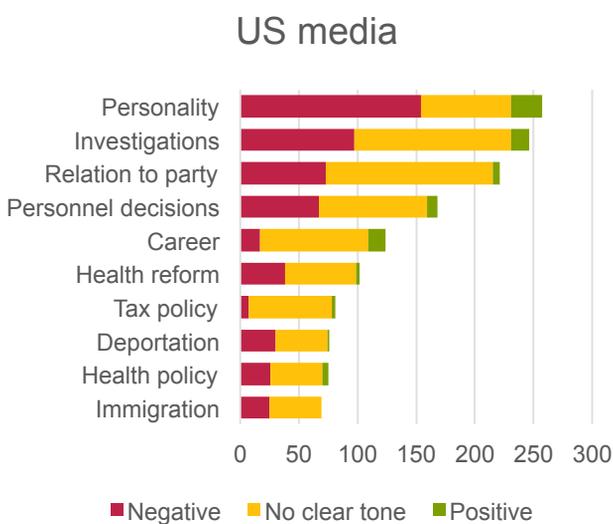
U.S. TV coverage on Trump focused on different issues than international TV news.

Domestic coverage highlighted concerns about Trump's personality and temperament. The investigations of his administration and the potential election meddling were also strongly visible. Trump's attempts at legislative action on healthcare and taxes were additionally visible, as was his stance on

immigration issues.

International coverage questioned his suitability as president, but overall focused on diplomacy issues and the shifting role of the U.S. in international politics. Concerns about actions on climate change and the Middle East conflicts were highlighted.

Global media: Volume and tone on Trump by topics for domestic and international media, 2017



Basis: 54,859 reports on world leaders on international TV news in 2017



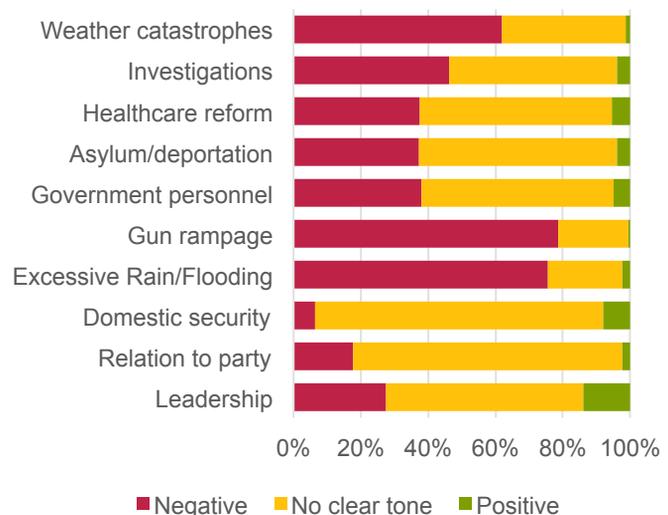
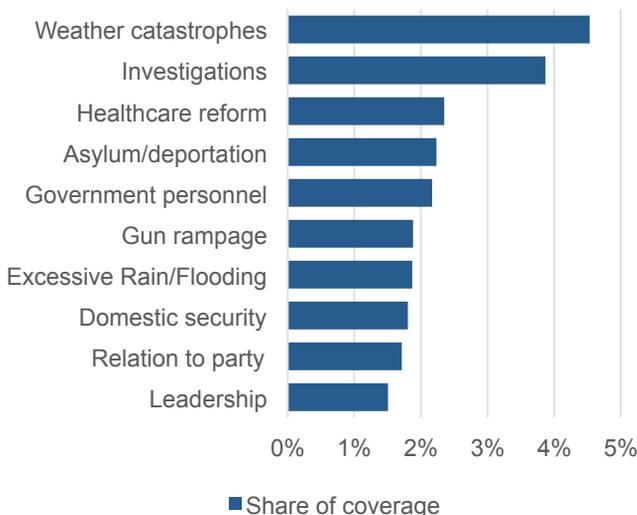
U.S. defined by a series of crises *Disasters, shootings, and government turmoil*

The image of the U.S. was defined by crisis in 2017. In addition to the investigations of Trump's administration, TV media focused on a series of severe weather events which resulted in major flooding, power outages, and displacement of people. While recovery from severe hurricane strikes on the U.S. mainland was relatively rapid, the year ended with Puerto Rico still 50%

without power after 100 days. Additionally, a series of mass shootings, including the largest mass shooting in U.S. history - which resulted in dozens of deaths and over 500 wounded - captured news attention, but no change to gun policy or discussion there of transpired.

Positive news about the U.S. was absent from media coverage.

Global media: Volume and tone of topics on the US on international TV news, 2017



Basis: 72,282 reports on the U.S. on international TV news

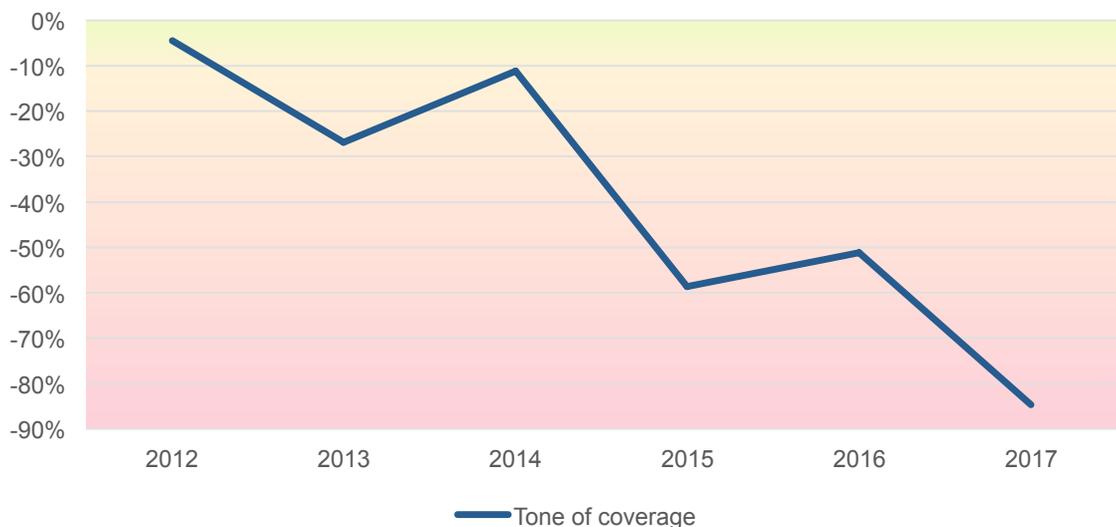


Media assessment of cyber risks dire *Election controversy adds to negativity*

Tone of coverage on protagonists related to cyber security has been on a downward trend since 2012. Topics such as hacking, credit card theft, and the dark web were the main drivers of this coverage through 2015. Coverage in 2016 and 2017 have featured these topics as well as concern about election tampering via social media advertising buys and the

hacking of communications from both the RNC and DNC. Nearly 90% of all coverage on cyber risks was negative, indicating that if there are solutions they are not visible in media coverage. This distrust of the web will make it increasingly challenging for businesses to get customers to trust them with their information and may continue to call U.S. election results into question in the 2018 midterms or the 2020 election.

Global media: Tone on cyber risks in the U.S. on international TV news and in business media, 2017



Basis: 5,514 reports on cyber risks on international TV news and in opinion-leading business media

Optimism on economy grows *Strong markets and low unemployment*



Media coverage of the U.S. economy has been strongly positive as the stock market has continue to climb and unemployment remained low. This narrative ran counter to one of the common explanations for the 2016 election results - economic insecurity. This suggests that the segments of the economy covered by the news media are not the segments of the

economy that benefit many working class voters - such as factory work, mining, and agriculture. It also suggests that the economic insecurity framing of the election may not be accurate. Additionally the 2018 midterm elections may present challenges for Democrats despite Trump's record unpopularity, because of positivity on economic numbers.

Global media: Tone on the U.S. economy on international TV news and in business media, 2017



Basis: 29,597 reports on the U.S. economy on international TV news and in business media

Brexit process weighs on images

Royal family main source of positivity re U.K.



In the U.K., coverage focused on prime minister Theresa May as she worked to lead the Brexit process. Prominent opposition figures like Labour Party leader Jeremy Corbyn and Scotland First Minister Nicola Sturgeon were also visible.

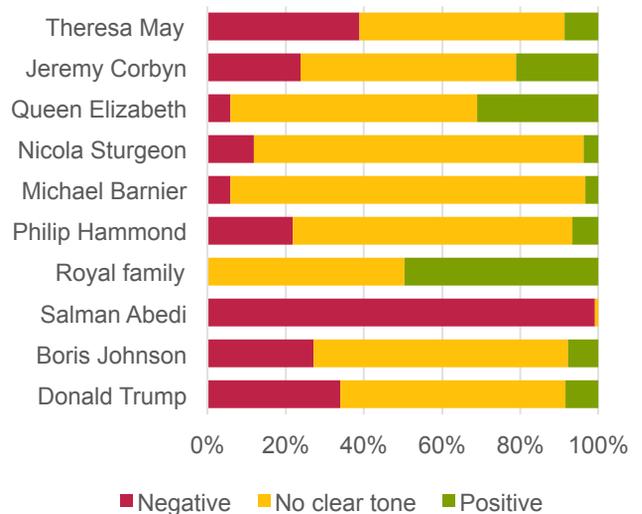
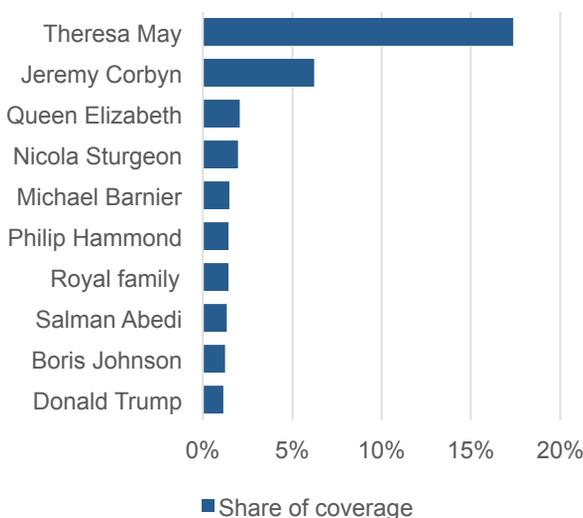
Non-political figures were also visible, as the Queen and the Royal Family received significant

coverage as another pregnancy for the Duchess of Cambridge was announced as was the engagement of Prince Harry.

Salman Abedi, the perpetrator of the Manchester bombing, was amongst those most visible.

Trump was also in focus as parliament debated whether to permit a state visit.

Global TV: Most visible protagonists on global TV news regarding the U.K., 2017



Number of foreign reports on international leaders

Basis: 8,213 reports on persons regarding the UK on international TV news

May's image suffers

Periodic image gains have not been sustainable



Theresa May's image was relatively consistent between U.K. media and international media. While international media was harsher, the overall tone did not vary significantly most months.

Tone was on a downward trend throughout the year. The Brexit process has moved slowly and without clarity on key issues

like the Irish border and has frustrated those in the U.K., both for and opposed to Brexit.

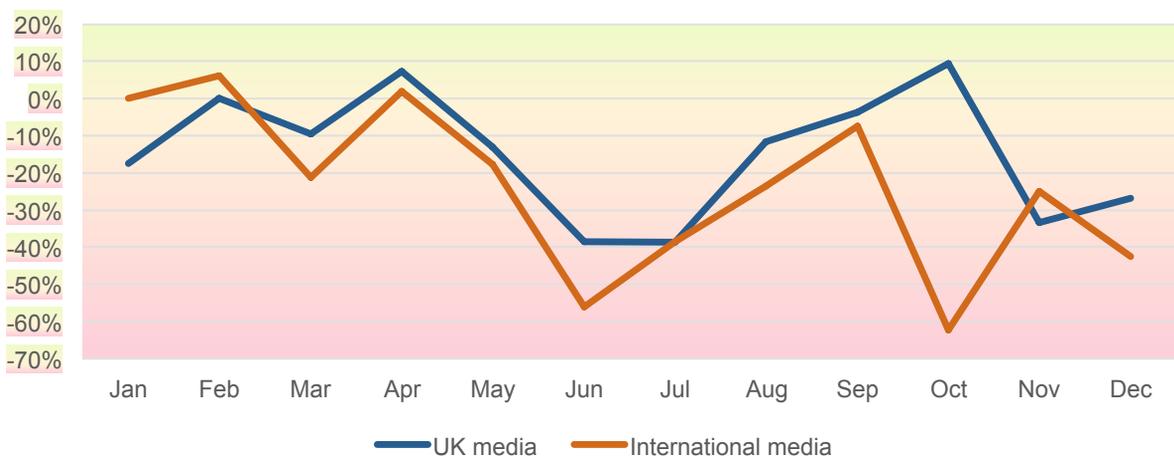
Additionally, other domestic issues in the U.K., such as funding for the National Health Services, impacted May's image.

There has been some question in the media about how stable her government is.

Global TV: Tone of coverage on Theresa May, 2017



Overall image of Theresa May



Basis: 1,638 reports on Theresa May on international TV news

May's image volatile on Brexit confusion *Media loves blue passport, but will optimism last?*



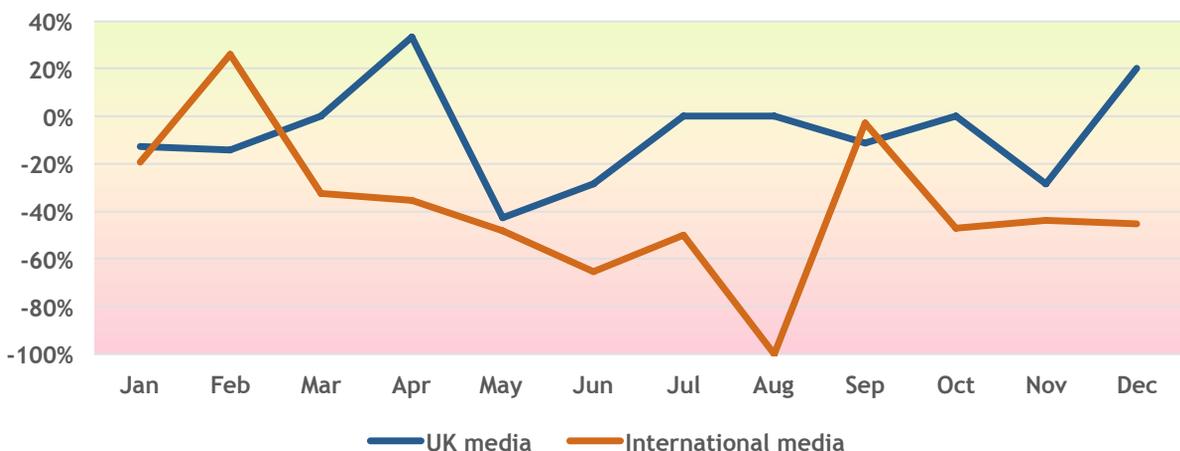
May's image specifically on Brexit has been particularly severe in international media as the process has dragged on and the U.K. has often been framed as seeming unprepared to move through the process of separation from the EU. There has been ongoing speculation about the stability of her government and if she will be able to balance the expectations of both the EU and

the U.K. While May's image took a hit in November and U.K. polling indicated dissatisfaction with her progress on Brexit, her image recovered in December as she announced that post-Brexit U.K. passports would return to the blue color used prior to the U.K.'s participation in the union. While the symbolic gesture was an image win, the long-term impact remains to be seen.

Global TV: Tone of coverage on Theresa May regarding Brexit, 2017



Image of Theresa May regarding Brexit



Basis: 1,638 reports on Theresa May on international TV news

U.K. media question government

But overall tone on process approaches balance



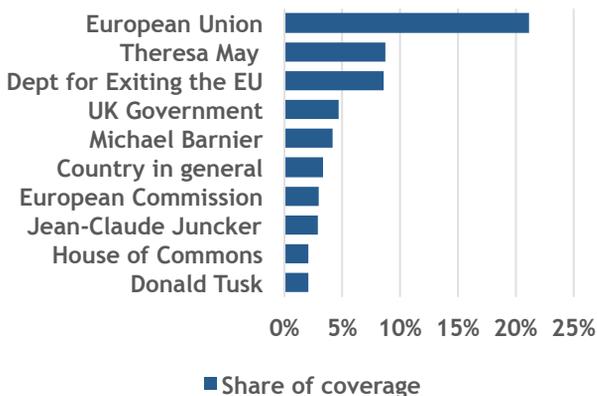
Tone for most of the protagonists related to the Brexit process was balanced throughout 2017, showing that there are still divisions regarding Brexit in the U.K. However, this balanced tone isn't just about whether the nation supports Brexit, but if it supports how Brexit is being handled.

Tone for the U.K. government was significantly more negative than positive, where as the tone for the EU was balanced. The media is sending a message that the U.K. government's Brexit plans are troubled, and if the vote were held today, the results of the question of whether to separate from the EU would likely be different.

