



Climate alchemy

Or turning green into gold

PAGE 2



Apostle of low-carbon growth leads the way

Hedegaard on the economics of climate change

PAGE 3

Driving European growth post-crisis

Commissioner Olli Rehn explains how Europe should improve governance both to address current threats and to take advantage of opportunities for low-carbon growth.

How realistic is 'low-carbon' growth in Europe? In what time frame could it be realised and where should we start?

Low-carbon growth is increasingly a reality in Europe. Over the last 20 years, our GDP has grown by 40%, while our carbon dioxide emissions have fallen by nearly 10%. Almost half of our electricity already comes from "carbon-free" sources – nuclear and renewables. And by 2020, we should emit only half the amount of carbon dioxide per unit of GDP that we did in 1990. Looking beyond 2020, the key issue is to reduce the cost of the low-carbon technologies, most of which already exist.

Member States' public finances have been battered by the recession and Europe's ageing population will soon become an additional burden. Realistically, how long will it take until they recover to their pre-crisis levels? What lessons for public finances have been learnt from the crisis?

Debt levels are hard to predict in the medium and long-term and depend on economic growth, interest rates and the success of budgetary consolidation. Nonetheless, if the consolidation plans that Member States have presented in their stability and convergence programmes are fully implemented and followed up by further consolidation in the medium term, and if the budgetary costs of ageing populations are adequately addressed, the average EU debt ratio will fall to 60% of GDP, its pre-crisis level, in the course of the next decade. → see p.2

Europe and the crisis, in 3 acts

Europe's response to the crisis is unfolding as a 3 act play. In Act I, Europe achieved economic progress, only to see these results reversed by the crisis. In Act II, Europe has managed to overcome some of the immediate obstacles thrown in its path. In Act III, still in the making, Europe can create the conditions for a period of greater prosperity and stability.

1 The quiet before the storm

ACT I finds Europe making progress – at least in some areas – towards the Lisbon agenda goals. The Europe of Act I is not an economic idyll but it is a Europe on the right track. Eighteen million new jobs were created before the crisis hit, and the EU employment rate reached 66% in 2008, just 4 percentage points shy of the 70% target rate. Moreover, public finances were going in the right direction, with falling deficits and debt levels, and long-term sustainability improved through the reform of pension systems.

The good news, however, is that Europe took decisive action to blunt the impact of the crisis. EU leaders stabilised the banking sector, embarked on a series of financial reforms, and launched a package of fiscal stimulus measures amounting to 2% of GDP. But the overall fiscal

intervention has come at a cost, however: public deficits in 2010 are estimated at over 7% of GDP, on average, and debt levels at 80% of GDP. Two years of crisis have erased twenty years of fiscal consolidation, and halved Europe's growth potential.

building up over the past decade, and, if not addressed, could lead to an abrupt correction.

Europe now faces clear choices: continue with the status quo or collectively meet the immediate challenge of fiscal consolidation as well as the long-term challenges of globalisation, climate change and ageing, to ultimately return to an upward path of prosperity.

Europe 2020 – how will this story end?

