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News from The Leverhulme Centre for Research on Globalisation and Economic Policy

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## Leverhulme Globalisation Lectures

GEP hosts keynote addresses by  
Martin Wolf, Kate Barker and Lord Wolfson.

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## Why we must resist de-globalisation

Professor David Greenaway warns against  
the threat of a return to isolationism.

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# The World Economy Annual Lecture 2011

Sponsored by The World Economy publisher Wiley-Blackwell, The World Economy Annual Lecture is among GEP's most high-profile public lectures. In June the Centre welcomed Professor Robert Staiger, of Stanford University, to deliver the 2011 address.

The sheer scale of "latecomers" involved in the Doha round of trade negotiations presents a challenge unprecedented in the history of the World Trade Organisation, a leading authority told an audience at GEP.

Delivering The World Economy Annual Lecture 2011, Professor Robert Staiger, of Stanford University, said the issues surrounding the successful integration of developing nations could not be dismissed as a "trivial problem".

Underlying the difficulties, he suggested, is the fact that some of the aims stated in the declaration at the start of the Doha round in 2001 are simply "incoherent from the perspective of economic analysis".

The declaration states: "We commit ourselves to comprehensive negotiations aimed at substantial improvements in market access; reductions of, with a view to phasing out, all forms of export subsidies; and substantial reductions in trade-distorting domestic support. We agree that special and differential treatment for developing countries shall be an integral part of all elements of the negotiations."

Staiger told an audience at The University of Nottingham: "If pursued as stated, these aims are unlikely to deliver the meaningful trade gains for developing countries that the WTO membership seeks. Yet these aims, with one key change, can still form the basis of a coherent plan for delivering trade gains for developing countries. The Doha round must move away from the non-reciprocal 'special and differential treatment' norm as the cornerstone approach to meeting developing country needs in the WTO. Instead developing countries must come to the bargaining table and negotiate reciprocally with each other and with developed countries."

Stanford's Holbrook Working Professor in Commodity Price Studies, Staiger is the author of a number of highly influential works, including *The Economics of the World*

Trading System (with co-author and Stanford colleague Kyle Bagwell), and has won widespread acclaim from some of the most distinguished economists around the globe for his studies of the WTO and GATT.

Addressing GEP and summarising in part his recent work with Bagwell, he said there could be little dispute that developing countries have enjoyed few gains, if any at all, from a half-century of GATT/WTO-sponsored tariff negotiations – a suggestion supported by data, various studies and even interviews with WTO delegates and Secretariat staff.

He added: "Why has this happened? It's a fact that as a result of exception from the reciprocity norm, extended to developing countries and codified under Special and Differential Treatment (SDT) clauses, developing countries have committed to few tariff cuts over eight GATT multilateral negotiating rounds spanning 50 years.

"They were supposed to get a 'free pass' on the Most Favoured Nation tariff cuts that the developed countries negotiated with each other. Apparently, however, it didn't work out that way – and some simple economics suggests we might have expected this."

A key mechanism that has to be considered, said Staiger, is that a country's own tariff cuts stimulate its exports. Therefore, in the context of reciprocal MFN negotiations, a country that agrees to cut its own import tariffs in exchange for tariff cuts in the markets served by its exporters will see its exporters gain more export volume than exporters from countries that did not reciprocate.

This is confirmed by a number of studies, among them Tokarick (2007), who argues: "Developing countries could expand their exports by a much larger percentage by eliminating their own tariff barriers rather than waiting for tariff reductions from rich countries."

Staiger said: "The lesson for Doha is 'What you get is what you give'. Doha's current





**Building for the future: WTO efforts to integrate developing nations could be hampered by some of the aims stated at the start of the round of negotiations in Doha, Qatar, in 2001**

non-reciprocal approach, which is anchored in SDT, won't deliver meaningful trade gains for developing countries, just as it didn't over the previous half-century. That's why the developing nations need to negotiate reciprocally with each other and with developed countries."