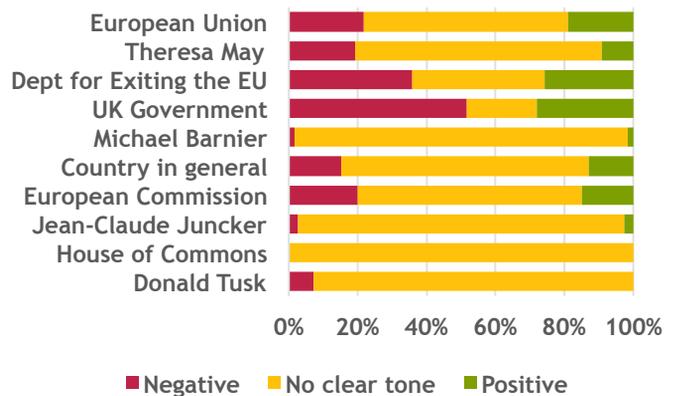
Protagonists related to Brexit in U.K. media, 2017



Protagonists on Brexit, U.K. media



Protagonists on Brexit, U.K. media



Basis: 3,148 reports on protagonists regarding Brexit on international TV news

Global media sharply critical on Brexit

Concerns about long-term impact



The global view of Brexit is even harsher than the U.K. view. Negativity for the U.K. government is severe, and concerns about the impact on society of Brexit are significant. In addition to the economic consequences, coverage of Brexit has focused on families of mixed nationality in the U.K. and their future as well as the

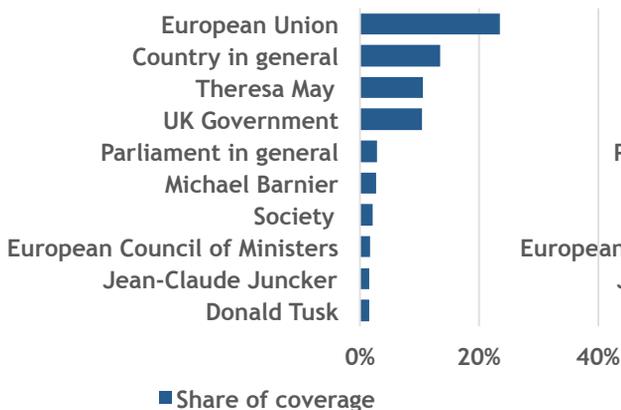
consequences of the border between Ireland and Northern Ireland. The loss of free movement regarding the U.K. for those outside of it, has also been raised as a major issue. There are no international heroes regarding Brexit.

Only the European Council of Ministers has a slightly positive image, but the situation is framed as bad for all.

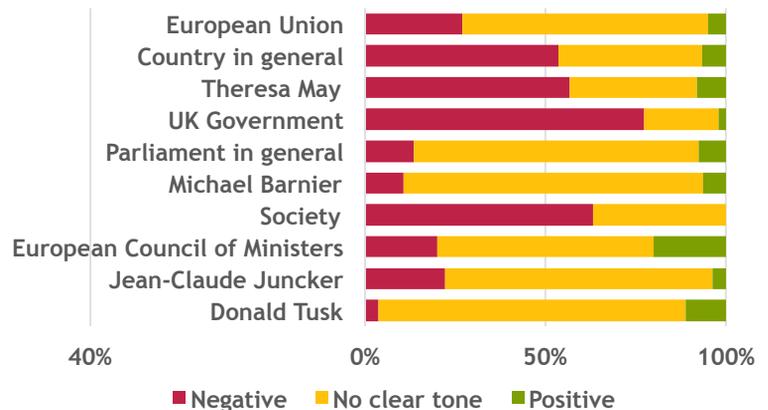
Global TV: Protagonists related to Brexit on international TV news, 2017



Protagonists on Brexit, international media



Protagonists on Brexit, international media



Basis: 1,638 reports on Theresa May on international TV news

Terrorism, values in the spotlight

Grenfell fire spotlights treatment of poor, safety

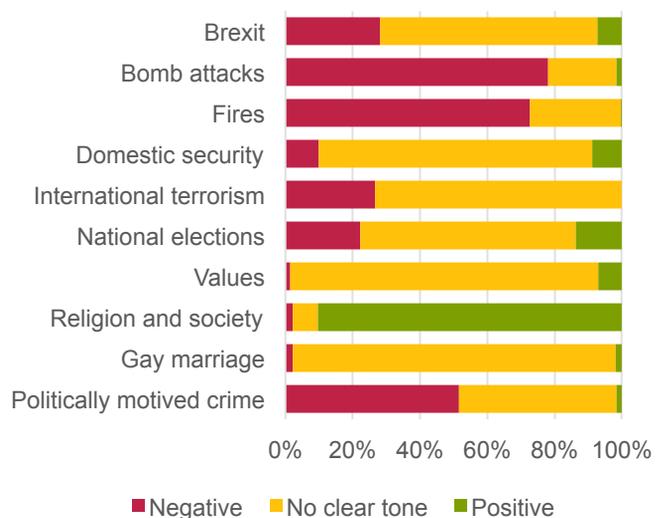
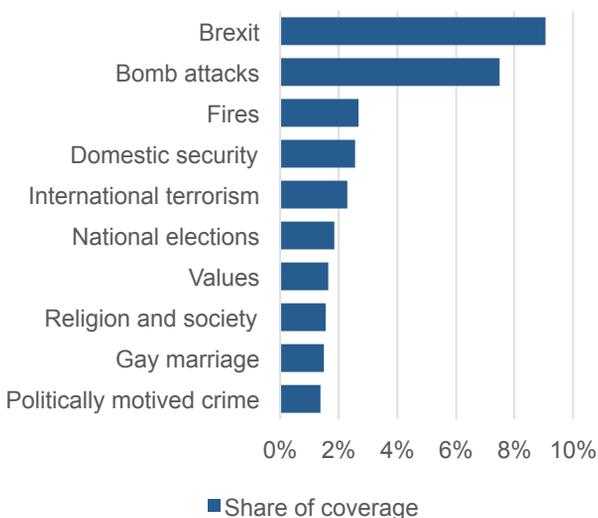


While Brexit dominated the coverage of the UK in 2017, other topics - largely related to terrorism and disasters were strongly visible.

The Grenfell Tower fire was strongly visible and raised questions about construction safety, housing for the poor, and U.K. values in general.

Meanwhile, the Manchester Arena bombing was the main story in ongoing terrorism concerns regarding the U.K. The role of religion in society, were driven into the news both by terrorism concerns and the differences in laws across the U.K., with same-sex marriage still being illegal in Northern Ireland.

Global TV: Most visible topics on international TV news regarding the U.K., 2017



Basis: 34,766 reports related to the UK on international TV news

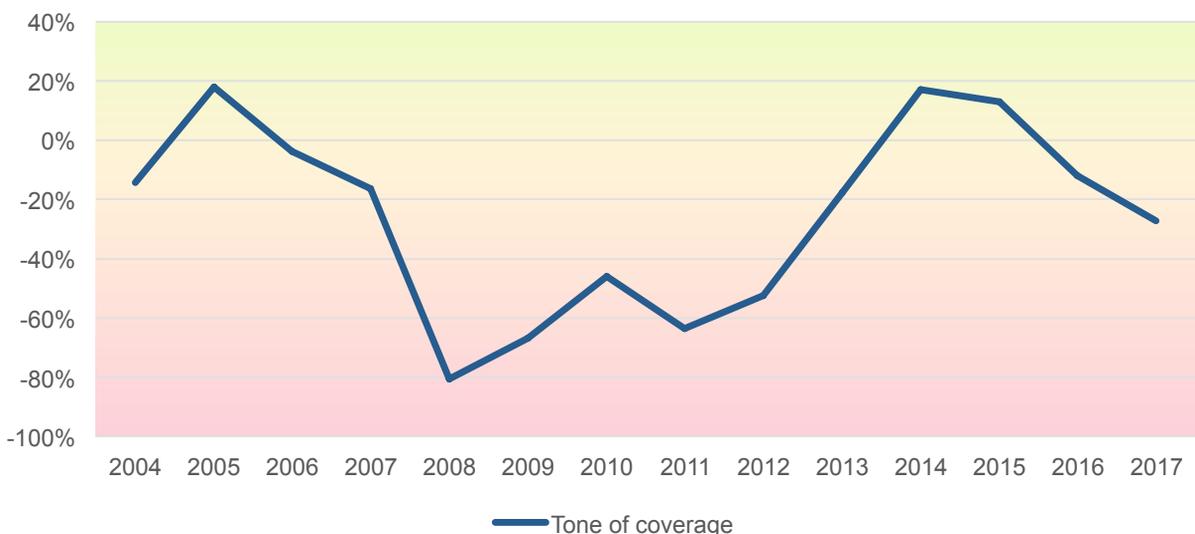
Tone on U.K. economy declining *Past gains lost in post-Brexit environment*



Media tone on the economy in the U.K. had been improving after the trough created by the trust meltdown. However, the Brexit vote in 2016 resulted in a decline in media sentiment on the economy that continued in 2017. Concerns about major banks leaving London, costs of goods from the EU, and difficulty in employers and employees making the best possible

matches have all been raised as issues. The strength of the pound has declined as well, despite some limited recovery after an initial precipitous drop. Despite the May government insisting that it will remain in place through the rest of the Brexit process, uncertainty about the stability of her government remains visible and continues to have an impact on media sentiment.

Global media: Tone on the U.K. economy on international TV news and in business media, 2017



Basis: 8,925 reports on the U.K. economy on international TV news and in business media

German election wears on Merkel *Only Steinmeier with positive image*

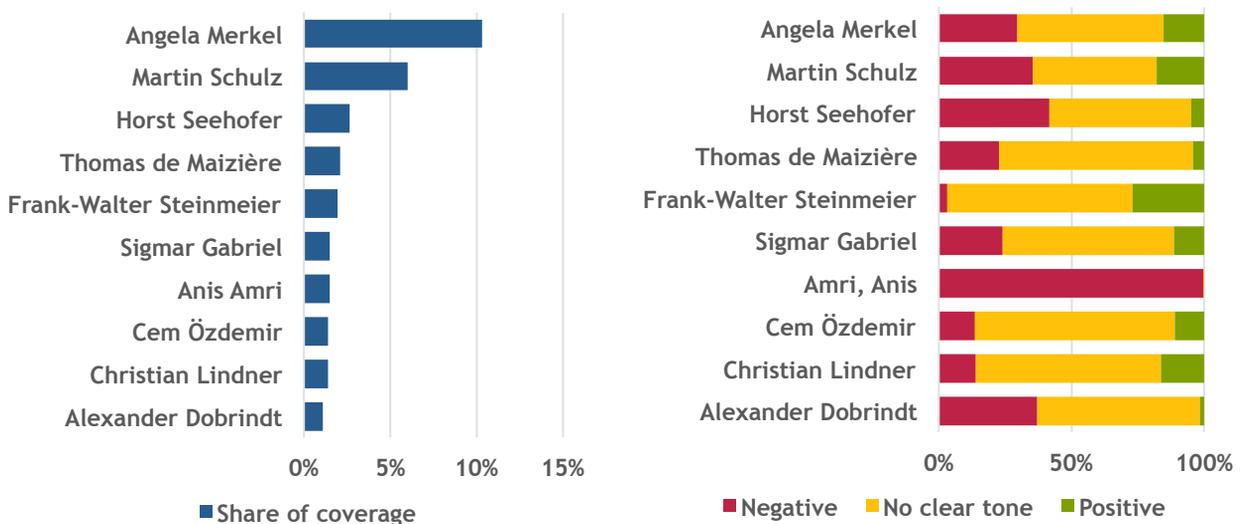


The focus on the German general election was intense, inside and outside of Germany, as Merkel was framed as a key leader in a number of international news stories from holding the EU together, to dealing with the migrant and refugee crisis, to stepping in on global leadership in the face of changes to U.S. policy.

Terrorism concerns were visible, as Anis Amri, the attacker responsible for twelve dead in Berlin in 2016 was in the news, both due to ongoing coverage and investigation, but also as terrorist concerns were a part of the election season.

Only Frank-Walter Steinmeier achieved a clearly positive image as he became president.

Global TV: Most visible protagonists on international TV news regarding Germany, 2017



Basis: 16,007 reports on protagonists related to Germany on international TV news

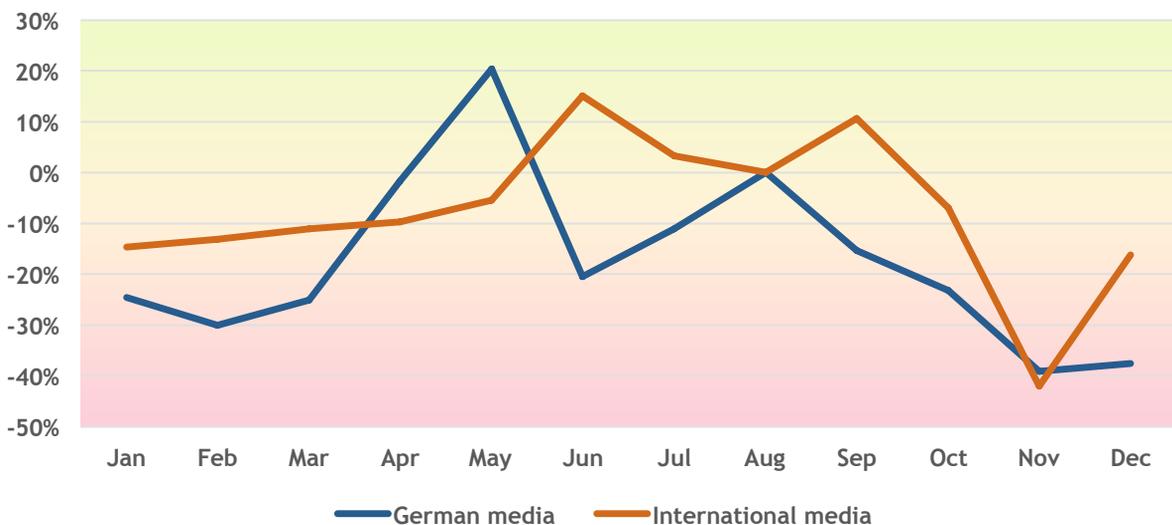
Merkel survives election *But adjusts on migration & domestic security*



At the beginning of 2017, Merkel was considered the most powerful leader in Europe and there was little international discussion about any threat to her position. However, a lack of communication on public concerns about immigration and domestic security created risks in the elections and resulted in the worst results for the CDU

since WWII. While she was able to hold on to her position, this led to discussions of a post-Merkel era, which had previously been unimaginable. Merkel has since tried to respond to these risks and has begun addressing immigration and security, which has helped to stabilize her image and led to some limited improvement.

Global TV: Tone of coverage on Merkel, 2017



Basis: 2,533 reports on Merkel on international TV news

Terrorism concerns inescapable

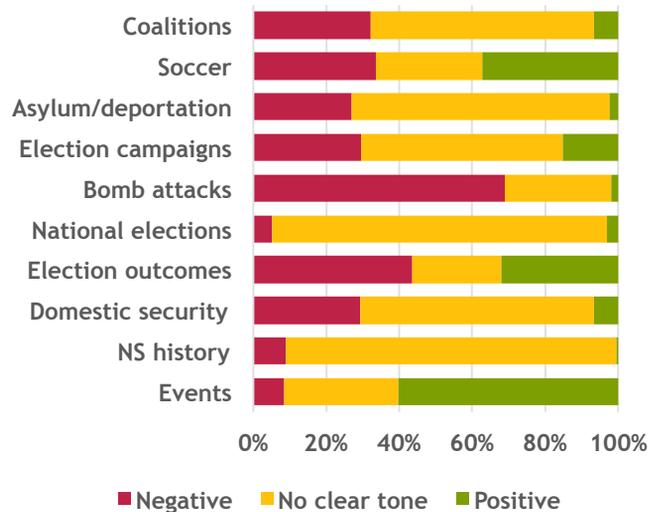
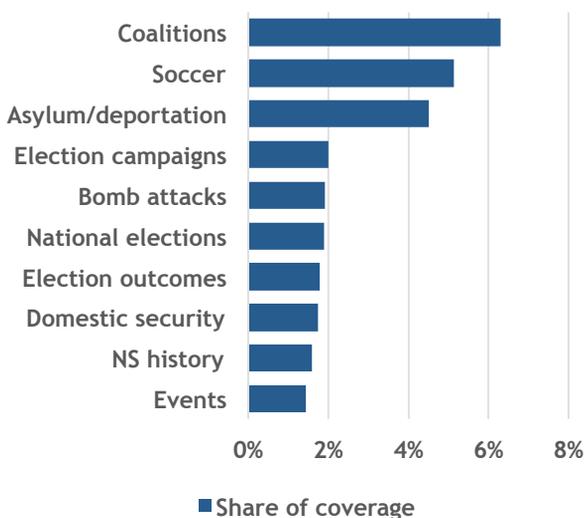
Coverage of sports, events helps balance image



On international TV news, Germany had a more well-rounded image than other nations. While common concerns like elections and terrorism were visible, other issues also rose to prominence. This included the ongoing migration/refugee crisis as well as matters of historical significance. However, lighter topics, such as sports and artistic events were also

visible, showing a society that continues to function positively even in the most serious of times. Tone for the coalitions formed in the 2017 elections was critical, suggesting a media message of dissatisfaction. Notably, key topics - such as the strong economy and the 500th anniversary of the Reformation did not make it into the top international news on Germany.