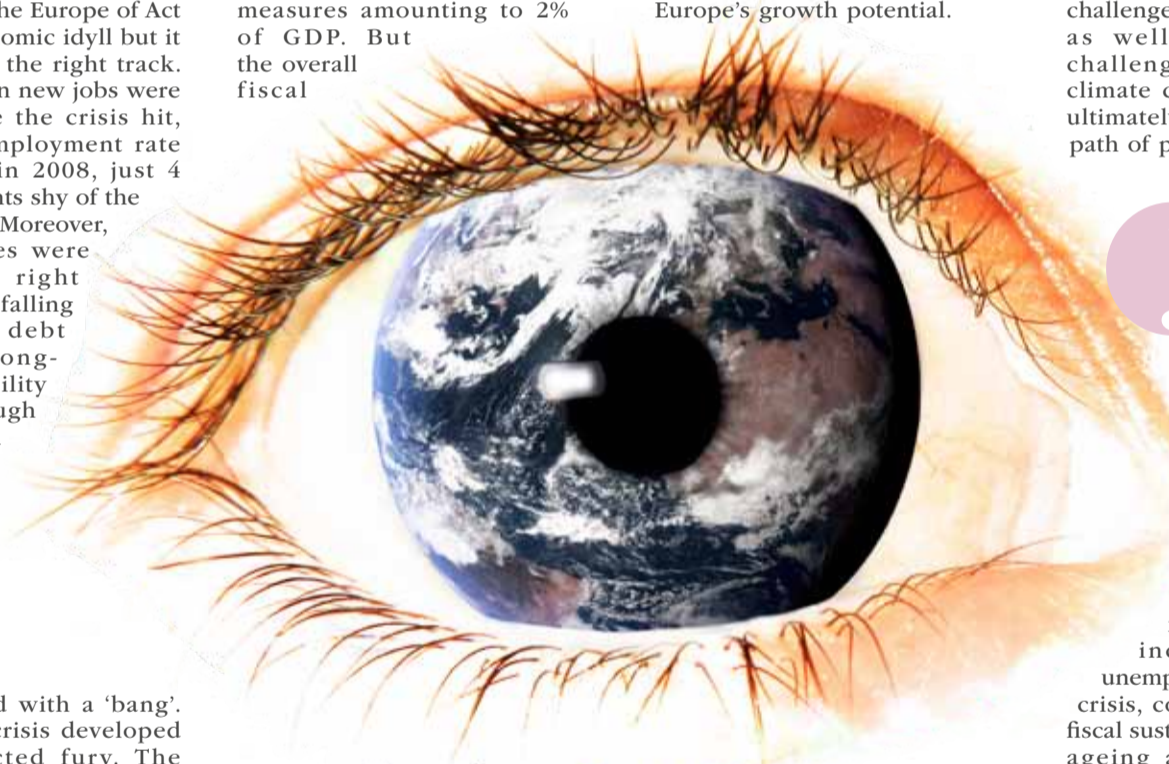
In **ACT III**, the protagonist triumphs and is better off than at the story's outset. For Europe the story is not yet over, however; the continent still faces huge challenges including millions of unemployed workers, the debt crisis, competitive imbalances, fiscal sustainability, demographic ageing and climate change. Moreover, as in any story, in order to achieve a successful outcome the protagonist must also grow and mature. For Europe, this means creating the mechanisms for stronger economic surveillance and coordination. Ultimately, it will be the only way to achieve a 'happy ending'. But the end of this story has yet to be written. ●

2 The crisis

ACT II opened with a 'bang'. The financial crisis developed with unexpected fury. The unprecedented economic crisis it triggered wiped out the steady gains in economic growth and job creation achieved over the past decade. European GDP fell by 4% in 2009, industrial production dropped by 20% to 1990s levels and 23 million people, close to 10% of the active population, are now unemployed.

support, taking into account the effect of automatic stabilisers, actually amounts to 5% of GDP over 2009 and 2010. As a result, the EU's economy is expected to grow by 1% in 2010 and 1.3% in 2011, according to the latest forecasts.

The crisis has also exposed deeper fault lines in the EU economy, some of them due to inefficient financial markets and housing and asset booms, but not only. Divergences in the competitive positions and current-account balances of euro area Member States have been



11th Forum focuses on crucial issues for the next decade

The Forum takes place at a critical juncture for Europe and the world. Speakers have thus been invited who can address the key issues, and present the views of both the public and private sectors. These include macro and climate change economists, governors of central banks, top officials from international financial institutions,

political leaders, and representatives of industry, labour organisations and the media. Over 1400 participants have registered for the conference, including close to 100 journalists. For those who cannot make it to the conference centre, the Forum will be webstreamed live and recordings will be available 24 hours after the end of the conference.

Follow the debates on webcast.ec.europa.eu





Early preventive action is the key to restoring sound public finances. And for this we need stronger and more comprehensive surveillance and coordination.

What is the case for more or better governance within the euro area and EU, and which areas, in particular, need to be addressed? Is the Stability & Growth Pact in its current configuration sufficient? Or will a «Competitiveness and Productivity Pact» be necessary?

Given the strong interdependencies among Member State economies, particularly in the euro area, policies of one country affect other Member States, for better or for worse. We need coordination to avoid negative spill-overs and reap the benefits of joint action.