According to terms-of-trade theory, developing countries stand to benefit from reciprocal trade liberalisation only when they are sufficiently large for foreign exporters to "feel the pain" of their tariffs. This, said Staiger, gives rise to two potential issues surrounding the integration of "latecomers" for those that have been actively engaged in tariff bargaining for over 50 years: the preservation of bargaining power and "globalisation fatigue".

He added: "Developed countries may have little to offer developing countries in reciprocal bargains, which could lead to difficulties in negotiating reductions in developing country tariffs. In addition, the existing MFN tariffs of developed countries may be too low for a world in which developing countries are fully integrated into the global trading system.

"These issues are not unfamiliar, as evidenced by a struggle to accommodate latecomers from early on in GATT/WTO history. But the scale of the latecomers problem that faces Doha is unprecedented – and this, rather than sheer numbers of members, may be the biggest difficulty."

One solution, suggested Staiger, could be for developed countries to renegotiate their existing tariff commitments with each other

to "make room at the table" for developing nations such as China, India and Brazil. He said: "This might seem extreme, but other possibilities that sound less extreme may have much the same effect." In particular, Staiger went on to argue, an agreement to limit subsidies to agricultural exports in the developed world could serve this purpose.

Staiger also identified a separate challenge that the Doha round may be struggling with: the rise in offshoring. He described how offshoring could change the nature of the basic problem that trade agreements must solve and suggested several institutional responses that might be necessary in a world where offshoring is prevalent.

He concluded: "Even if Doha fails and no new commitments are agreed, these issues won't go away. Nor will the WTO cease to exist or the role it plays stop being central to the performance of the world trading system.

"An over-arching challenge is therefore to understand how best to design the WTO contract and adjudicate and enforce WTO commitments." Staiger argued that adopting an incomplete contracting perspective could be fruitful in meeting this challenge, suggesting it could shed light on core features of the GATT/WTO that deserve more attention from economists.

Asked if economists should have a greater role in WTO negotiations, Staiger said: "We're not telling these guys what to do, but maybe we should be pointing out to them: 'This is how we can interpret what you were doing before – and now you have a different kind of problem.'"

## Robert Staiger

Professor Robert W Staiger is the Holbrook Working Professor in Commodity Price Studies in the Department of Economics at Stanford University.

Educated at Williams College and the University of Michigan, he was an Assistant Professor of Economics



at Stanford (1985-1991), when he was promoted to Associate Professor with tenure. He joined the University of Wisconsin in 1993 before

returning to Stanford as a Professor of Economics in 2006.

Staiger is a Fellow of the Econometric Society and serves as a Research Associate with the National Bureau of Economic Research and as a Reporter for the American Law Institute in its study Principles of Trade Law: the World Trade Organisation. He also served as Co-Editor of the Journal of International Economics from 1995 until 2009, becoming Editor in 2010.

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# The Leverhulme Globalisation Lectures

The Leverhulme Globalisation Lectures are one of the cornerstones of the GEP calendar. The first quarter of 2011 saw three high-profile visitors – Martin Wolf, Kate Barker and Lord Wolfson – add to the Series' reputation for attracting speakers of the highest calibre.

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"The current model... has to be changed in quite fundamental ways towards a domestic, demand-led model. A fundamental strategic shift will be required."

Delivered by contributors from the business, policy making and media communities, GEP's Leverhulme Globalisation Lectures invariably attract an enthusiastic and appreciative audience.

One of the key aims of the series has always been to provide students with opportunities for genuine interaction with leading figures in the sphere of economics, finance and globalisation.

A packed calendar in February and March, which saw the Centre welcome three highly respected visitors in the space of only a few weeks, ensured that aim was more than fulfilled.

## China crisis

China is almost certain to experience a financial crisis in the coming years, one of the most influential voices in economics told an audience at GEP in February.

Financial Times Chief Economics Commentator Martin Wolf said he could not see the country achieving the unprecedented feat of a half-century of rapid economic growth.