Global TV: Most visible topics regarding Germany on international TV news, 2017



Basis: 70,880 reports related to Germany on international TV news

Media praises German economy *Media looks for new global leadership*

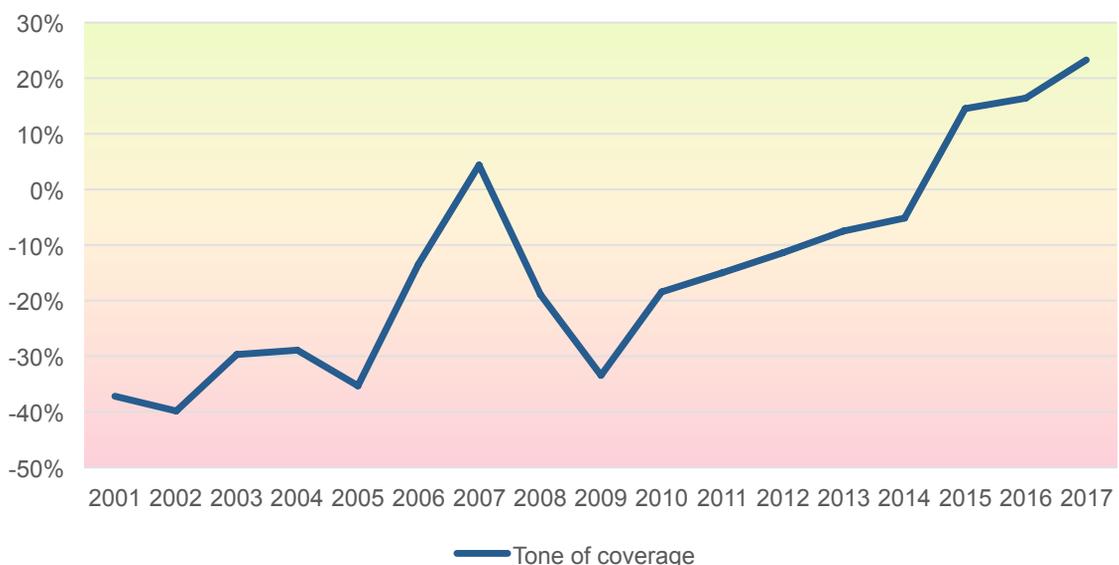


The media coverage tone on the German economy continued to improve in 2017. This was the result not only of Germany's economic strength and the success of many of its leading companies, but also a response to the geopolitical situation which has weakened the position of the U.K. (due to Brexit) and the U.S. (due to Trump).

Although some German

companies faced negativity due to scandals (e.g., emissions) this did not cross over to significantly hamper the economic assessment. With the U.K. isolating itself via Brexit and the U.S. pulling out of international agreements, Germany was positioned as the clear economic leader in the West.

Global media: Tone on the German economy on international TV news and in business media, 2017



Basis: 16,622 reports on the German economy on international TV news on in opinion-leading media

Macron steps into a positive spotlight *Election victory hailed by international media*



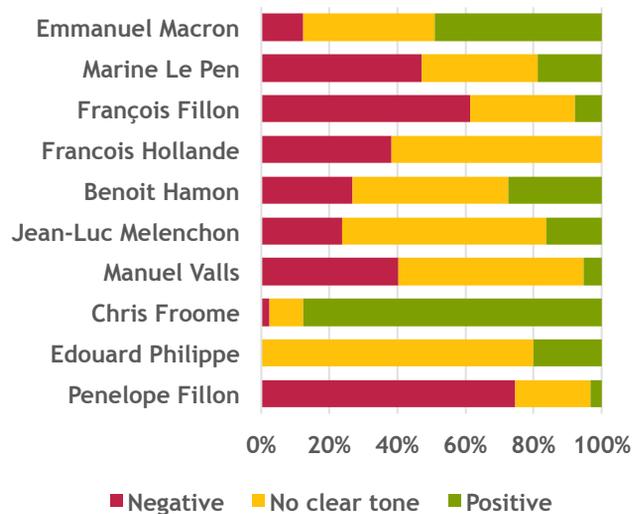
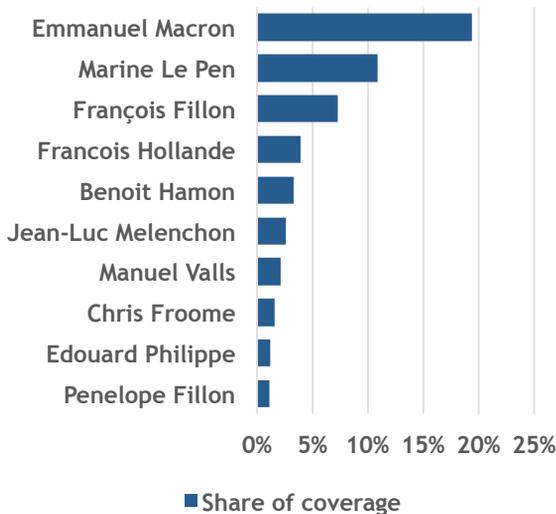
Emmanuel Macron's election victory in France was framed by the media as a repudiation of the nationalistic/isolationist tendencies that drove both the Brexit vote and the election of Donald Trump in 2017.

Macron continued to make positive headlines after his election as he made strong statements on climate change

and invited U.S. scientists whose research is being curtailed by the Trump administration to continue their work in France.

In addition to political protagonists, sports were strongly visible as regards France as British cyclist Chris Froome won the Tour de France. Doping allegations later in the year did not have time to impact his image significantly in 2017.

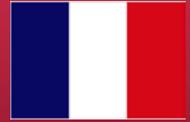
Global TV: Most visible protagonists on international TV news regarding France, 2017



Basis: 5,156 reports on protagonists associated with France

Terrorist attacks in focus

Frequent incidents provoke concern

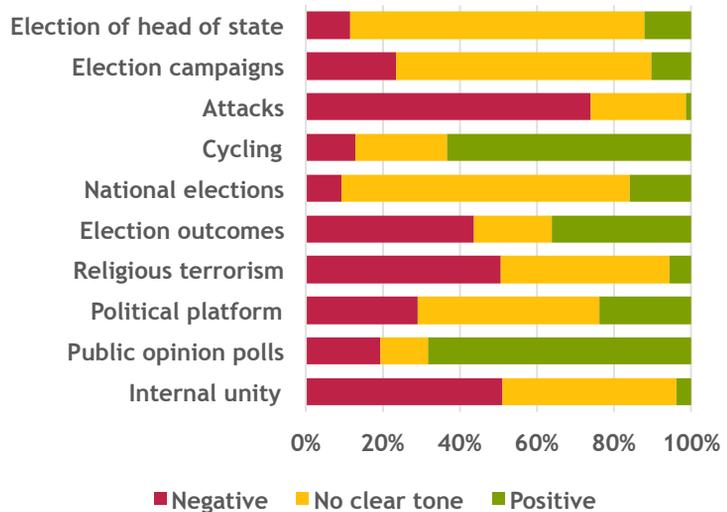
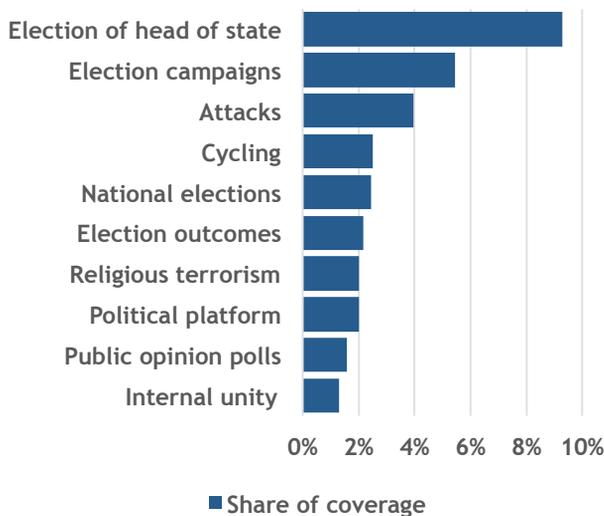


In addition to the focus on the French election and concerns about the far-right candidate, international TV media also focused on a series of terrorist attacks in France. While the death toll was limited, compared to previous years, the high profile locations (including the Champs-Elysees) made the events strongly visible

in international news.

All attacks were not related to Islamist terrorism, but it was only these attacks that received significant coverage. The prestige of the Tour de France - and the length of the event - helped to boost the country's image across international TV news, with ongoing coverage of the leaders. Negativity was limited despite concerns about doping.

Global TV: Most visible topics related to France on international TV news, 2017



Basis: 16,032 reports regarding France on international TV news

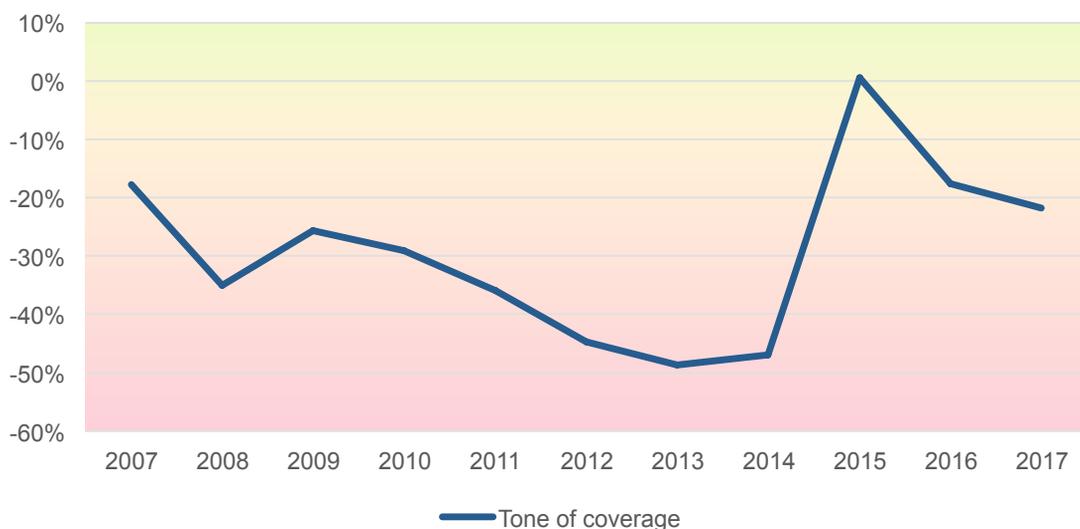
Tone on French economy likely to shift *A return to an upward media tone trajectory likely*



Media tone on the French economy has declined since a peak in 2015. However, the slide in tonality became less severe in 2017, and opportunities for France created by Brexit suggest that tonality may reverse course in 2018. Forecasts suggest that the economy in 2018 may have its biggest growth year since 2011 after surprise improvements in 2017.

Additionally, enthusiasm for Macron and his invitation to U.S. scientists who feel stifled in the current environment may also offer a boost ahead. The IMF has also encouraged Macron to use this moment to push through economic reforms that could also help the French economy - and the media coverage about it - continue to build growth and momentum.

Global media: Tone on the French economy on international TV news and in business media, 2017



Basis: 4,588 reports on the French economy on international TV news and in opinion-leading print media

Macron has best image in EU *Brexit weighs on the broader union*

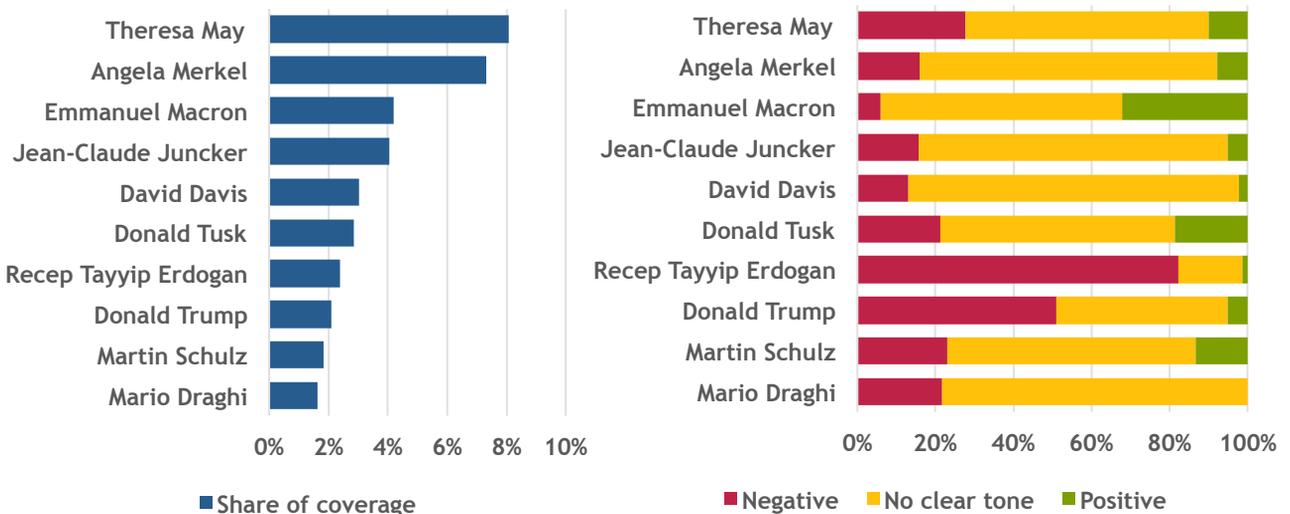


Coverage for the EU overall focused on protagonists involved in changing or preserving the union. While Theresa May was in focus due to the Brexit talks, so too was Turkey's Erdogan as the possibility of the EU expanding to include Turkey was also visible. However, strong criticism of Erdogan related to the rule of law and

constitutionality resulted in the media framing this expansion as unlikely.

Donald Trump's relationship with the EU was also in focus with a sharply negative tone as Trump's trips to Europe were met with international criticism on his policy and way of handling the meetings.

Global TV: Most visible protagonists related to Europe as a whole on international TV news, 2017



Basis: 2,817 reports on protagonists regarding Europe as a whole on international TV news

Future of the EU questioned

Will it continue to shrink? Can it grow?

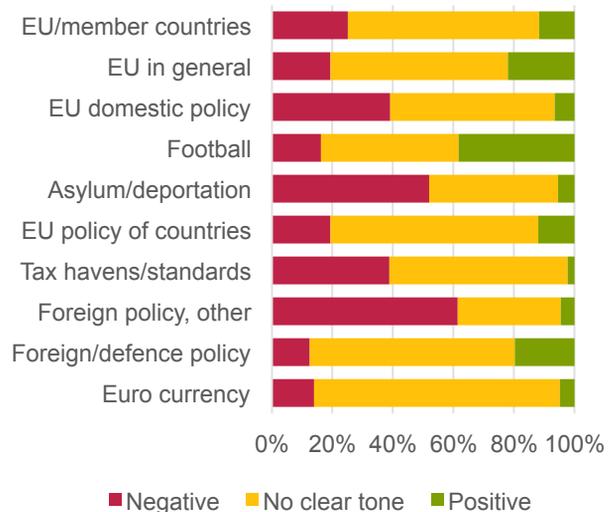
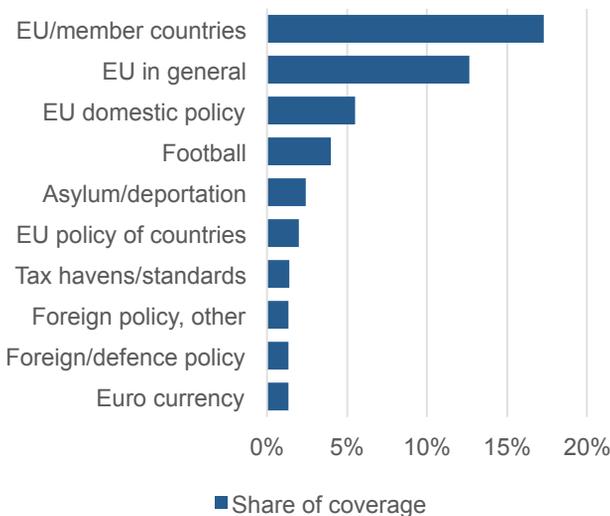


While general EU policy was in focus, coverage of Europe as a whole also looked at the migrant/refugee crisis as well as tax laws.

Concerns about the value of the currency were visible as Brexit negotiations resulted in currency fluctuations for both the euro and the pound.

The regional appreciation for soccer was strongly visible - so much so that it actually received more visibility than the discussion of asylum and deportation issues, highlighting how the media is able to set the agenda for individuals and what they care about based on their media consumption.

Global TV: Most visible topics regarding Europe as a whole on international TV news, 2017



Basis: 12,557 reports related to the EU in general on international TV news

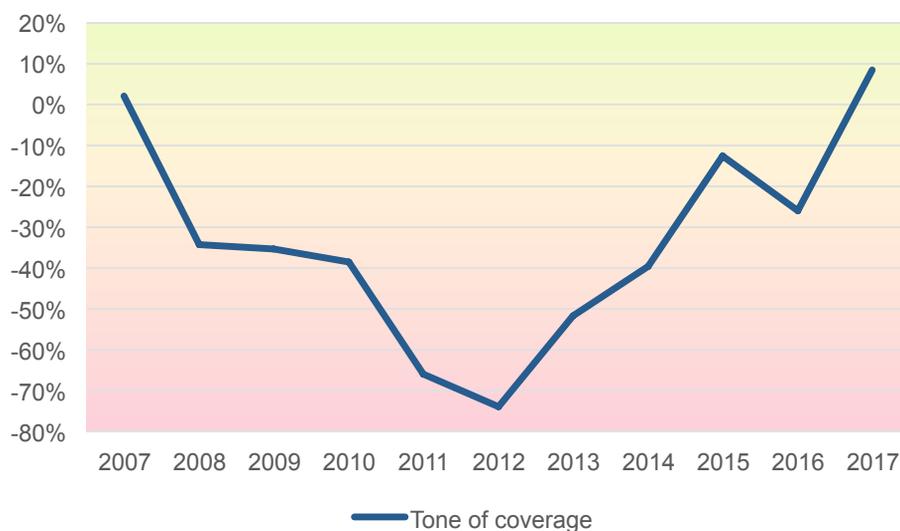
EU economy thrives despite concerns *Media positivity likely to help trend continue*



With France achieving unexpected growth in 2017 and continued strength in Germany, the overall economic image of the EU climbed. Overall, Europe had its best economic year in a decade and financial confidence reached a high not seen for 17 years and the media absolutely picked up the story. Part of this economic positivity was the

result of Brexit being framed as negative for the U.K., but not likely to have a significant negative impact on the EU. As long as the political union can be held together - and there is some concern due to far-right parties that prioritize nationalism over the continent's cooperation - media tone on the economy is likely to continue to improve, this also improving economic confidence in media audiences in response.