Just two weeks ago, the Commission adopted a communication about ways to improve policy coordination. We propose that budget plans be subject to scrutiny by the Commission and the Eurogroup. We also propose stronger recommendations based on Article 136 of the Treaty.

Secondly, we outline the broad contours of a more comprehensive surveillance of macroeconomic imbalances, including competitiveness divergences.

Finally, we propose that a permanent crisis management mechanism be set up to provide conditional assistance should the financial stability of the euro area be threatened.

How will the Europe 2020 strategy deliver where the Lisbon strategy failed to do so? How important is reform of the EU's economic governance to the success of the new strategy?

We are much more focused now on fewer targets, and the proposed governance mechanism is better than under Lisbon; it's based on stronger ownership by EU leaders and more effective supervision by both the European Council and the Commission. The two bodies will jointly assess the individual situation of each country in terms of budget and competitiveness.

PREVIEW | SOLVING ENVIRONMENTAL PROBLEMS BY TRANSFORMING THE ECONOMY

The promise of green growth

Green growth will probably never be a panacea, but it might help us to simultaneously deal with environmental problems, raise growth rates and improve government finances.

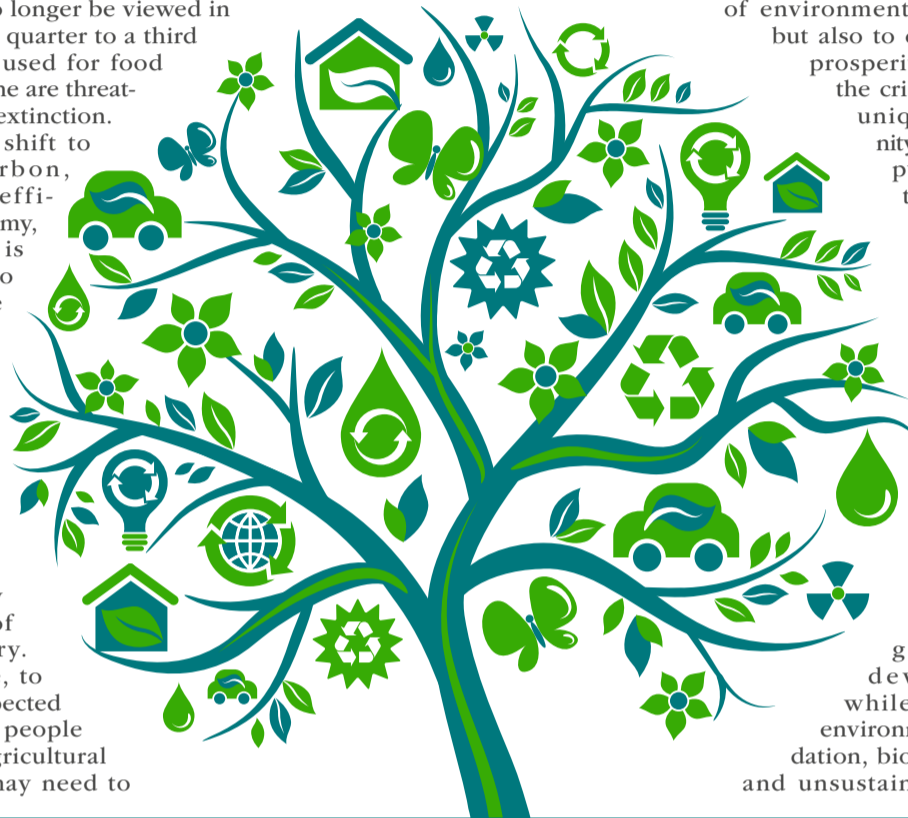
Growing concerns about the sustainability of past economic growth patterns and the looming threat of climate change have made it clear that the environment and the economy can no longer be viewed in isolation. A quarter to a third of species used for food and medicine are threatened with extinction. Without a shift to a low-carbon, resource-efficient economy, the world is on track to increase greenhouse gas (GHG) emissions by 70% by 2050, and for temperature increases of 4-6° C by the end of the century. Meanwhile, to feed an expected 8.2 billion people in 2030, agricultural land use may need to

expand by 10% worldwide, and, as a result of human activity, 1 billion people are expected to live in severe water-stressed areas by 2030. A substantial

transformation of consumption behaviour, industry structures and technologies is required.