He predicted it would survive any difficulties but only if it first confronts a series of "significant vulnerabilities" that threaten its continued development

A frequent and popular contributor to the Leverhulme Globalisation Lecture Series, Wolf described China's growth model in the decade leading up to the global financial crisis as "fundamentally unsustainable".

The Chinese government's next five-year plan would have to be built around the recognition that the model has "clearly reached its end", he said, adding: "My view is that, however remarkable the success China has had in the last three decades, the next two decades will be ineluctably more difficult.

"I don't know any significant country that has gone through development and opened up

its financial sector to the world which has not had at least one world-class financial crisis."

Wolf, in a lecture entitled Challenges to Sustaining China's Growth, said China would need to avoid falling into a "middle-income trap" that might leave it unable to compete globally in terms of low wages and technological capability.

"The aim over the next two or three decades is going to have to be very, very rapid increases in fundamental productivity and innovation," he said, adding that managing the consequences of the country's "simply staggering" investment ratio would represent another huge challenge.

He concluded: "The current model... has to be changed in quite fundamental ways towards a domestic, demand-led model. A fundamental strategic shift will be required."

## Matters of interest

Former Monetary Policy Committee member Kate Barker delivered a lecture entitled What Problems Does Globalisation Pose for Inflation-Targeting in the UK? when she visited GEP in March, just days after the Budget.

Also formerly Chief European Economist at Ford Europe and Chief Economic Adviser at the CBI, Barker stood down from the MPC in May 2010 after nine years on the Committee.

She admitted the Bank of England's approach to monetary policy changed during her three terms in the job, saying: "For most of those nine years there was a precise focus on getting inflation to target, whereas during the [financial] crisis we really had to think big. Previously we worked with central forecasts in setting interest rates, whereas the MPC's task now is to manage inflation between a much larger spectrum of risks. Attention to tail-risk or low-probability high-impact risk is much more part of the discussion now."

Barker, now a Senior Adviser at Credit Suisse, believes high inflation will tail off in





**UK retailers can no longer plan for never-ending growth in like-for-like sales, Lord Wolfson, Chief Executive of Next, told an audience at GEP**

the medium term but doubts it will do so to the extent the MPC apparently expects. She said: "There's a worry that when oil prices finally fall back we may find latent pressures elsewhere. I have some sympathy for the view that it may be time to move rates up a bit to reassure the markets that the MPC is committed to managing inflation, but it's certainly not the time for big changes in the interest rate.

"A rise from 0.5 to 0.75 is trivial. The Bank's interest rate is more divorced from other rates, so the effect on the economy would be even smaller. I don't quite agree with Mervyn King that it would be a 'futile gesture', but it's the least that could be done."

#### **Next up...**

Lord Wolfson, Chief Executive of High Street giant Next, also visited GEP in March, again with some timely reflections on the Budget. In a lecture entitled Business, Government and the Growth Agenda, he welcomed George Osborne's efforts to help UK businesses but suggested the Chancellor had done little to encourage the nation's struggling consumers.

He said: "The consumer environment is highly likely to be dominated by the challenges of global inflation, public sector cuts and limited

growth in consumer credit. These factors mean retailers cannot plan for never-ending growth in like-for-like sales, which many have enjoyed over the past 15 years."

Lord Wolfson is a self-declared fan of enterprise zones, although he regards them as "economically a zero-sum game". By contrast, he has been an outspoken critic of UK planning laws, claiming a hotbed of technological innovation such as the US's Silicon Valley would never have gained permission to be developed in Britain.

Accusing the planning system of hampering "every single business in the land at some stage", he urged the government to reform existing rules and also to invest in the nation's road network – "the life-blood of the economy".

He said: "It's the longer-term things that matter, like the enterprise zones and the changes in attitude to planning, which so often has held business back in the past."

**"The consumer environment is highly likely to be dominated by the challenges of global inflation, public sector cuts and limited growth in consumer credit."**

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# Why we must resist de-globalisation

Given the current turbulence in the Eurozone, the global financial crisis may well be moving into another, more dangerous phase. Writing in *China Daily*, GEP founding Director and University of Nottingham Vice-Chancellor David Greenaway recently cautioned against the enduring perils of isolationism. A version of this article originally appeared in *China Daily* on 20 May 2011.