Global media: Tone on the EU economy on international TV news and in business media, 2017



Basis: 6,098 reports on the EU economy on international TV news and in opinion-leading business media

China image largely positive *But human rights weigh on image*

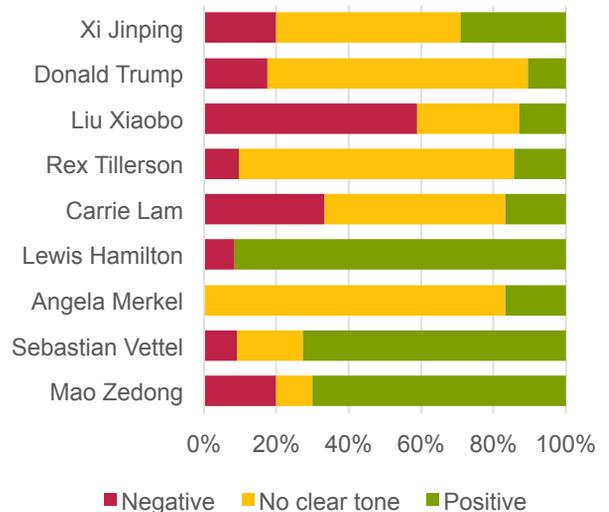
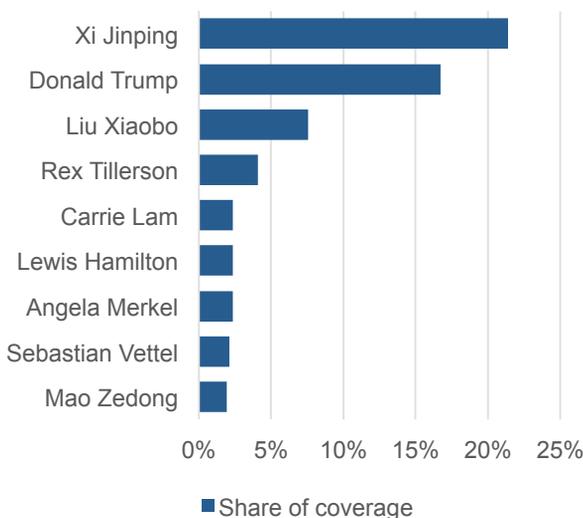


Chinese leader Xi Jinping had a positive image as China received an increased spotlight on both international issues and in relation to the crisis on the Korean peninsula. Media framed him as having growing importance on the global stage in response to the shifts in U.S. policy.

Most protagonists visible

related to China had a somewhat positive image - especially F1 drivers like Hamilton and Vettel. Politicians largely fared positively as well, but the death of Liu Xiaobo, a frequent critic of the government, resulted in sharp negativity. Hong Kong's leader Carrie Lam faced a tumultuous year. On China, Donald Trump only had a slight negative image.

Global TV: Most visible protagonists related to China on international TV news, 2017



Basis: 515 reports regarding China on international TV news

U.S.-China relationship changes

Diplomacy, trade in larger spotlight



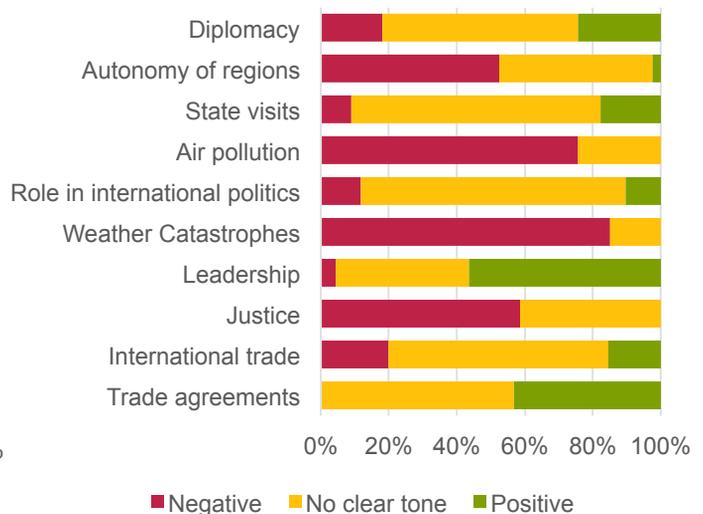
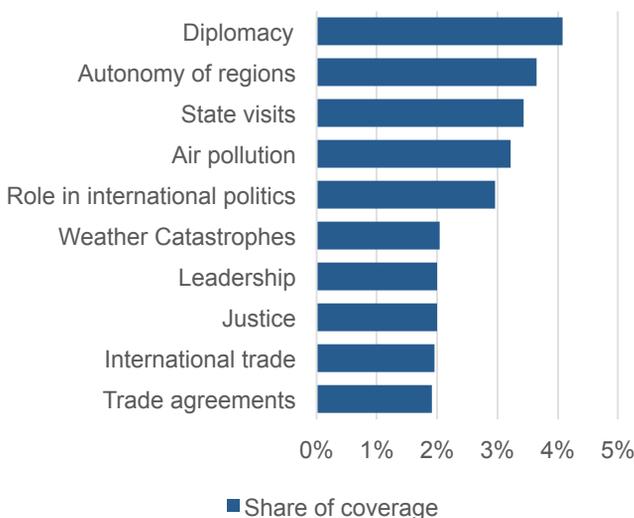
Coverage of China highlighted both its role on the international stage (e.g., diplomacy, state visits, and international trade issues) as well as internal concerns (e.g., autonomy of Hong Kong, weather disasters).

While the country received strong criticism on justice issues around the death of Liu

Xiaobo, it was praised on leadership and trade agreements as it stepped into a more prominent role after changes to US policy.

Concerns about the severe air pollution in the country, and its global impact lingered, placing China as one of a few countries who are regularly criticized on environmental topics.

Global TV: Most visible topics related to China on international TV news, 2017



Basis: 2,302 reports related to China on international TV news

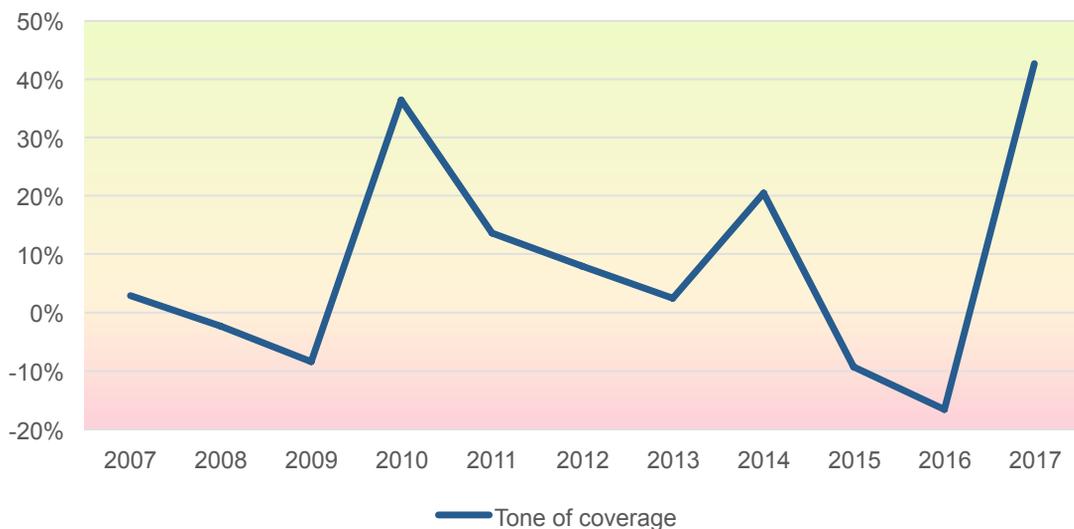


Explosive growth and volatile tone *As economy cools, media tone likely to shift*

China's economy beat forecasts in the first 9 months of 2017, which was reflected by the strong media tone. Additionally, the U.S. choosing to step away from international trade agreements left China as the most powerful economy remaining in some of those discussions. Where the economy will go next is, however, in question, with

slowing beginning at the end of 2017 and expected to accelerate in 2018. How the media will cover these developments, especially related to slowing production at factories and the cooling real estate market, is for now unclear, but volatility in the media tone is possible, which may impact investor sentiment and behavior in 2018 and beyond.

Global media: Tone on the Chinese economy on international TV news and in business media, 2017



Basis: 4,553 reports regarding the Chinese economy on international TV news and in opinion-leading business media

Sharp criticism for Turkey

Relationships with country no win for Merkel



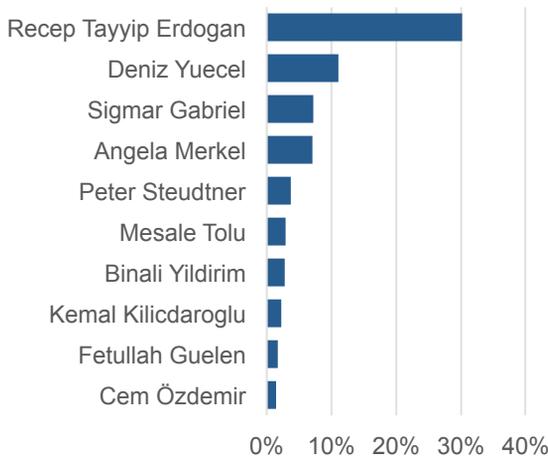
Coverage related to Turkey was strongly negative for most protagonists. This included both people in Turkey, but also politicians from the EU who received criticism when dealing with the nation.

Turkey's leader Erdogan was sharply criticized for authoritarian tendencies, crackdowns on journalists and

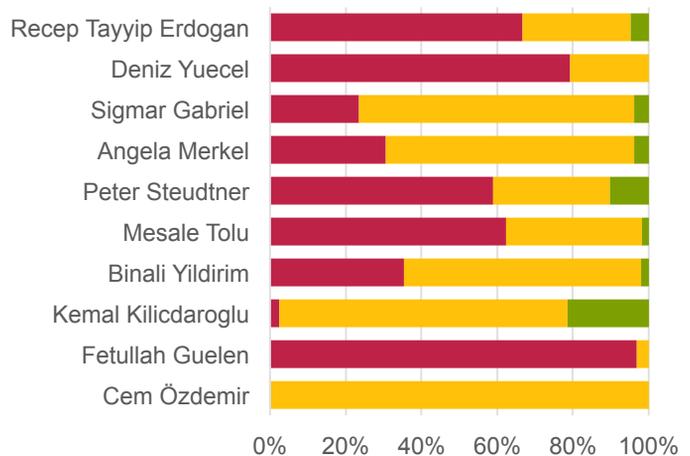
academics, and general concerns about the rule of law. When positivity was visible for him, it was often in the form of praise from U.S. president Trump, in stark contrast to statements from other Western allies.

Only Turkey's opposition leader, Kılıçdaroğlu, received media praise.

Global TV: Most visible protagonists related to Turkey on international TV news, 2017



■ Share of coverage



■ Negative ■ No clear tone ■ Positive

Basis: 1,832 reports regarding protagonists related to Turkey on international TV news

Concerns about constitution and justice

Authoritarian crackdown isolates Turkey

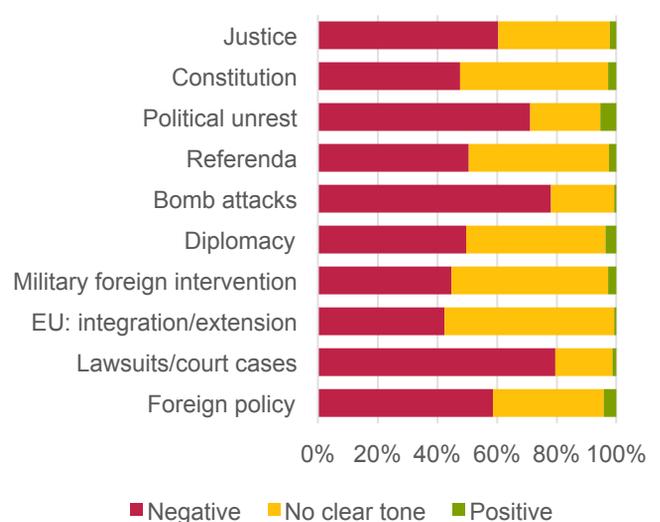
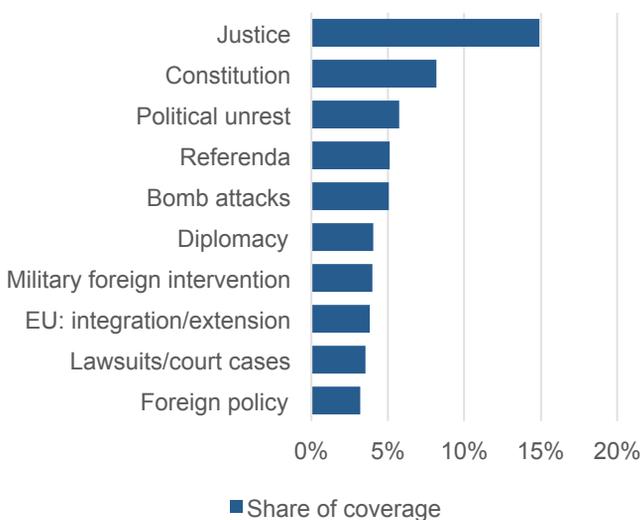


Over half of all coverage related to Turkey was negative. Concerns about justice, the constitution, and the rule of law were paramount. A crackdown on opposition journalist and political leaders led to international media coverage as they faced long jail sentences and Erdogan solidified power.

Terrorism was also a key topic in the coverage of Turkey as was its role in diplomacy between East and West.

The media did not devote time to other aspects of life in Turkey, framing it only as a chaotic and oppressive society, and underscoring the unlikelihood of its inclusion in the EU.

Global TV: Most visible topics related to Turkey on international TV news, 2017



Basis: 7,301 reports related to Turkey on international TV news

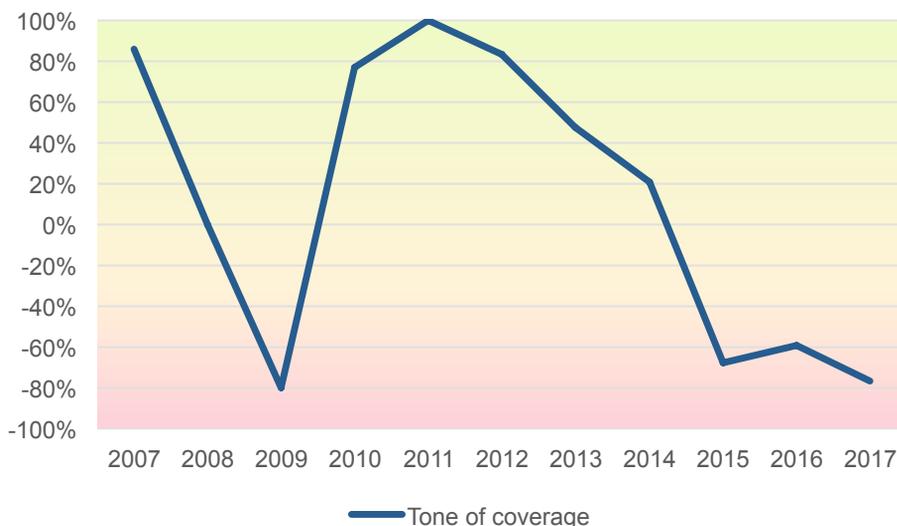
As EU hopes fade, media critical *Media tone on Turkish economy sharply negative*



Concerns about the rule of law, corruption, and the authoritarian policies of Erdogan have all contributed to negative media coverage on Turkey's economic future. With an effective moratorium on new countries joining the EU, Turkey also lacks the associated economic opportunity that seemed on the table for it earlier in the decade. Concerns about

terrorism and internal violence have also dampened tourism activity, creating another angle for negative media coverage on the country's economy. Additionally, Turkey has also faced pressures from migration coming out of conflicts in the Middle East which has not helped to stabilize the media image. What was once categorized by the media as a frontier market is now just the recipient of significant caution.

Global media: Tone on the Turkish economy on international TV news and in business media, 2017



Basis: 176 reports on the Turkish economy on international TV news and in opinion-leading business media

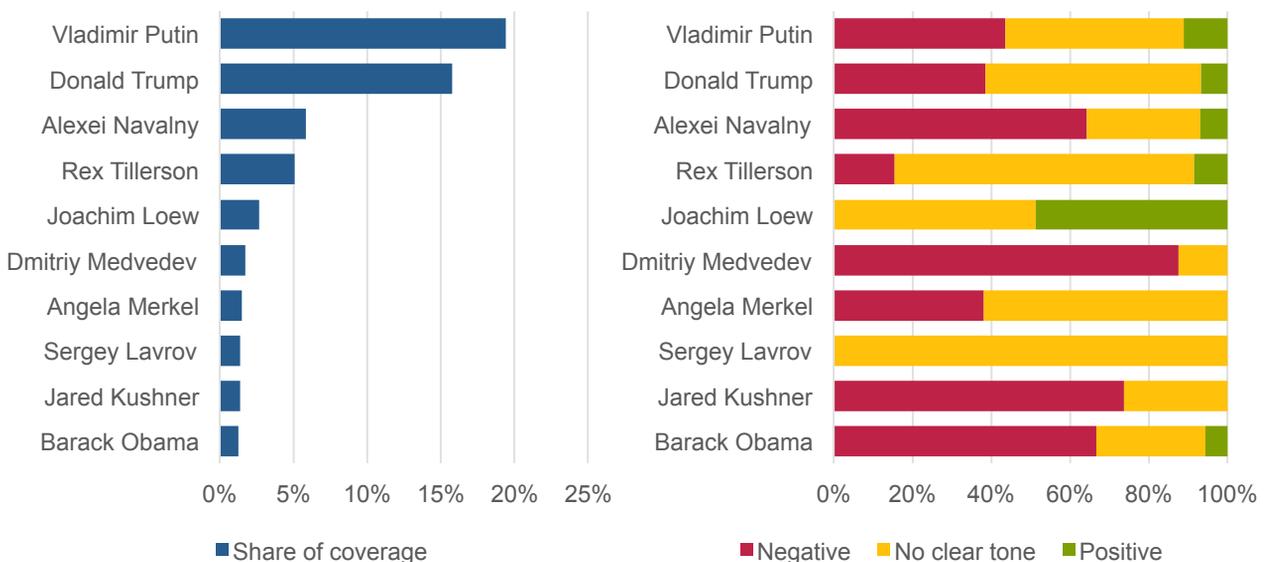
Focus on Russia-U.S. relations *Opposition leader's peril visible*



International media coverage regarding Russia focused strongly on Putin and his relationship with Donald Trump, and to a lesser extent, U.S. Secretary of State Rex Tillerson. The Russian prime minister, Medvedev, who has switched positions periodically to allow Putin to maintain control of Russia, received the

most sharply negative coverage. While Putin and those associated with him also received sharply negative coverage from the press, Russian opposition leader Navalny also received strong negativity as he was barred from running for president by the Russian government and a target of physical attacks.