Green growth could be a way not only to avoid or lessen the impact of environmental problems, but also to create greater prosperity. Moreover, the crisis provides a unique opportunity to implement public policies that simultaneously stimulate recovery and environmentally sustainable growth.

resource use. It's not just for rich countries. The economies of many emerging and developing countries depend directly on natural resources and are particularly vulnerable to climate change, which can impact their food security and access to water. Green growth will require government intervention to address externalities and market failures, as well as the development and adoption of new technologies, changes in production processes, and support for new patterns of demand. New policies will also necessitate new measurements such as indicators on the environmental efficiency of production and consumption.



What is "green" growth?

Green growth means pursuing economic growth and development, while preventing environmental degradation, biodiversity loss and unsustainable natural

Is there a cost-benefit?

Green growth is an evolving concept so comprehensive insights into its potential costs and benefits are still limited. Nonetheless, there is ample research that shows that it is more cost-effective to tackle environmental problems early instead of allowing them to build up. One study, for example, found that a 20-year delay in climate change mitigation actions would result in an increase in GDP losses of about 140%. The same study showed how committing to a modest abatement effort in the short-term could substantially reduce the cost of delayed action.

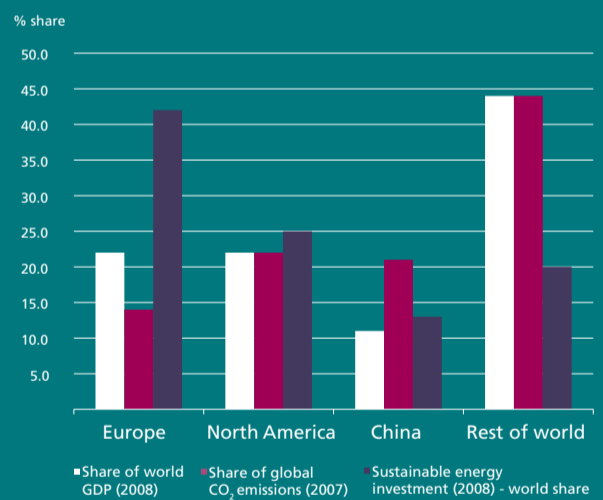
On the upside, public intervention to support going green could provide a boost to the economy by addressing longstanding weaknesses in investment levels or the knowledge base. Markets for low-carbon energy products are likely to be worth \$500 billion per year by 2050. Efficient policies fostering R&D and innovation in this growing sector and throughout the value chain could generate productivity gains across the economy. In addition, with the right policies, green growth may improve government finances. An OECD analysis shows that if all industrialised countries were to cut their emissions by 20% by 2020 relative to 1990 levels, and this was done via taxes or emission trading systems with full permit auctioning – the proceeds generated in 2020 could be as high as 2.5% of GDP. Governments may further save by removing distorting energy subsidies which currently cost \$250 billion per year.

The long-run impact of green growth on employment is uncertain. Green growth would probably lead to structural economic changes, including a reallocation of labour and other factor inputs within and across sectors. One sector's gain might be another sector's loss. Moreover, the job skills required are also likely to change significantly. If they aren't addressed, skill mismatches could slow the expansion of green activities or become a source of rising structural unemployment.

Regional comparisons of GDP, CO₂ emissions and sustainable energy investment

Due to past investments in sustainable energy and other factors, the carbon intensity of Europe's economy is significantly lower than that of North America. Europe's GDP is nearly 60% higher for every ton of carbon emitted. China has the most carbon intensive economy, producing twice as much in CO₂ emissions as North America for every unit of GDP.

Despite the fact that North America and Europe each contribute 22% of global GDP, Europe's sustainable energy investment accounts for 42% of global sustainable energy investment compared to only 25% for North America. On the other hand, the level of sustainable energy investment in North America is nearly double that of China.



Sources: GDP data from IMF (2009), CO₂ emissions data from IEA (2009), sustainable energy investment totals from UNEP/NEF (2009) - (Transforming Economies through Green Investment, 2010, German Marshall Fund of the US).

VIEWPOINT | IVAN HODAC

European automakers: green and getting greener

Joining forces is key to sustainable mobility, says Ivan Hodac, Secretary-General of the European Automobile Manufacturers' Association.