“Few nations know better than China that globalisation can go backwards as well as forwards.”

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**David Greenaway**  
GEP founding Director and  
University of Nottingham  
Vice-Chancellor

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‘Globalisation’ is still an emotive word, but the truth is that the phenomenon has been going on for centuries. What have the Romans ever done for us? Well, they played their part.

China’s Han Empire was a crucial component of the same well-established trade network of 2,000 years ago, and now that country once again stands at the heart of the world economy.

But few nations know better than China that globalisation can go backwards as well as forwards. Witness the 400 years of isolation before the sweeping economic reforms that have wrought such a dramatic transformation during the past three decades.

Now, quite suddenly, the threat of isolationism looms again. All over the world bankers and investors have retreated to their domestic markets, driven back by the enervating effects of global financial meltdown.

Two years ago the Bank for International Settlements (BIS) released an alarming set of figures that revealed cross-border lending had plummeted by \$4,800bn – or £3,200bn – in the nine months to December 2008. This was the most dramatic fall ever recorded.

Although its latest figures inevitably demonstrate a measure of recovery, the same institution recently warned that divergence between markets means there is greater uncertainty now than before what has become known as the Great Recession.

It was at around the same time that the record fall in cross-border lending was announced that China first floated the idea of a super-sovereign reserve currency to supplant the US dollar. As the once-mighty wave of financial globalisation receded, this represented a dramatic statement of intent from the world’s emerging superpower.

To remind us this concept has by no means been forgotten, Xu Hongcai, a departmental deputy director at the China Centre for International Economic Exchanges, recently

produced a paper that called for an end to the dominance of the dollar in the interests of “stability and fairness”. His call was publicised ahead of a G20 seminar at which China’s own exchange rate was not up for discussion.

With confidence low and tensions high, it seems the only thing the credit crunch has helped to spread is fear. We find ourselves potentially teetering on the brink on an era of de-globalisation – and that is a worrying prospect.

At this point it might be of benefit to reassure ourselves that the term ‘globalisation’, although it became widespread only in the latter part of the 20th century, is by no means a new occurrence.

Even Ancient Egypt’s trade in the near east might be considered an early example. More recognisably, the Silk Road between China and the Roman Empire and the efforts of traders and explorers during the Islamic Golden Age represent important landmarks in the process.

Fast-forward to the present day and we find a truly worldwide nexus of trade, technological and financial integration, investment and migration, embodied and exemplified by global organisations including the IMF and the WTO. In some respects, the so-called “death of distance” is all but complete.

The criticisms of globalisation are well known. Increased inequality, poverty and social exclusion, imbalances in economic power and double standards in international rules all are regularly cited. They present challenges that have to be managed. However, they must be weighed against very real and tangible gains.

Globalisation brings more efficient use of scarce resources, a greater and cheaper range of goods and services, reduced poverty, faster economic growth and rising living standards.

The last two of these benefits are clearly linked. Taking some random examples, we



China has substantially outperformed India... its rise has become perhaps the defining story of globalisation



can easily demonstrate how even small differences in growth rates lead to large differences in living standards.

In 1900 the GDPs per capita of Argentina and Austria were \$2,765 and \$2,882 a year respectively. During the course of the next century their growth rates were 1.13% and 1.94% respectively. By 2000 their GDPs per capita were \$8,544 and \$20,077 respectively.

Looking at more recent success stories, both China and India had highly protective and inward-looking economies prior to the 1990s. Even by 1992 China's tariffs on imports averaged more than 40% and India's a profoundly prohibitive 90%. By 2008 China's average tariff was under 10% and India's under 30%.

To date, of course, China has substantially outperformed India. Greater roles for foreign direct investment, export development and technology upgrading – all key elements of globalisation – have been crucial to the disparity.

China's rise has become perhaps the defining story of globalisation. More dramatically than any other nation, it has shown how increased globalisation can lead to an increase in both the quantity and quality of available productive assets.