Global TV: Most visible protagonists regarding Russia on international TV news, 2017



Basis: 1,398 reports regarding protagonists associated with Russia on international TV news

Political unrest highlighted *International sanctions also harm image*



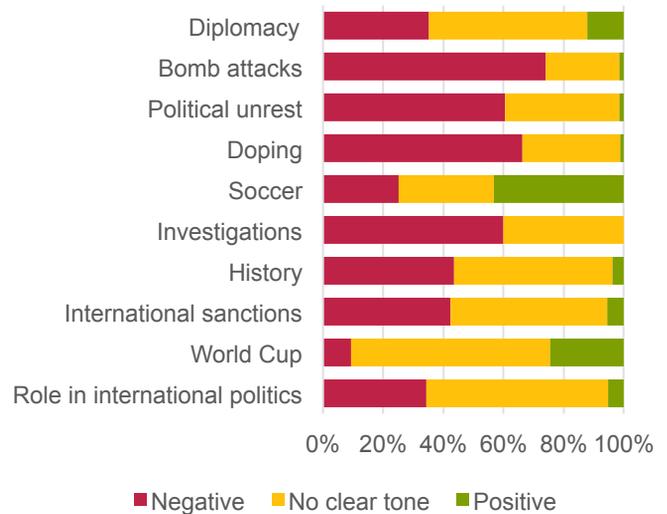
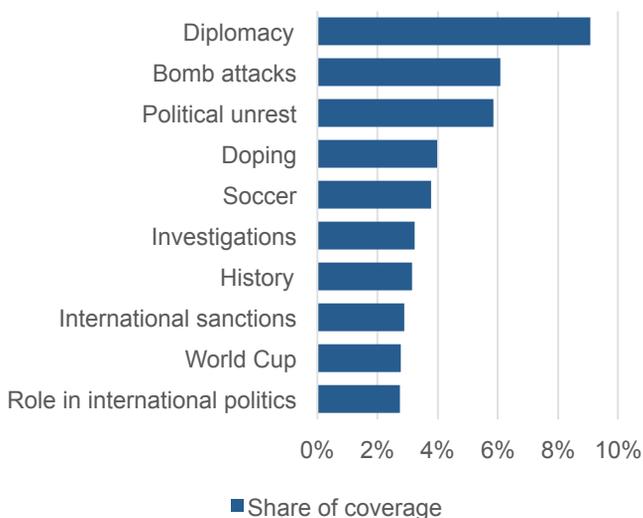
Political unrest and violence within Russia was strongly visible on international TV news, but diplomatic issues with Russia were the most visible as the country was accused of meddling in elections in the U.S., Germany, and France. International sanctions regarding the Ukraine situation were also part of the

media agenda.

Sporting issues, often clear positives for a country, were also not without controversy, as doping allegations barred Russia from participating under its flag in the 2018 Winter Olympics.

The upcoming World Cup in Russia was met more positively, but warnings about the political climate for visitors were visible.

Global TV: Most visible topics regarding Russia on international TV news, 2017



Basis: 4,247 reports related to Russia on international TV news

Media critical of Russian economy *Tone is volatile, but consistently negative*



Coverage of the Russian economy has been consistently negative since 2007. While there was some improvement in the media tone in 2017 as the economy returned to growth, negativity remained elevated as issues of corruption, imprisonment of former officials critical of Putin, and the small size of the economy relative to the population was visible on a

consistent basis. Coverage of foreign investors leaving the market ahead of anticipated sanctions from the U.S. and an uncertain sentiment on international relations overall also weighed on the economic image. The media also reported on how the economic power of both India and China also threatened to sideline some of Russia's economic ambitions.

Global media: Tone on the Russian economy on international TV news and in business media, 2017



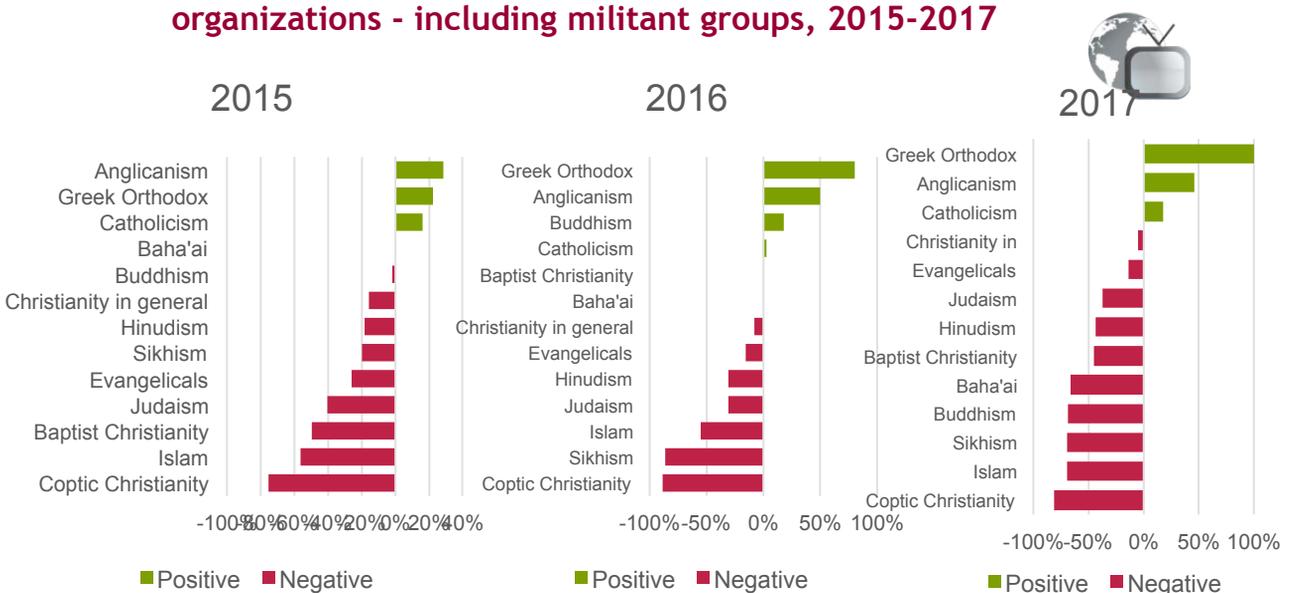
Basis: 825 reports on the Russia economy on international TV and in opinion-leading business media

Media treats Christians well *Other faiths have image struggle*

Coverage of religions on international TV news is largely negative. While some faiths consistently experience a positive image (e.g., Anglicanism) or a near neutral tone (e.g., Christianity overall), others receive constant negative portrayal. In the case of Islam, this negativity relates largely, but not exclusively, to stereotypes about terrorism. Anti-Muslim

crimes are, however, also visible. Judaism also suffers from a less severe, but similar mix of negativity. Meanwhile, Coptic Christians consistently fare the worst in the media due to attacks against them. Major events, such as the 500th anniversary of the Reformation, also impacted the distribution of coverage and tone on religious groups in 2017.

Tone of coverage of religion, religious people, and organizations - including militant groups, 2015-2017



Basis: 12,533 reports on religions on international TV media

U.S. more critical of Muslims than rest of world *Tone has worsened again in 2016, 2017*

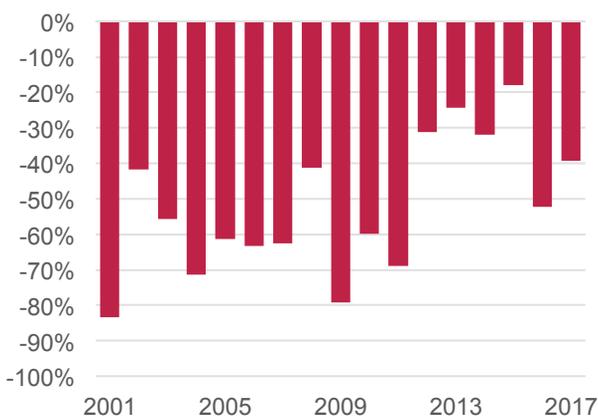
Coverage of Muslims on international TV news has been negative since 2001. While this negativity has lessened outside of the U.S., within the U.S., extremely negative coverage of Muslims remains. Additionally, improvement to the image of Muslims seen in 2012 - 2015 has been lost with negativity increasing again sharply during the divisive political campaign of 2016, which

often included anti-Muslim rhetoric. Attempts at banning people from some Muslim majority countries from entering the U.S. in 2017 has also resulted in a negative image. Coverage of Muslims broadened on international news in 2017 and often framed Muslim as the subject of attacks with media attention given to the Rohingya crisis and the situation in Myanmar.

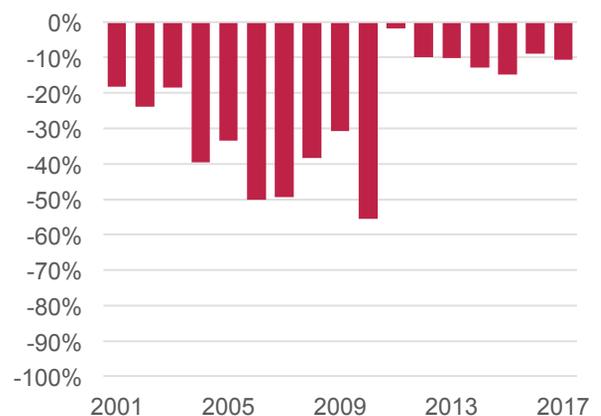
Tone of coverage of Islam, Muslims and Muslim organizations - including militant groups, 2001-2017



US media



International media



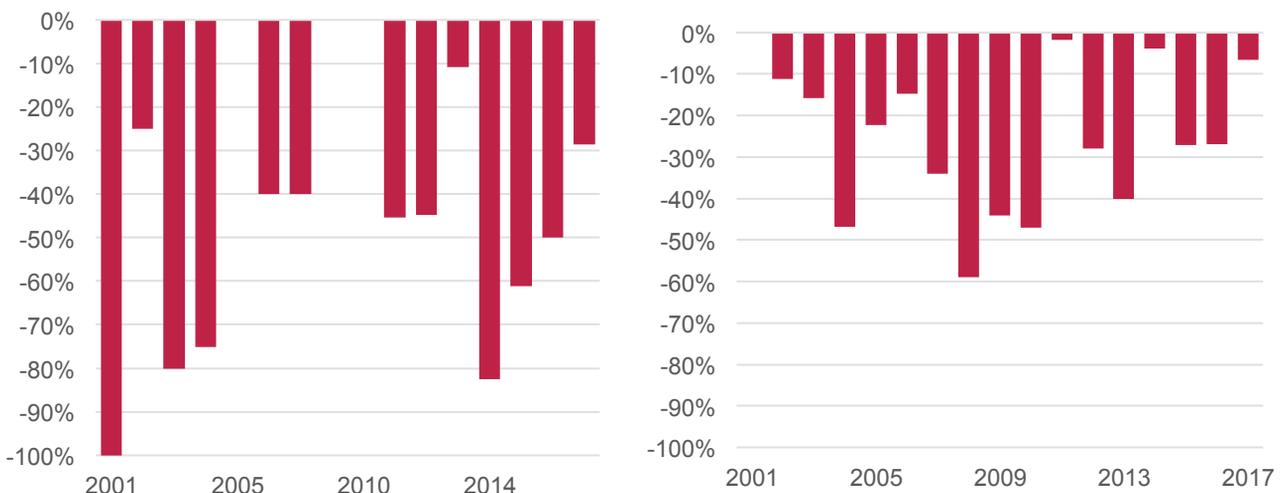
Basis: 12,533 reports on religions on international TV media

Judaism faces global negativity *But tone is harsher in the U.S.*

While U.S. TV media is more critical of Judaism and Jewish people than international TV news, it's overall tone on Jewish people is more similar to the rest of the world than it is in regard to Muslims. While anti-Jewish content is often more "coded" on TV news than anti-Muslim content

(e.g., references to "Soros" or "liberal elites") a mix of criticism of Jewish people and attacks against Jewish people are both visible on TV. In 2017 this picture of Judaism was further complicated by the conservative Jewish faith of Trump's daughter Ivanka.

Tone of coverage of Jewish people, Judaism, organizations - including militant groups, 2001-2017



Basis: 12,533 reports on religions on international TV media

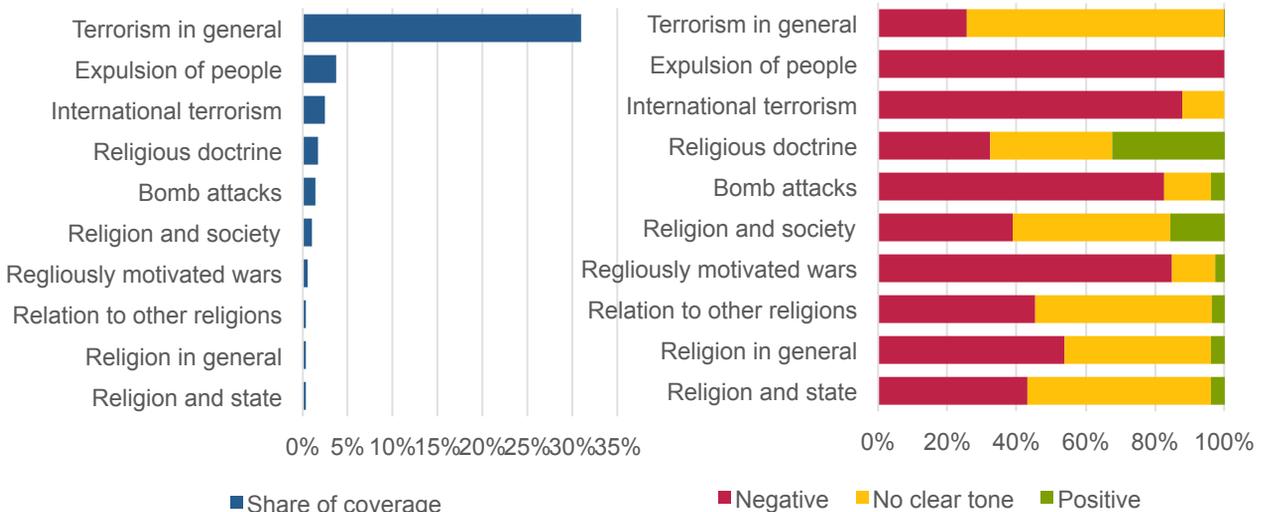
Terrorism dominates coverage of Muslims

Little understanding of moderate Islam presented by media

Coverage on Muslims focused on a variety of aspects of terrorism. Much less visible was coverage about religious beliefs and the interaction between Islam and the wider society. The framing of this coverage highlights a media that is providing extremely limited coverage on moderate

Muslim believes and are still framing those of the Islamic faith as outside of the larger society portrayed on international TV news. This creates an ongoing barrier to understanding, as it does not highlight that moderates of all faiths can be united against violent extremism of all faiths.

Tone of coverage of Islam, Muslims and Muslim organizations - including militant groups, 2001-2017



Basis: 12,533 reports on religions on international TV media

1. Executive Summary
2. Methodology: Scenario Building
3. Expert Voices
4. Drivers of Global Change
 - i. Political Challenges: Shifts in global power
 - ii. Cultural Challenges: Religious bias and misunderstandings
5. **Agenda Setting**
6. Global Youth Poll
7. Appendix

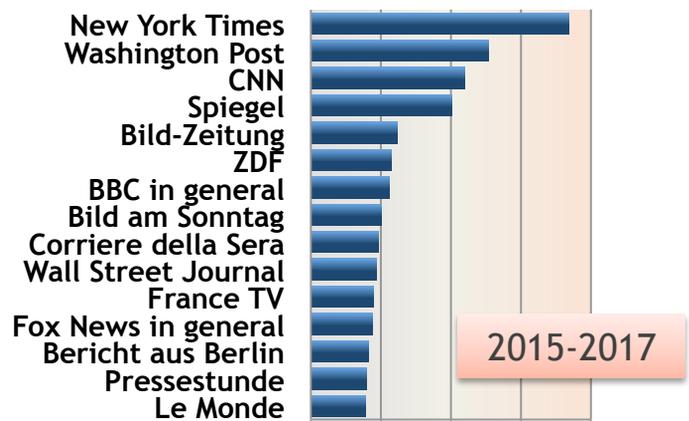
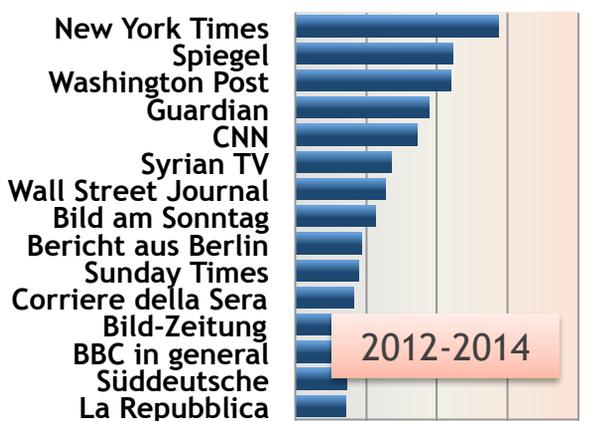
The New York Times helps set the agenda The Washington Post most up

The New York Times has remained the most quoted newspaper by international TV news, making it a key agenda setter. The Washington Post has gained, however, propelled in part by strong investigative reporting and in-depth reporting on the Trump administration. Spiegel has dropped somewhat from its

previous position, but still remains the leading agenda-setter outside of English-language media sources. Which subjects are most in the news have some impact on which sources are most cited. For example the BBC's prominence as a quoted media source as the world has focused on Brexit.