European automakers are technology leaders in fuel-efficiency and safety, and place sustainable mobility at the heart of their business strategies. Already a quarter of new cars emit less than 120 grams of CO₂ per kilometre. Moreover, the share of cars with emissions of over 160 grams has tumbled from 80% in 1995 to less than 25% in 2010.

Advanced conventional technologies, including engines and fuels, will continue to play an important role for years to come.

But electrically chargeable vehicles, including plug-in hybrids, extended-range electric vehicles and battery electric cars, will soon enter the market. Most stakeholders assume a realistic market share for electric vehicles in the range of 3 to 10% by 2020 to 2025. To fulfil this potential, however, multiple players must join forces to develop accessible charging infrastructures based on common standards, as well as a viable mix of technologies and energy sources. Informing consumers and offering targeted market incentives will also be important.

With the 'Strategy on clean and energy efficient vehicles', the

European Commission has set out important framework conditions for a viable transition to sustainable mobility in the EU. It recognises that a vibrant, competitive automotive sector is a prerequisite to realising this transition. The auto industry is ready to play its part. Sustainable mobility is an objective that no one can achieve alone – partnership and cooperation are key.

Ivan Hodac will speak today in the policy panel on tackling global warming through market mechanisms (15:30-16:30).



INTERVIEW | CONNIE HEDEGAARD

“Controlling climate change means building a low-carbon global economy”

Connie Hedegaard is European Commissioner for Climate Action and former Minister for the United Nations Climate Change Conference in Copenhagen. She assesses the outlook for a global climate deal, and explains why making Europe “the most climate friendly region in the world” is good for the economy.

What progress has been made since Copenhagen and where do we go from here?

The momentum generated by Copenhagen continues in terms of action on the ground and dialogue about how to move forward. More than 120 countries have associated themselves with the Copenhagen Accord, all industrialised countries have submitted emissions targets for 2020 and 36 developing countries have planned emissions actions. The international negotiations for a legally binding global climate agreement have restarted and there is a broad consensus that the Cancun conference at the end of this year must deliver the basis for a global deal.

Some have suggested that a global agreement is not even possible, or necessary, given the differences between countries, the number of parties involved, and since just a few countries account for the bulk

of emissions. Would it be more realistic and effective to negotiate a series of agreements involving fewer countries?

No, and this is not something anyone is discussing. An international framework will allow us collectively to achieve more. We need a truly global deal that gives something to everyone. It is not only about curbing the biggest emitters but many other issues too – adapting to climate change, reducing

deforestation, strengthening the international carbon market, and providing financial and technological support to help developing countries adapt and develop on a low-carbon pathway. A series of individual agreements will not be sufficient to solve the problem, and issues like the measurement, reporting and verification of emissions can only be solved globally.

In the EU, what progress has been made toward achieving the 20-20-20 targets? Are they realistic?

They are absolutely realistic – the European Parliament and Council would not have enshrined them in legislation otherwise. The economic crisis has reduced our greenhouse gas emissions further and made it cheaper to reach our 20% target. But the low price on the carbon

market is dampening innovation in Europe even as competitors like China, the US and Korea are investing heavily in green technologies. We should increase our reduction target to ensure that Europe stays competitive. Before the end of May, I intend to present an analysis of the costs and benefits of moving to a 30% reduction target.

In quantitative terms, do the economic benefits of action on climate change outweigh its costs?

That was the conclusion of the Stern Report four years ago, and studies since then have backed it up. If we allow damage from climate change to reach dangerous levels the cost will be five to 20 times higher than the cost of action. Action now is not so much a cost as an investment in the low-carbon, resource-efficient economy which is at the heart of our Europe 2020 vision. This is also where economic growth and jobs will increasingly come from in future.

Is making Europe “the most climate friendly region in the world” compatible with stimulating growth and improving the region’s global competitiveness?

Absolutely. Controlling climate change means building a low-carbon global economy. Our competitors have woken up to this opportunity. Europe must do more if we are to maintain our competitive advantage.

Experts speak out on the economic challenges and opportunities presented by climate change

Carlo Carraro brings academic rigour to the climate debate. Carraro is President of the University of Venice and Professor of Environmental Economics and Econometrics. Through detailed analysis, he and his colleagues have found that it is optimal to invest immediately in mitigation actions, while delaying most investments in adaptation. If all of the Copenhagen Green Climate Fund is used to finance mitigation actions in developing countries the rise in temperature can be limited to about 2.5°C.