Globally, meanwhile, the numbers speak for themselves. Worldwide merchandise trade in 2005-2006 amounted to \$11.8trn and services trade \$2.7trn; foreign investment flows stood at \$916bn; and foreign investment stocks were worth \$10.1trn.

A little over a year later, somewhere in the US

“Economic instability has always been a likely obstacle to globalisation, but trade wars and the failure of WTO talks – not bad mortgages – have traditionally been viewed as the likely triggers.”

sub-prime mortgage market, the tide began to turn. Thanks to the credit crunch and the crippling dread it engendered, cross-border flows – in many ways the very lifeblood of globalisation – all but seized up.

This was especially notable in the US, which suffered a \$109bn exodus of foreign capital in the final three quarters of 2008. In the previous nine months there was a \$774bn inflow.

For its own part, seemingly prompted by the rescue of Bear Stearns, America repatriated \$750bn in the last three quarters of 2008. With domestic lending dominant, suddenly protectionism was very much back on the agenda – and the prospect endures in 2011.

Emerging markets in Europe and the former Soviet Union can expect to suffer particularly badly from this trend, since it is foreigners who own much of their banking systems. But nobody can expect to escape.

This was not how it was meant to be.

Economic instability has always been a likely obstacle to globalisation, but trade wars and the failure of WTO talks – not bad mortgages – have traditionally been viewed as the likely triggers.

Of course, we have learnt to expect the unexpected. In recent years alone the world economy has endured 9/11, wars in Afghanistan and Iraq, SARS and the Asian tsunami – and globalisation survived them all.

Similarly, it came through the collapse of the Bretton Woods system, the debt crisis of the mid-1970s, the oil shocks of 1973 and 1980, hyper-inflation, the fall of Communism in Europe and the Asian financial crisis. Now the Japanese earthquake, the so-called 'Arab Spring' and widespread sovereign debt crises present new challenges.

De-globalisation, like globalisation, is hardly a new phenomenon. The economic chaos of the 1930s and the Soviet bloc in the aftermath of World War Two are just two obvious instances of de-globalising – and, indeed, the painful consequences it can bring.

It is almost impossible to imagine we will plumb such depths again. Even amid the current turmoil, globalisation is very probably too far advanced, too entrenched, to allow that to happen.

It may well be, as many commentators have already pointed out, that the best we can expect pro tempore is to “muddle through”; and this, by common consent, is precisely what we have been doing. We can only hope it is the very least we manage – otherwise the repercussions will be felt far and wide and for years to come.

# European research workshop in international trade

GEP had the privilege of hosting ERWIT, the European Research Workshop in International Trade, at the University of Nottingham in June. GEP Fellow Alejandro Riaño rounds up a selection of the contributions to the prestigious event.



“The event aims to provide a uniquely relaxed atmosphere for disseminating the findings of recent studies on international trade.”

Alejandro Riaño  
GEP Fellow

Each year ERWIT brings together international economists and key researchers from across Europe and beyond. With presentations often involving exploratory rather than finished papers, the event aims to provide a uniquely relaxed atmosphere for disseminating the findings of recent studies on international trade.

Held jointly with the third EFIGE Scientific Workshop and Policy Conference, this year's event took place on 6, 7 and 8 June. As ever, it combined workshop sessions with periods of collaboration and consultation, as well as providing young researchers with valuable opportunities to discuss their work with senior economists.

Giacomo Ponzetto (CREI) presented a political economy model of trade protection that seeks to understand the enduring appeal of protectionism as a campaign platform.

In traditional political economy models of trade policy, where lobbies offer politicians cash contributions in return for favourable policies at the expense of the average citizen, politicians should actually try to hide their protectionist bias as much as possible. Ponzetto argues that costly information acquisition might be behind the protectionist electoral rhetoric. Producers need to have a good understanding of economic policies to plan their investment decisions, whereas individual voters, knowing they can hardly influence election outcomes, do not have an incentive to learn about policy platforms.