Cited media in international TV news

Most quoted media in international TV news, 2012-2014 and 2015-2017



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number of citations

Basis: 8,449 / 10,642 citations in international TV news

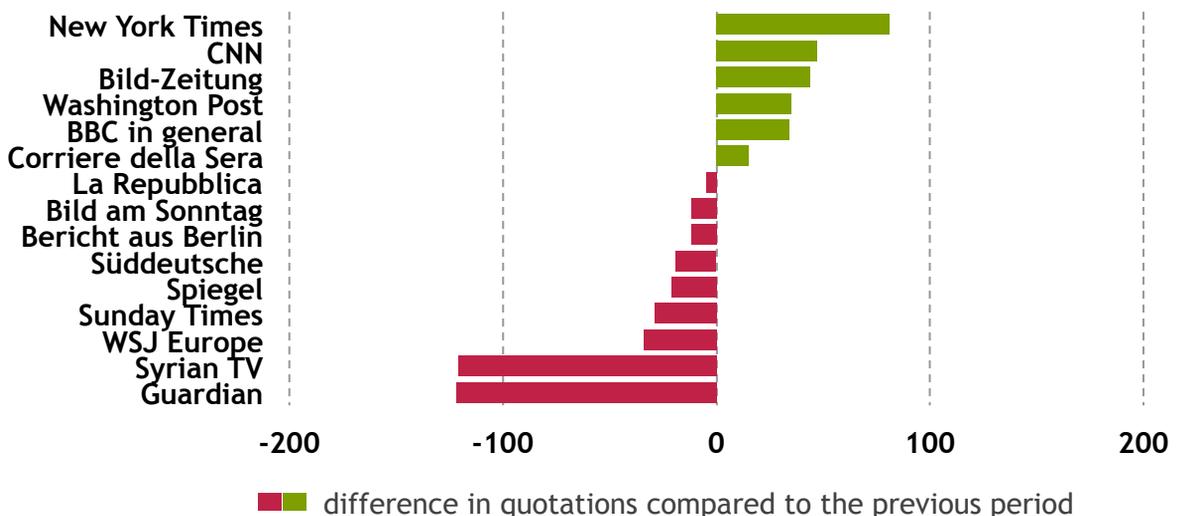
Syrian media no longer significantly visible *Deterioration of situation in country responsible*

Bild-Zeitung and *Corriere della Sera* were the two non-English language publications that increased their influence as a quoted source on international TV news over the last few years. Otherwise, visibility growth was largely U.S. centric outside of the strong performance of the

BBC. Violent conflict reduced the visibility of Syrian TV as the nation suffered large-scale destruction in its civil war. There was a similar level of a drop in visibility for the U.K.'s *Guardian*, although the source of this reduction in quotations for this left-leaning paper was not clear.

Cited media in international TV news

Winners and losers quoted media in international TV news, 2012-2014 and 2015-2017



Basis: 8,449 / 10,642 citations in international TV news

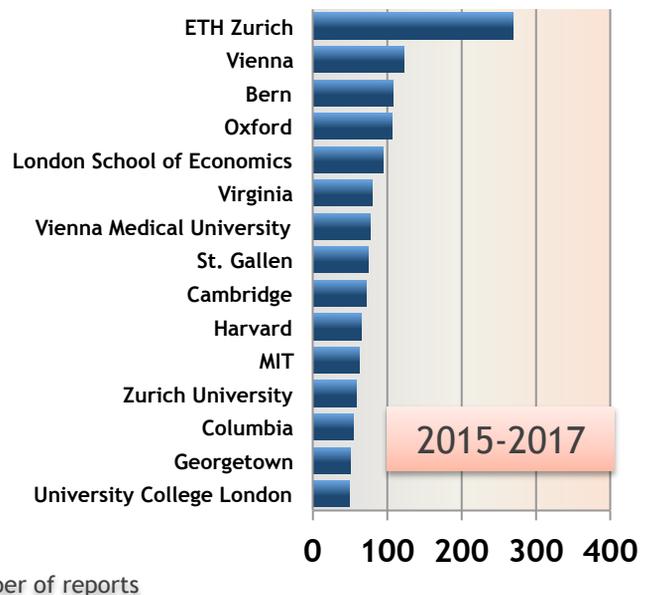
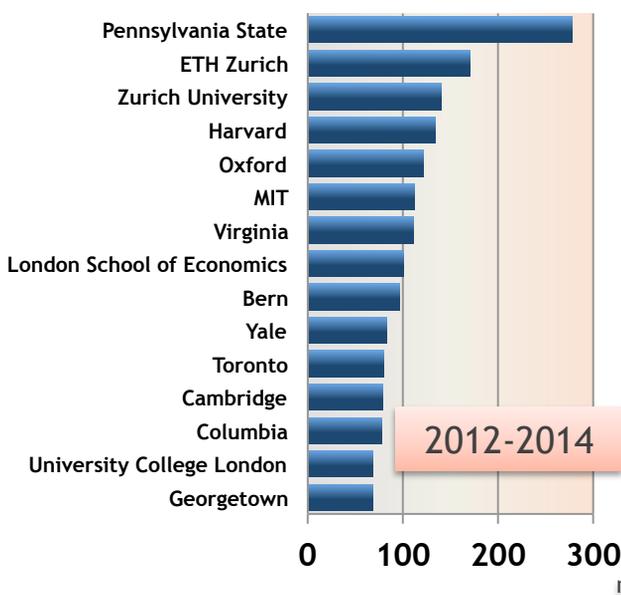
European universities lead in references on TV *Without scandals U.S. universities barely seen*

The expertise of European universities is frequently quoted on international TV news. U.S. universities have far less visibility. Past coverage of Penn State University was associated with a child sex abuse scandal connected with a former athletics coach. Once that

story faded from the news, so did that institution. Key areas of research such as economics, political science, and health and medical topics were key drivers of university visibility in the media. No-medical science stories also contributed to awareness but at a lower rate.

Most mentioned universities in international TV news

Volume of coverage on universities in international TV news, 2012-2014 and 2015-2017



Basis: 6,954 / 4,791 reports on universities and business schools in international TV news

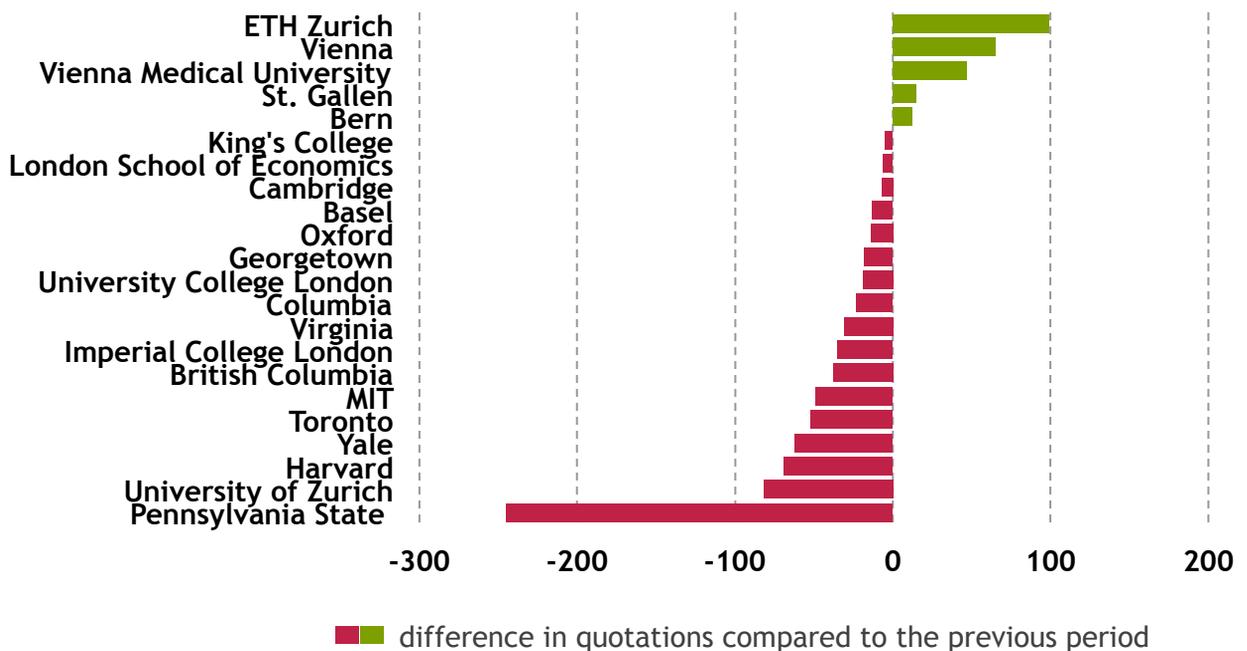
Most universities see a decline in visibility *But Swiss and Austrian universities increase visibility*

ETH Zurich's strong visibility was attributed to diversified expertise on key issues and significant medical research. Notably the university was successful at being referenced in media across multiple languages, positioning as a truly international expert. While other universities might

have been disappointed with a decrease in TV visibility, for Penn State this decline was likely a relief, although it did nothing to help correct its image after the scandal. Visibility declines for other U.S. universities were possibly attributed to an anti-science bias in U.S. culture and media.

Most mentioned universities in international TV news

Winners and losers in coverage on universities in international TV news, 2012-2014 and 2015-2017



Basis: 6,954 / 4,791 reports on universities and business schools in international TV news

U.S. universities visible in business media

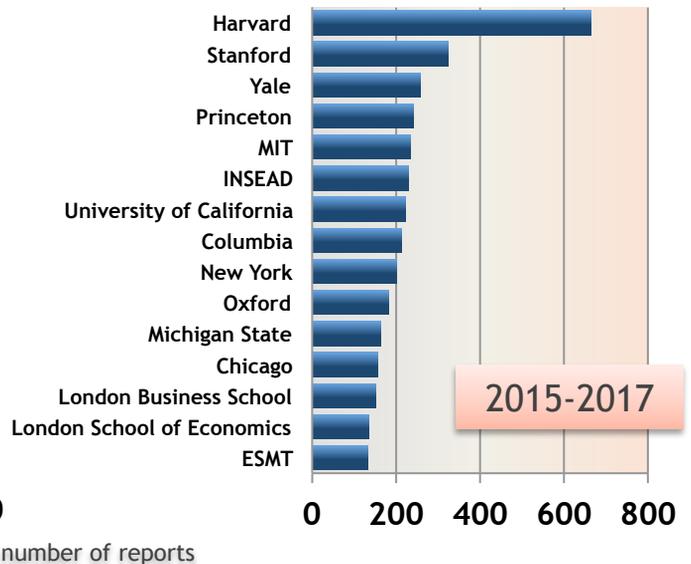
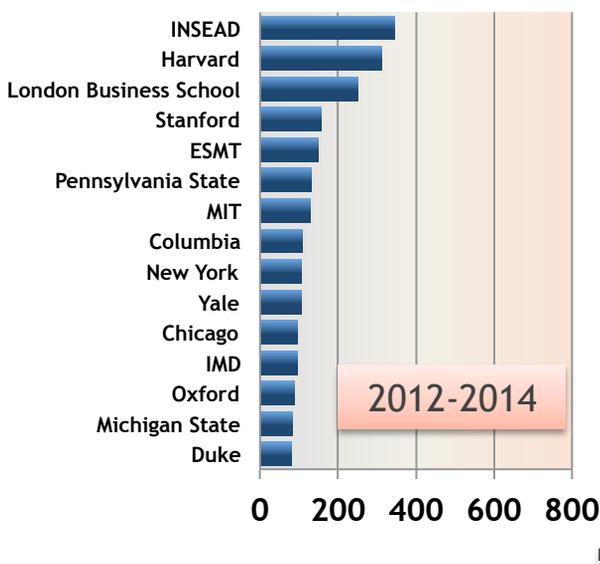
Business media looks to U.S. expertise

The distribution of visible universities was much different in business media than on TV. The *Wall Street Journal* was a frequent user of expertise from universities with its news selection often focuses on leading U.S. institutions. In business press over the last few years, the

most visible universities were all from the U.S., along with some visibility for INSEAD, London Business School, and the London School of Economics. INSEAD was particularly visible on topics related to global business and cooperations across different regions.

Most mentioned universities, global business media

Volume of coverage on universities in global business papers, 2012-2014 and 2015-2017



Basis: 5,888 / 12,020 reports on universities and business schools in global business papers

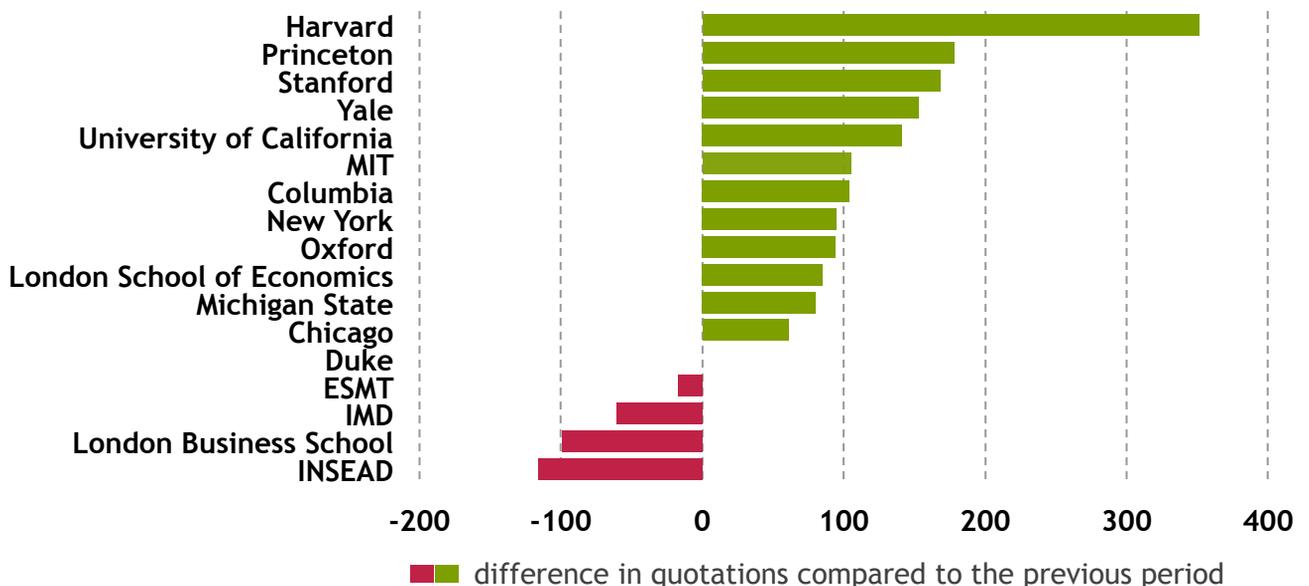
Shift towards citing U.S. universities visible *Suggests a U.S. centric focus in business media*

A significant shift towards references to U.S. universities in business media in recent years suggests a clear focus on U.S. research and business concerns beyond what is expected from the centrality of the U.S.-based *The Wall Street Journal*. Harvard was visible on medical, economic

and political research. Meanwhile, amid these gains, Oxford and the London School of Economics also gained in visibility. Despite still being reasonably visible overall, ISEAD's level of media coverage dropped significantly, although it still has a large enough platform from which to try to regain its media position in the future.