Michael Hanemann is Professor of Agricultural and Resource Economics at the Goldman School of Public Policy of the University of California at Berkeley. His research interests include non-market valuation, environmental economics and policy, and water pricing and management. Among other work, he has advanced our understanding of the economics of water, pointing out some distinctive economic features that make the demand and supply of water different and more complex than that of most other goods.

Dieter Helm is a professor at the University of Oxford and a Fellow of New College, Oxford. His new book *The Economics and Politics of Climate Change*, co-edited with Cameron Hepburn, takes a hard look at the critical roadblocks to agreement. It examines the economics of climate change, the incentives of the main players, and the policies governments can put in place to reduce emissions, and shift economies onto a low-carbon path. Helm has stated that he would have taken the money that’s been used to prop up demand and put it into investment to facilitate the shift to a low-carbon economy.

Claudia Kemfert has thrown new light on the economic implications of alternative climate change policies. Kemfert is Professor of Energy Economics and Sustainability at the Hertie School of Governance in Berlin and head of the department of Energy, Transportation and Environment at the German Institute of Economic Research. Her research shows that clean development mechanisms and joint implementations can improve economic development in host countries, mainly by inducing investment in more efficient production and the application of carbon-free technologies.

John Zysman is a professor at the University of California Berkeley, co-founder of the Berkeley Roundtable of the International Economy (BRIE), and author of several books including *Manufacturing Matters: The Myth of the Post-Industrial Economy*, (with Stephen Cohen). Zysman believes that for progress to happen in the climate change negotiations, the issue needs to be reframed from one of limits and costs to the economic potential of energy-efficient technology.

These five climate change experts will speak today in the policy panel on the contribution of green technologies to economic growth in Europe (14:30-15:30).

“If we allow damage from climate change to reach dangerous levels the cost will be five to 20 times higher than the cost of action”

MISSION: “a Europe that is the most climate friendly region in the world”

- Climate and Energy package:** fully implement the binding legislation that was adopted last year to achieve the 20-20-20 targets. Intensify efforts on the EU Emissions Trading System, CO₂ reduction from vehicles and a Climate and Transport Package.
- International climate agreement:** secure a comprehensive, ambitious, fair and science-based global agreement that is legally binding.



“The greening of the European car industry”

The global car fleet is predicted to grow from 800 million to 1.6 billion vehicles by 2030, and then to 2.5 billion by 2050. But over the same period, energy will become increasingly scarce and costly. The European automotive industry, therefore, faces a defining moment: it must simultaneously recover from the economic downturn while positioning itself for green growth.

To support the industry’s transformation, the European Commission has devised a two-fold strategy: improving the efficiency of conventional engines while making ultra low-carbon

mobility a reality. The new strategy, adopted on 28 April, is part of the Europe 2020 objectives for smart and sustainable growth and includes an action plan for reducing vehicle emissions, supporting research and innovation, and creating demand-side incentives. While the Commission remains technology neutral, it calls for the establishment of common standards so that electric vehicles can be charged anywhere in the EU.



61%

was the share of renewables in new electricity generating capacity in Europe in 2009. Of the total new capacity, 39% belongs to wind power and 16% to photovoltaic solar power.

80-95%

is the emission cut target for 2050 that developed countries will have to take on in order to limit global warming to below 2°C above pre-industrial levels, according to experts.



INTERVIEW | RICHARD BALDWIN



Richard Baldwin on the impact of the crisis on globalisation

Richard Edward Baldwin is Professor of International Economics at The Graduate Institute in Geneva, Policy Director of CEPR (Centre for Economic Policy Research) and Editor-in-Chief of Vox.

Global imbalances have been cited as one of the underlying causes of the crisis. Do imbalances still pose a threat to global economic stability?

The latest thinking by the world's leading economists is that global imbalances were at most a facilitating factor – rather than a cause – insofar as they allowed the US housing bubble to build up. Global imbalances are not a major threat to global economic stability, and they only need to be addressed in the long run.

Since the crisis erupted, has the world become more protectionist?