The fact that producers are better informed than consumers results in a protectionist bias. Allowing information-sharing through social networks in this context implies that individuals are better informed about policies that affect their sector. An interesting proposition derived from the model is the existence of a “Dracula effect” of protectionism: producers' informational advantage declines – and with it the protectionist bias of economic policy – when the average voter is more likely to be

informed of policy proposals.

David Weinstein (Columbia University) presented an empirical paper that attempts to test one of the foundational hypotheses of the New Economic Geography class of models – specifically, that larger markets are characterised by lower prices of traded goods, which, together with greater product variety, results in lower costs for consumers.

Using highly disaggregated barcode data covering hundreds of thousands of goods purchased by 33,000 households in 49 cities in the US, Weinstein and his co-authors measure product variety and the variety-adjusted costs faced by consumers in different locations.

They find that, despite the fact that the price index of identical goods rises with city size, controlling for the household making the purchase and the amenities of the store where the purchase takes place results in lower goods prices in bigger cities. This effect is reinforced by the larger variety of goods available in bigger cities. Thus a household moving from Des Moines in the Midwest to New York and purchasing goods from the same type of stores in the same types of neighbourhoods would realise a nine per cent drop in its grocery bill.

Emanuel Ornelas (London School of Economics) presented a model showcasing how firms build reputations to overcome the problems arising from weak enforcement of contracts at the international level.

Exporting firms search for importers abroad under imperfect information about the likelihood of compliance with contracts. Forward-looking importers develop a reputation with their respective exporter partners, leading to rising trade volumes and a lower probability that the partnership fails over time. Using a panel data set of exporting firms from Belgium, Ornelas finds that firms exporting to countries with better contractual institutions start selling larger volumes and keep servicing those markets



ERWIT delegates addressed trade-related issues including protectionism, export destinations, wage premia and sectoral growth



for a longer time. By contrast, the growth rate of a firm's exports, conditional on survival, is lower in countries with good institutions, as the reputational effect produced by repeated interaction is weaker than in countries with lower institutional quality.

**Eduardo Morales** (Harvard) presented a paper that tries to understand how a firm's choice of export destinations is determined by the characteristics of gravity (i.e. how similar a destination country is to a firm's home country) and extended gravity (i.e. how similar a new destination country is in relation to previous exporting destinations).

The dimensionality problem posed by the large number of possible export paths available to firms makes the standard discrete-choice estimation methods unfeasible. The use of a moment-inequalities technique allows this difficulty to be circumvented.

Using a data set of Chilean manufacturing firms matched with export flows from customs, Morales finds standard gravity forces have a much larger influence on sunk costs than on fixed costs of exporting and that extended gravity effects can be substantial.

**Udo Kreickemeier** (University of Tübingen) presented a theoretical contribution that aims to grasp the origins of the multinational wage premium – the fact that, even after controlling for observable firm characteristics, multinational enterprises tend to pay higher wages than competitors that are nationally owned. Using a two-country general equilibrium model with heterogeneous producers and fair wages, Kreickemeier suggests MNEs pay higher wages because they are more productive. MNEs, he points out, earn profits globally. As the rent-sharing mechanism that determines wages also operates at the global level for MNEs, it follows that an otherwise identical company that does not choose to be a multinational pays lower wages.

**Karen Helene Ulltveit-Moe** (University of Oslo) uses a matched employer-employee data set for the Norwegian manufacturing sector to explore the extent to which the productivity premium of exporting firms is related to a firm's intrinsic efficiency or whether it is the quality of the inputs it uses, including the characteristics of the workers it employs, that results in higher productivity.

Ulltveit-Moe finds that around 15% to 40% of the exporter productivity premium reflects differences in workforce rather than intrinsic firm quality.

This finding has important implications for the quantification of the gains from trade liberalisation, as these will be greatly affected by the labour market dynamics that follow the reallocation of market shares across firms.

**Giovanni Facchini** (Erasmus University Rotterdam) presented a paper showing how sectoral export growth has a negative effect on the survival probability of exporting firms without having any effect on domestic producers – a fact at odds with predictions from standard heterogeneous-firm models of trade.