Most mentioned universities, global business media

Winners and losers in coverage on universities in global business papers, 2012-2014 and 2015-2017



Basis: 5,888 / 12,020 reports on universities and business schools in global business papers

U.S. election issues impact TV think tank visibility

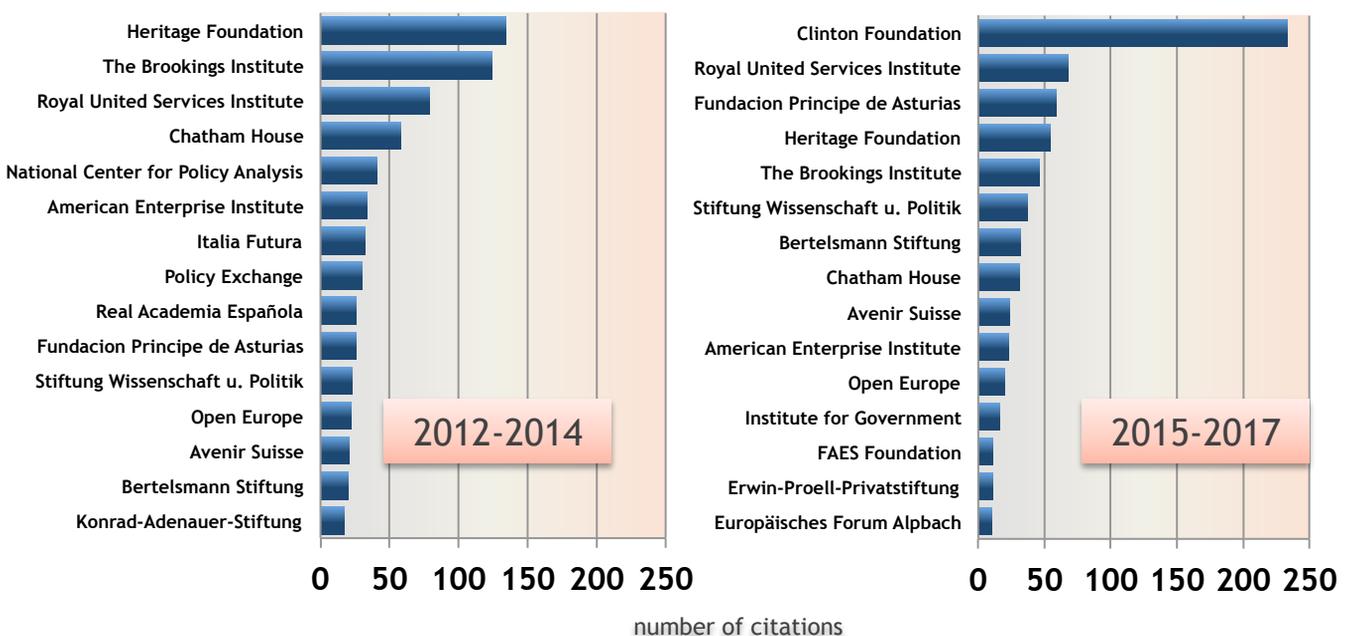
Clinton Foundation controversies drive coverage

Think tank visibility on international TV news has been fairly diverse in terms of where think tanks are based and what issues they focus on. While much of the visibility for think tanks has related to their expertise, awareness was also driven by other concerns. Particularly, there was a

significant media focus on the Clinton Foundation throughout the 2016 U.S. presidential campaign and into 2017 as Donald Trump accused the group of criminal wrong-doing amid charges and counter charges. The actual activities of the Clinton Foundation were rarely visible.

Most mentioned think tanks in international TV news

Volume of coverage on think tanks in international TV news, 2012-2014 and 2015-2017



Basis: 1,725 / 1,538 reports on think tanks in international TV news

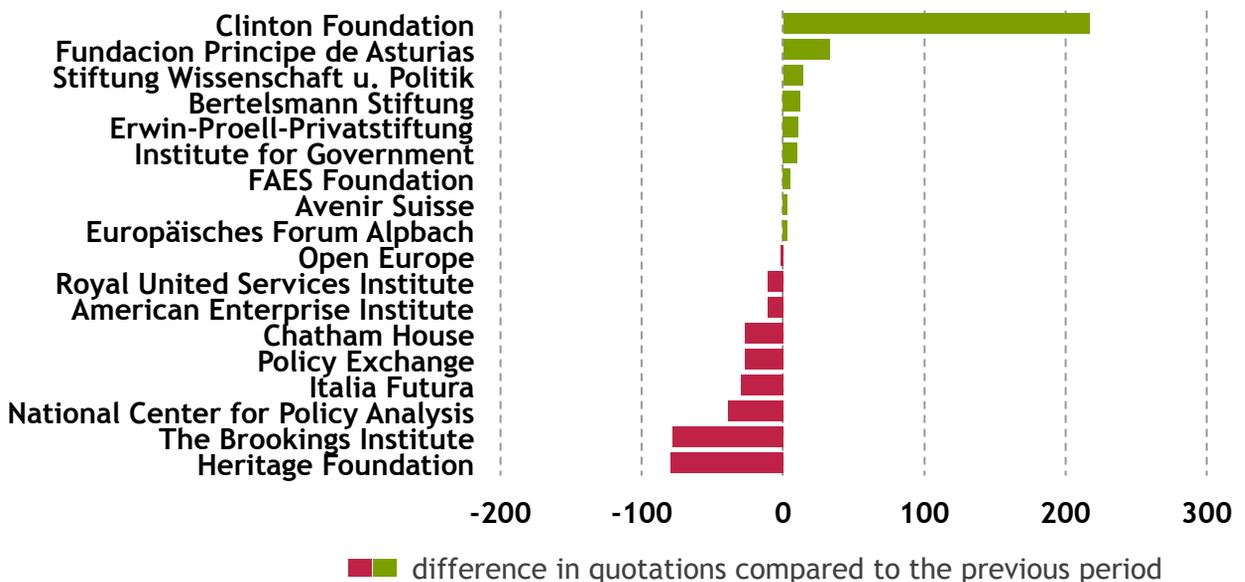
European think tanks increase visibility *Clinton Foundation overshadows other U.S. think tanks*

The sharp increase in visibility for the Clinton Foundation was driven by highly partisan political discussions of the organization's purpose. This has ranged from questions about access donors to the foundation might have had to Hillary Clinton if she won the presidency to conspiracy

theories for which there is no substantive media or law enforcement support. Because this drowned out much visibility of other think tanks in the U.S., most other think tanks that increased their media visibility in this period were based in Europe and focused on political issues.

Most mentioned think tanks in international TV news

Winners and losers in coverage on think tanks in international TV news, 2012-2014 and 2015-2017



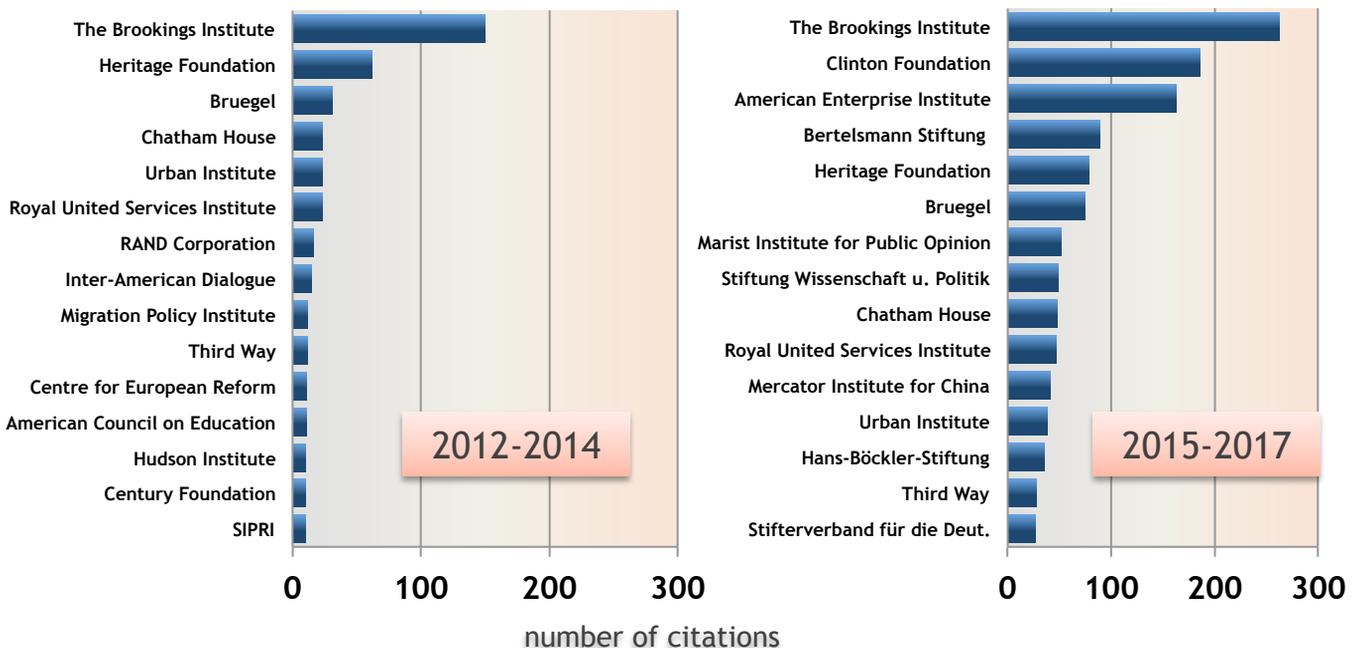
Basis: 1,725 / 1,538 reports on think tanks in international TV news

Brookings Institute most visible in business media *Clinton Foundation controversies also strongly visible*

The Brookings Institute has consistently been the most visible think tank in international opinion-leading business media since 2012. Even the significant focus on the Clinton Foundation could not shift it from this lead position. Think tanks which are associated with conservative values, such

as The Heritage Foundation, showed greater visibility in business media than on TV media. Think tanks focusing on specific regions, such as the Mercator Institute for China Studies, also had visibility as business media sought to provide a global investing perspective.

Most mentioned think tanks, global business media *Volume of coverage on think tanks in global business papers, 2012-2014 and 2015-2017*



Basis: 952 / 2.741 reports on think tanks in global business papers

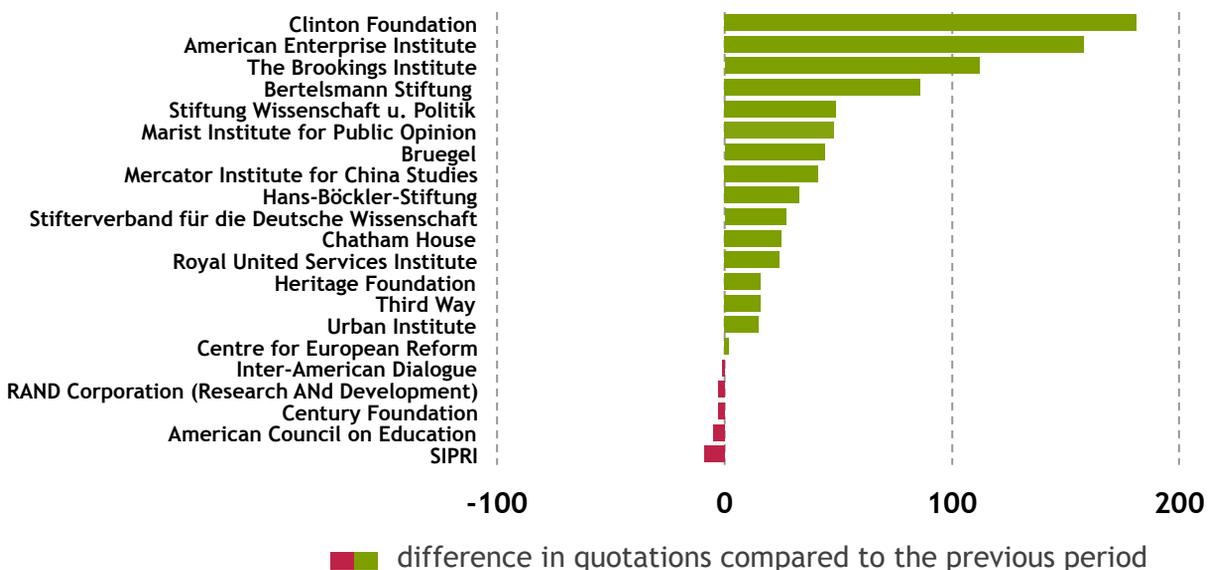
Political news drives awareness for think tanks *Phenomenon is visible in both Europe and the U.S.*

After the Clinton Foundation, which experienced news coverage atypical of most think tanks, the American Enterprise Foundation had the most significant increase in visibility. The Brookings Institute was able to maintain its overall lead in visibility by also expanding its awareness

in the media. The Marist Institute for Public Opinion was, like many think tanks, able to grow its visibility in relation to election polling on both candidates and values in 2016 and 2017. Few think tanks saw reduced visibility, and this decrease was minor, although led by SIPRI.

Most mentioned think tanks in international TV news

Winners and losers in coverage on think tanks in international TV news, 2012-2014 and 2015-2017



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2. Methodology: Scenario Building
3. Expert Voices
4. Drivers of Global Change
 - i. Political Challenges: Shifts in global power
 - ii. Cultural Challenges: Religious bias and misunderstandings
5. Agenda Setting
6. **Global Youth Poll**
7. Appendix

Taking the next generation seriously - Implementing the first Global Youth Poll

Roland Schatz

The September 2015 agreement on the Sustainable Development Goals requires that all states implement the 17 SDGs by 2030. By then, the next generation will be starting to take over from today's leaders - but no one yet knows what the next generation is thinking about these global goals. Therefore, the General Director of the UN in Geneva, Michael Moller, has invited leaders from the largest youth organizations to meet at the Palais des Nations with the head of the International Parliamentary Union, the representatives of the United Indigenous Nations, experts from the World Association of Public Opinion Scholars, and the Global Sustainability Index Institute Foundation to develop a feasible concept that reaches out to the next generation on a regular basis to ensure that their opinions and experiences become transparent and are heard by the current leaders of the world.

The Global Youth Poll, provides reliable data updated quarterly. In the time of the largest migration since World War II, it makes sense to understand what the next generation thinks about the quality of their lives in their countries, how satisfied they are with their

educations, their job prospects, and the ability of their regions to deal with environmental challenges. 70 years after the YMCA was awarded the Nobel Peace Prize for their global footprint amongst the next generation, they are partnering with their 60 million members with the Foundation for Global Community Health and their school program Brain-Breaks, reaching 3 million children in 72 countries daily. In support of the UN, the IPU and the United Indigenous Nations, the Big6 and the UNGSII are building on the experience of existing polls amongst young people in order to create a scientific database to understand what youth across the world have in common, and what differentiates them, across boundaries of religion, race, and region. The survey will gauge how satisfied they are already with the implementation of the SDGs and where they see room for improvement. In order to make sure that the opinion of the next generation is taken seriously the UN, IPU, and UIN offer that youth representatives will have the opportunity to present the results together with national experts from academia on both national and international platforms.

Taking the next generation seriously - Implementing the first Global Youth Poll

Roland Schatz

Media partnerships will make sure, that the world is permanently informed about the results.

The deliverables:

- A publicly available questionnaire, 15 minutes long, with a sample size of 1,000 split into 4 representative age groups: 10-14, 15-19, 20-24 and 25-29. The sample and each sub-sample of 250 young people will be selected according to academic standards ensuring a solid mix of urban-rural, diverse educational, gender, religious, and wealth backgrounds. The samples will be partially refreshed each quarter, ensuring the continued representativeness of the sample and allowing for over-time comparisons of the same respondents.
- The pollsters will be trained to run the interviews amongst their age-groups and equipped with tablet computers to ensure fast analysis and aid in the collection of high quality data. While the interviews will only take 15 minutes, each pollster will take another 15 minutes in order to explain the purpose of the Global Youth Poll, show previous results and educate in a 1:1 situation the value & risks of polling.
- An academic advisory board under the leadership of Professor Dan Cassino (FDU and AAPOR Board Member) will supervise all stages of the polls, including the interpretations and presentations of the results to the national parliaments and others.
- UNGSII will ensure that teaching material to empower all involved to understand the advantages and shortcomings of polling will become part of the education program
- First results will be presented Q2 2018
- WAPOR is accompanying the publishing and debate amongst the global experts on opinion polling.

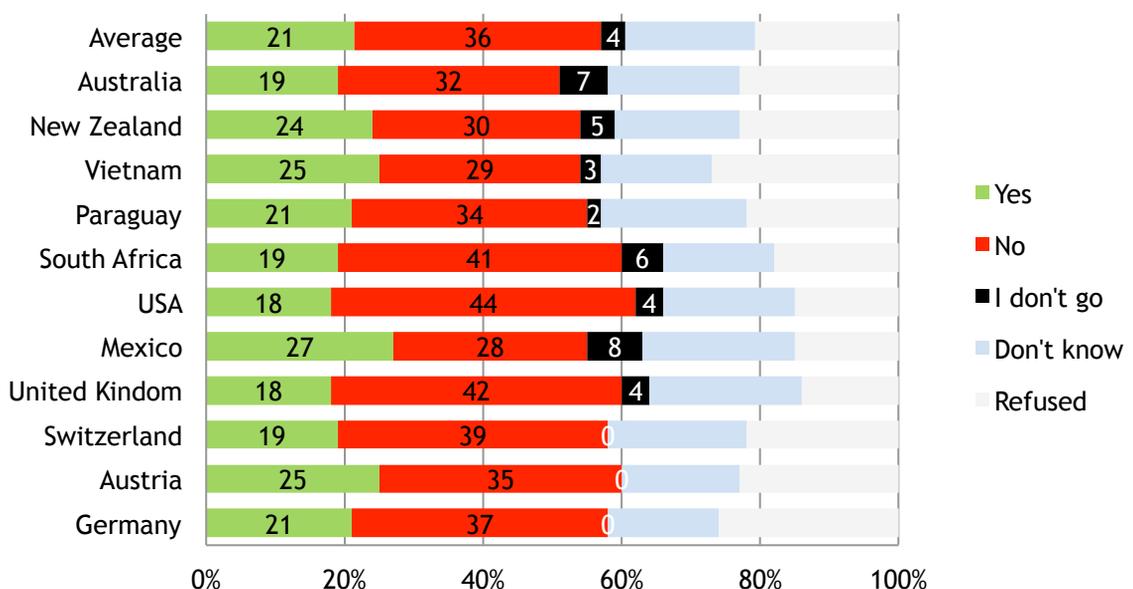
Schools have to change, no matter in which country

Over a third of students don't enjoy their time learning

The most alarming result from the test run of the Global Youth Poll is the common agreement by all participants that school is not a place they enjoy spending their time. Vietnam and Mexico show the best results among the 11 different regions, where only 29% and 28% of those interviewed answered with a clear NO when asked if they had enjoyed their time at school in 2017. Other countries such as the U.S. are clear with 44% of young people turning their back to the version of education they experience from secondary school up to university. In the U.K. the frustration is at 42% of the respondents.