There has been some increase in protectionism – especially “murky protectionism”, i.e. subtle changes

in rules and practices that favour domestic firms without being explicitly inconsistent with members' WTO obligations. But these measures cover only a minor fraction of world trade. Overall, the battle to avoid a protectionist spiral has gone well to date. Nevertheless, nations typically shift towards more nationalistic, protectionist policies as unemployment persists, so we must remain vigilant.

How has global trade changed since the onset of the crisis and how do you see it evolving over the next five years?

The world has just experienced what I like to call “The Great Trade Collapse”; it was sharper than any fall in recorded history and deeper than any since WWII.

Trade in some parts of the world is recovering rapidly – especially in Asia. Europe's trade, however, is recovering more slowly.

Over the next five years, trade is likely to return to normal. “Normal”, however, will involve a larger share for China, India, Brazil and other emerging economies. The WTO will have to give much more heed to the concerns of the emerging trade powers.

How realistic are proposals for imposing tariffs on the carbon content of imports? Do you think this is a viable way to mitigate climate change while creating a level playing field for European companies?

Carbon tariffs are a slippery idea. Since calculating carbon content

involves a lot of guesswork, they would create endless trade disputes between rich and emerging nations, and they would open the door to endless manipulation by special interest groups. European companies face all sorts of stiffer regulation than firms in developing and emerging markets, and yet they manage to compete very effectively. That said, it is important to share the burden of adjusting Europe's carbon emissions widely – it should not fall entirely upon a narrow segment of the economy.

In light of the crisis and looming environmental problems, not to mention social inequalities, do we need to re-consider globalisation?

The simple fact is that globalisation is not going away – our

current lifestyle would suffer too much. International commerce is actually critical to the world's mitigation and adaptation challenges. As rainfall becomes more erratic, trade in food will become an essential element of adaptation, and trade in energy will be an important way to prevent the massive use of dirty energy, especially coal. Moreover, firms will only make the investments and provide the technology needed to limit carbon emissions if a world trade system exists that is rules based and predictable.

Richard Baldwin will speak today in the panel on the global financial and economic crisis (10:00-10:55).

And the winner is...

Today Commissioner Olli Rehn will chair the award ceremony of the photo competition entitled “The euro: What does it mean to us?”, organised by DG ECFIN and open to 14-18 year olds residing in the 27 EU Member States. From the 27 national winning teams, seven finalists – from the Czech Republic, France, Germany, Hungary, Lithuania, Poland and Portugal – have been invited to the event, where the winning team will be announced.

More than 2,464 teams of 2-3 young people from throughout the European Union registered for

the photo competition between January and March 2010, and 1,614 teams submitted entries. Each team was asked to submit an original photo and caption illustrating the team's vision of the euro. Pictures were judged according to their relevance, originality of expression, visual impact and aesthetic appeal, by a jury made up of seven people, including representatives of the European Commission, a national ministry and a youth organisation, as well as a communications expert and photographer.



European Business Cycle Indicators: Accurate and timely information complements official statistics

Business and consumer surveys such as those published in *European Business Cycle Indicators* are a proven, and increasingly sophisticated, tool for economic analysis. The surveys reflect the sentiment – optimistic, pessimistic or neutral – of managers and consumers. This soft data is surprisingly robust: many of the sentiment indicators closely track the official statistics.

The survey results provide policymakers, economists and business managers with information to assess the current state of the economy and forecast short-term developments. The business and consumer surveys produced

by ECFIN are used by the ECB, among others, to monitor inflation expectations and other economic variables.

Currently six surveys are conducted on a monthly basis covering all 27 EU Member States and addressing industry, construction, consumers, retail trade, services and financial services.

The publication is available every month on the ECFIN website. You can subscribe to the email alert service to be informed when a new issue is online. Copies of this and many other ECFIN publications are available at the stand in the mezzanine area.

Publication: ec.europa.eu/economy_finance/publications/cycle_indicators/
 Surveys: ec.europa.eu/economy_finance/db_indicators/surveys/
 Email alert: ec.europa.eu/economy_finance (see top right)

The photos of all the national winners are on display in the conference mezzanine area (2nd floor, just by the coffee corner) and can also be seen on the competition website: <http://euroinphoto.eu/>