Seeking to explain this, Facchini and his co-authors use a model in which firm heterogeneity arises from input use (chosen at the moment of entry) rather than productivity. Increased factor market competition, driven by the expansion of exports after trade liberalisation, affects exporting firms negatively.

By contrast, domestic firms are positively affected because of their different factor intensities, the effect being stronger the larger the differences in factor intensities between domestic and exporting firms. The stronger factor market competition in turn leads to a higher probability of failure for exporting firms, thus uncovering a new mechanism through which changes in trade orientation might affect industry evolution.

The conference was funded in part by the University of Nottingham's Integrating Global Society Research Priority Group, the Nottingham School of Economics, the European Community's Seventh Framework Programme and the British Academy.

Further details of contributions and presentations can be found on the GEP website.

# Annual postgraduate conference

GEP's prestigious Annual Postgraduate Conference marked its 10th anniversary when it was held in April at the University of Nottingham. GEP Fellow Andreas Hoefele rounds up some of the key contributions to another highly successful event.



"The sheer number of high-quality submissions, coupled with the success of previous conferences, compelled the organisers to spread this year's event over two days."

**Andreas Hoefele**  
GEP Fellow

GEP's Annual Postgraduate Conference traditionally attracts an impressive array of PhD students from Europe and the US, and 2011's event proved no exception. Some 24 empirical and theoretical papers, covering issues related to offshoring, FDI, trade policy, European integration and labour market adjustments, were presented.

The sheer number of high-quality submissions, coupled with the success of previous conferences, compelled the organisers to spread this year's event over two days, 14 and 15 April. Professor Daniel Bernhofen, GEP's Director, delivered the keynote lecture, presenting his recent work, *A Resource Augmentation Characterisation of the Gains From Trade*, which he co-authored with John Brown (Clark University) and Tanimoto Masayuki (University of Tokyo).

A prize for the conference's best paper was awarded to Lisandra Flach (University of Mannheim). The judges, chaired by Professor Bernhofen, praised her work for its ambition and its contribution to an important topic.

Some 14 students delivered their work as a stand-up presentation, while 10 opted for posters. With every paper sparking lively discussion, the event generated a perfect atmosphere for the young researchers who travelled to GEP to exchange ideas and be inspired by each other.

In her prize-winning paper, *Quality Upgrading and Price Heterogeneity: Evidence From Brazilian Manufacturing Exporters*, **Lisandra Flach** first distinguishes between the quality sorting model of exporting and the efficiency sorting models. She provides evidence that firms in differentiated goods sectors sort on quality, whereas in homogenous goods sectors the efficiency sorting mechanism dominates. Her results indicate that "firms segment the market and upgrade quality to markets willing to pay more for higher quality". The paper is featured in more detail on pages 12 and 13.

**Jens Wrona** presented his theoretical work

with Udo Kreickemeier (both University of Tübingen) on high-skilled migration. Debate is usually centred on south-north migration, but there is also sizeable migration between developed countries. Wrona and Kreickemeier provide a rationale for skilled migration between two developed countries. The idea is that a worker is not able to signal his or her skill type to a potential employer in the domestic market but can do so when moving to another country, since only highly skilled workers choose to migrate.

**Jasmin Groeschl**, in joint work with Gabriel Felbermayr (both Ifo, Munich), revisits the question of trade openness and growth, analysing countries that have suffered a natural disaster as an exogenous shock. One would expect an increase in trade after a shock, given that an open country imports more to rebuild its economy. Once the economy is restored, conclude Groeschl and Felbermayr, a country should have an export surplus to repay its previous imports – and the economy should have a higher degree of openness. The empirical findings suggest openness has a positive impact on growth.

The participant who travelled farthest was **Deniz Civril** (Brandeis University), who journeyed from the US to present *The Impacts of Technology and Offshoring on Labour Demand: An Analysis Using Microlevel Data*. In this empirical work Civril examines effect of offshoring and skill-biased technological change on the demand for different skill groups in the US. She shows offshoring and technology are substitutes for less skilled workers but complements for skilled workers.