Together with the other questions asked around education in the Global Youth Poll this sends a stark alert to all in charge of education, not only teachers themselves. We all agree that life-long learning is no longer just a slogan, but the only way to live an independent and successful life. This common, negative experience with the place where the next generation should learn the fundamentals of life and diverse ways of learning is a clear appeal to start taking SDG 4 - Education seriously in 2018 as, on average, only 21% of all young people responded in a positive way.

Figure 4: Going to school? Did you enjoy doing that, or not?



Source: Global Youth Poll; Basis: 10,537 children from 11 countries

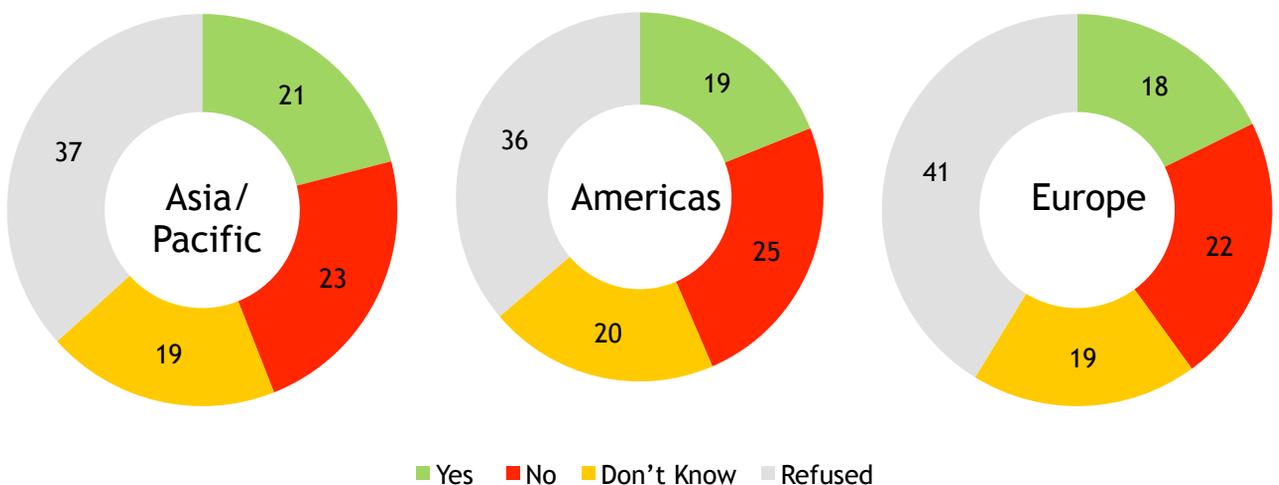
Food is not perceived as a pleasure anywhere

But instead of feeling comfortable that less than 10% of participants in the Global Youth Poll said they have access to food less than daily, we wanted to know whether the next generation is enjoying what they eat - either presented in canteens at school, at home, or in any other place. The shocking answer across all continents was that only one out of five like what they eat.

This is alarming and corresponds with the question asked earlier regarding the time the young people spend with their families. Percentages differ by country, but overall the amount of young people stating that they either had no time with their family or even disliked being together with their parents indicates that there is not that much time spent together around a kitchen table - much less being able to prepare a dish together.

The most recently published OECD rankings of countries where large parts of the society suffer from obesity were alarming but correspond with the results of the Global Youth Poll - and show actions need to be taken.

Figure 8: Do you like the food you normally get to eat?



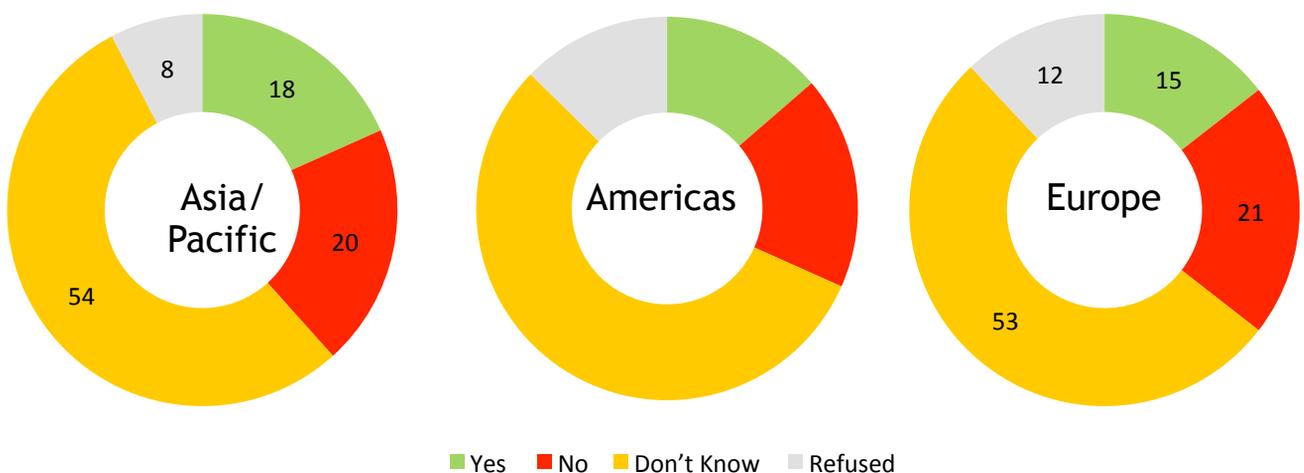
Source: Global Youth Poll; Basis: 10,537 children from 11 countries

If they don't enjoy their food, the next generation doesn't know whether their food is healthy

Aside from the fact that the next generation is growing up with an experience of not liking what they eat, only 15% of those answering and living in Europe have the impression that what they eat is healthy and doing them good. In the Americas, the results are comparable. In Asia/Pacific at least 18% of young people believe that their food is good for them.

Really alarming is the fact that the majority in all regions have no idea how to answer a simple question like “Do you think the food you eat is good for you?” Some of those ticking this box are simply too shy to respond with a clear yes or no, but 53% of Austrian, British, German, and Swiss youth no longer know whether what they have on their plate is healthy. This sends a strong alarm signal, not only to their parents and those running the kitchens in school, but more importantly to those responsible for health in each country. Not knowing about the essence of life is a shortcut to all the cost intensive diseases and allergies modern societies are facing. Better results in the Global Youth Poll will be indicators for lower health budgets needs in the future.

Figure 9: Do you think the food you eat is good for you?

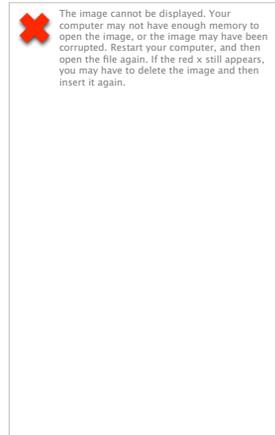


Source: Global Youth Poll; Basis: 10,537 children from 11 countries

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 - ii. Cultural Challenges: Religious bias and misunderstandings
5. Agenda Setting
6. Global Youth Poll
7. **Appendix**

Authors

James D. Bindenagel is Henry Kissinger Professor for Governance and International Security at the Rheinische Friedrich-Wilhelms-University Bonn, Germany. He is U.S. Ambassador (ret), whose professional speaking and writing includes teaching, articles and public lectures on international security in the 21st century, German security issues, Bundeswehr deployments, conflict prevention, post-conflict justice, and the Transatlantic Trade and Investment Partnership, the Kimberley Process for conflict diamonds, debates and other topics. Bindenagel is a former U.S. Ambassador, a career diplomat and an expert on Germany.



He served as an American diplomat in East, West and united Germany during the 1989 fall of the Berlin Wall, the end of the Cold War, unification of Germany, the Balkan Wars, debates on North Atlantic Treaty Organization security policy and expanded NATO membership, and German national security from 1972 to 2002. He introduced and promoted American Foreign Direct Investment in the Eastern states of Germany after unification in 1990 that made the United States the largest foreign investor in the five new German federal States. The Wall Street Journal profiled him on its front page as acting U.S. ambassador in Germany leading a business friendly U.S. Embassy. He served as deputy and acting U.S. Ambassador in East Germany (1989-1990) and in United Germany (1994-1997). He was appointed by President Bill Clinton in 1999 as U.S. Ambassador and Special Envoy for Holocaust Issues, was Special U.S. Negotiator for "Conflict Diamonds", and was Vice President of the Chicago Council on Global Affairs and at DePaul University. Bindenagel also served as President of the Japan America Society of Chicago.

Prior to his diplomatic career he was assigned to the U.S. Army's 3rd Infantry Division in Germany. He holds an MA in Public Administration and an AB in Political Science from the University of Illinois at Urbana-Champaign.

Authors

Christian von Reventlow from 2015 to the present, served as the **Chief Innovation & Product Officer** at **Deutsche Telekom AG** based in Bonn, Germany, and Menlo Park, USA. His leadership resulted in the key changes that Deutsche Telekom made in prioritizing, funding, and governing innovation projects - successfully solving the riddle how to drive innovation in large corporates. His career spans two and a half decades of manager and officer-level assignments at global technology companies directing the development and market deployment of breakthrough Cloud, artificial intelligence, mobile, software, and hardware solutions. As **SVP, Core Platform Head at HERE.com**(Nokia/Microsoft) from 2013 to 2014, his team transitioned this mapping provider from shipping files via disk/owned data centers to providing the map as a personalized service using a SMAC stack (Social, Mobile, Analytics and Cloud). As **VP/GM, Windows Software Engineering, INTEL's Mobile Computing Group** from 2011 to 2013, his group was responsible for delivering the fastest chip project ever at Intel and shipped 10+ OEM designs in six months; validated use of Intel Atom for low power tablets; and won Best of Show CES 2013. He is the inventor of the first ever cloud solution in Europe, launching a cloud PBX and call center in 2000. He studied at TU Berlin and has a doctorate in electrical engineering.



Authors

Roland Schatz is the Founder and CEO of Media Tenor International and InnoVatio Publishing. Schatz is a journalist in the 5th generation of his family and has devoted the past 30 years to implementing Perception Change by empowering media. In 2008, he launched, together with Prince Ghazi of Jordan, the C1 One World Dialogue foundation, to improve Inter-Faith-Dialogue. The InnoVatio network of academics, entrepreneurs and media leaders initiated the UN Global Sustainability Index. Schatz hosts masterclasses on ‘Unlearning Intolerance’ at the UN and teaches at the Institute for Future Management of the Sigmund Freud University in Vienna. In 2013 Schatz was appointed Senior Advisor to the General Director of the UN in Geneva.



Authors

Patrascu Ionel Victor, MVD, PhD, president of Activeimmunity, born on February 7, 1937. Graduated in Veterinary Medicine in Bucharest in 1963. Researcher in the field of virusology at Pasteur Institute in Bucharest. Made different specializations in the field of avian and human oncogenic viruses at Houghton Poultry Research Station, Huntington, England, at Friedrich-Loeffler-Institut, Celle, Institute of Animal Pathology in Rotherdam, Netherlands, Cornell University Ithaca NY and Athens University, Athens, GA. USA. In 1971 discovered to extract Fc 126 cell associated as cell free in SPGA and allowed to freeze-dry vaccine anti Marek disease lymphoma.



He made the first research Center in the world at Voluntari, Romania, called Avian Tumor Viruses Lab, where specialists from England, U.S., France, Bulgaria, the German Democratic Republic, Hungary, the USSR, and China came to do studies in the period of the Iron Curtain and communist politics from Moscow. In 1989 discovered the largest outbreak in the world of HIV infection and AIDS in children in Romania.

Studied antibiotic resistance of microorganisms and made first immunogen I-PC2 used biological preclinical and clinical human studies and the second generation of immunogen I-spga that was managed to prepare IMUNOVIP able to react specifically with superbugs and to cure Klebsiella pneumoniae infection by oral treatment of antibiotic-resistant urinary tract infections in women. During 1965-2017 he dealt with the training of specialists who are now valuable researchers, professors and academics.

Methodology: Content measurement

Statement coding, passages, reports

STATEMENT CODING analyzes every single piece of information in an article separately (subject, topic, rating, source, etc.). It is the most sophisticated way of analyzing content and helps to track whether single messages are covered by the media, or negative/positive tone is changing with regard to headlines, etc.

Information entities designed to grab the overall picture of a company and its senior executives in an article.

Every description of either a company or a senior executive (min. 5 lines) results in a coded passage. A report on a company announcing earnings without the presence of senior executives would be coded as a single passage. The rating is coded according to the dominant tone of coverage (e.g. more positive/neutral/negative).

THE SINGLE STORY on a certain topic. Report-based coding is used to analyze the main topic of a story (e.g. old-age provision) compared to other stories (e.g. war, catastrophes).

1) “Allianz triplica sus beneficios en España...”
(Allianz triples its profits in Spain)

CODING (CODE):

company: Allianz Spain (46)
Line of Business: Not mentioned (0)
Country described: Spain (221)
Chronological Structure: Present (1)
Topic: Business results (100)
Rating explicit: None (0)
Rating contextual: Positive (1)
Source of Information: Journalist (1)

> A total of 20 statements were coded.



1) “Allianz Seguros, la filial española del grupo alemán...”
(Allianz Seguros, the Spanish subsidiary of the German group)

CODING (CODE):

company: Allianz Spain (46)
Line of Business: Not mentioned (0)
Country described: Spain (221)
Topic: Existing holdings (406)
Chronological Structure: Present (1)
Rating explicit: None (0)
Rating contextual: None (0)
Source of Information: Journalist (1)

3) “...un 7,1 por ciento más”
(7,1 per cent more)

CODING (CODE):

company: Allianz Spain (46)
Line of Business: Insurance in general (1)
Country described: Spain (221)
Chronological Structure: Present (1)
Topic: Results, profits (101);
Rating explicit: None (0)
Rating contextual: Positive (1)
Source of Information: Journalist (1)

Media Set

International TV news / Quoted analysts / Business papers

TV

- Austria: ORF ZIB 1
- Canada: CBC The National
- China: CCTV 1 Newshour
- France: TF1 Le Journal
- Germany: ARD Tagesschau
- Italy: RAI 1 TGI
- Spain: TVE 1 Telediario-2
- Switzerland: SRF Tagesschau
- U.K.: BBC 1 Ten o' Clock News
- U.S.: CBS Evening News
- Vietnam: VTV Business News

Business Papers

- Barron's*
- Economist*
- FT (Eur.)
- Handelsblatt
- Il Sole 24 Ore*
- Les Echos*
- Mint*
- WSJ (U.S.)

* Quoted analysts only

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Business Experts on the Importance of Reputation Issues

“Without the support of Media Tenor our work would not have been understood by the world leaders on one hand and the general public on the other.”

PETER EIGEN, Former President Transparency International

“Journalists have an extreme impact on what is going on in the world. Therefore we need a watchdog for us watchdogs. I am grateful that Media Tenor serves this need from a scientific approach but with a strong journalistic understanding.”

FRED KEMPE, Former Editor in Chief, Wall Street Journal, Current President at The Atlantic Council of the United States

“Strategic Media Relations needs a clear and independent seismograph telling us in advance where the weaknesses of our external communications are. Media Tenor serves on a global level with their continuous qualified analysis of traditional media as well as monitoring the internet.”

RICHARD GAUL, Head of Corporate Communications 1985-2006, BMW

“Daily reports on the media coverage, and expert analysis of the areas of our strengths and weaknesses allowed us to tailor our coverage accordingly; to refocus our efforts on the desired messages and on the sections of the media where we were not being so successful. Without the fine work of Media Tenor that could never have been done effectively.”

DR. MICHEL OGRIZEK, International Communications Consultant, Paris

“Media Tenor International provides a unique way for a company to compare the message it is intending to send with the message that is getting heard. Those companies who are committed to greater transparency will find Media Tenor an invaluable tool for improving communications to their shareholders and other stakeholders. Media Tenor is also a useful tool for investors since it enables them to assess the risks to reputation and brand of their portfolio companies.”

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Media Tenor International

MEDIA TENOR was founded in 1993 by eminent scholars within and outside of the area of communication science and public opinion research like Elisabeth Noelle-Neumann, Peter Glotz, Hans Mathias Kepplinger, Wolfgang Donsbach and Hartmut Schiedermaier. MEDIA TENOR was established as the first media research institute to focus on continuous one hundred percent media analysis of opinion-leading news outlets. Thanks to this unique approach the institute is able to define the awareness threshold. It expanded internationally serving universities, NGOs, governments, the media and the corporate sector.

As a strategic partner, MEDIA TENOR helps organizations understanding and leveraging the media. Through partnership with MEDIA TENOR, organizations are able to tailor messages to reach target audiences effectively, consequently reducing advertising cost and increasing the return on investment from an organization's external communication.

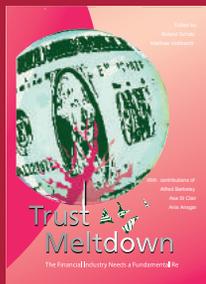
Today MEDIA TENOR is the leading media institute in the field of applied Agenda-Setting research, serving partners in the scientific, government and corporate world with strategic media intelligence. Every year experts and practitioners from media, academia, governments and NGOs meet at the International Agenda Setting Conference to exchange latest trends and improvements in the field of applied media impact analysis. Because MEDIA TENOR analyzes every single report in opinion leading media from print to TV and online media, our partners know whether their media relations activity has been relevant or not. MEDIA TENOR empowers them to create and maintain an active and strategic media presence, strengthening both credibility and reputation. The database open to the public has grown up to 90 million analysed statements – growing every day. These are now open for academia around the World in the Global Media Impact Center in Boston.

1985

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