**Jiarui Zhang** and **Lei Hou** (both University of Munich) presented their joint work on how firms that differ in productivity choose whom to borrow money from in their decisions to raise external finance for FDI. Testing their theory, they demonstrate how countries with higher productivity, less risky investment and higher bank costs use more bond finance than bank finance.



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The Rise of the Maquiladoras: Labour Market Consequences of Offshoring in Developing Countries was presented by one of its co-authors, **Benedikt Heid** (University of Bayreuth). This study calibrates a model of the Mexican economy to show how policies aimed at expanding the maquilas sector are welfare-reducing.

**Tobias Ketterer** (University of Nottingham) aims to test empirically the importance of preferential trade on Canada's external tariff liberalisation, as agreed upon during the Uruguay Round. His work, entitled *The Impact of Preferences on Multilateral Tariff Cuts: Evidence for Canada*, also tried to deliver empirical results regarding the role of NAFTA preferences on trade policy decisions of Canada.

Finally, how does a newspaper's stance on globalisation affect a reader's demand for unemployment insurance? Beginning with a quantitative text analysis to measure a publication's attitude towards globalisation, Benjamin Protte (University of Mannheim) offers evidence that there is a link by carrying out a comprehensive examination of survey data on individuals, the newspapers they read and their preferences for such insurance.

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“With every paper sparking lively discussion, the event generated a perfect atmosphere for the young researchers to exchange ideas and be inspired by each other.”



# Quality upgrading and price heterogeneity

The prize for best paper at GEP's recent Annual Postgraduate Conference went to Lisandra Flach (University of Mannheim), whose contribution was praised by the judging panel for its relevance and ambition. Here her work, entitled *Quality Upgrading and Price Heterogeneity: Evidence From Brazilian Manufacturing Exporters*, is presented in detail.



"I use an alternative approach to investigate how firms make their decisions regarding product quality and price across markets, with an analysis that goes beyond cross-section and focuses on within-firm effects."

Lisandra Flach  
University of Mannheim

Recent literature has documented a systematic variation in export performance across firms. The pioneer and seminal heterogeneous-firm models attribute better export performance to firms with higher efficiency and lower marginal costs.

Heterogeneous-firm models such as Baldwin and Harrigan (2007) and Hallak and Sivadasan (2009) have incorporated a quality dimension to explain why large productive exporters use better inputs, sell higher quality at higher prices and have marginal costs increasing in product quality. Empirically, Bastos and Silva (2010), Manova and Zhang (2009) and Verhoogen (2008) are among those to uncover several dimensions of firm heterogeneity and indicate substantial quality variation across firms and markets.

I use an alternative approach to investigate how firms make their decisions regarding product quality and price across markets, with an analysis that goes beyond cross-section and focuses on within-firm effects.

Firms make their decisions on product quality upgrading and product prices depending on the demand for quality in the destination market (northern countries have a higher demand for high quality), on the characteristics of the products they sell (high or low scope for quality differentiation) and on the firms' own characteristics. Products with high scope for quality differentiation and exported to markets in the north receive the quality treatment depending on the changes in firms' characteristics.

For the quality upgrading mechanism I look at changes over time in worker skills, quality of inputs and product innovation decisions at the firm level, compared to the median of the industry.

This relation is exploited using a highly detailed data set for the universe of Brazilian manufacturing exporters. The data set contains information on export sales,

quantities and weights by firm-product-destination, as well as various firm, product and worker characteristics for the period from 1997 to 2000.

The econometric approach used is a quality upgrading mechanism with a DDD (difference-in-difference-in-differences) strategy. I compare sales to the European Union (treated) to sales to Mercosur (control group) for firms that upgraded quality over time (treated) and others that did not (control group) for different types of goods. Preliminary results reveal that in the period under analysis more productive firms in differentiated goods sectors segmented the market and upgraded quality to markets in the north.

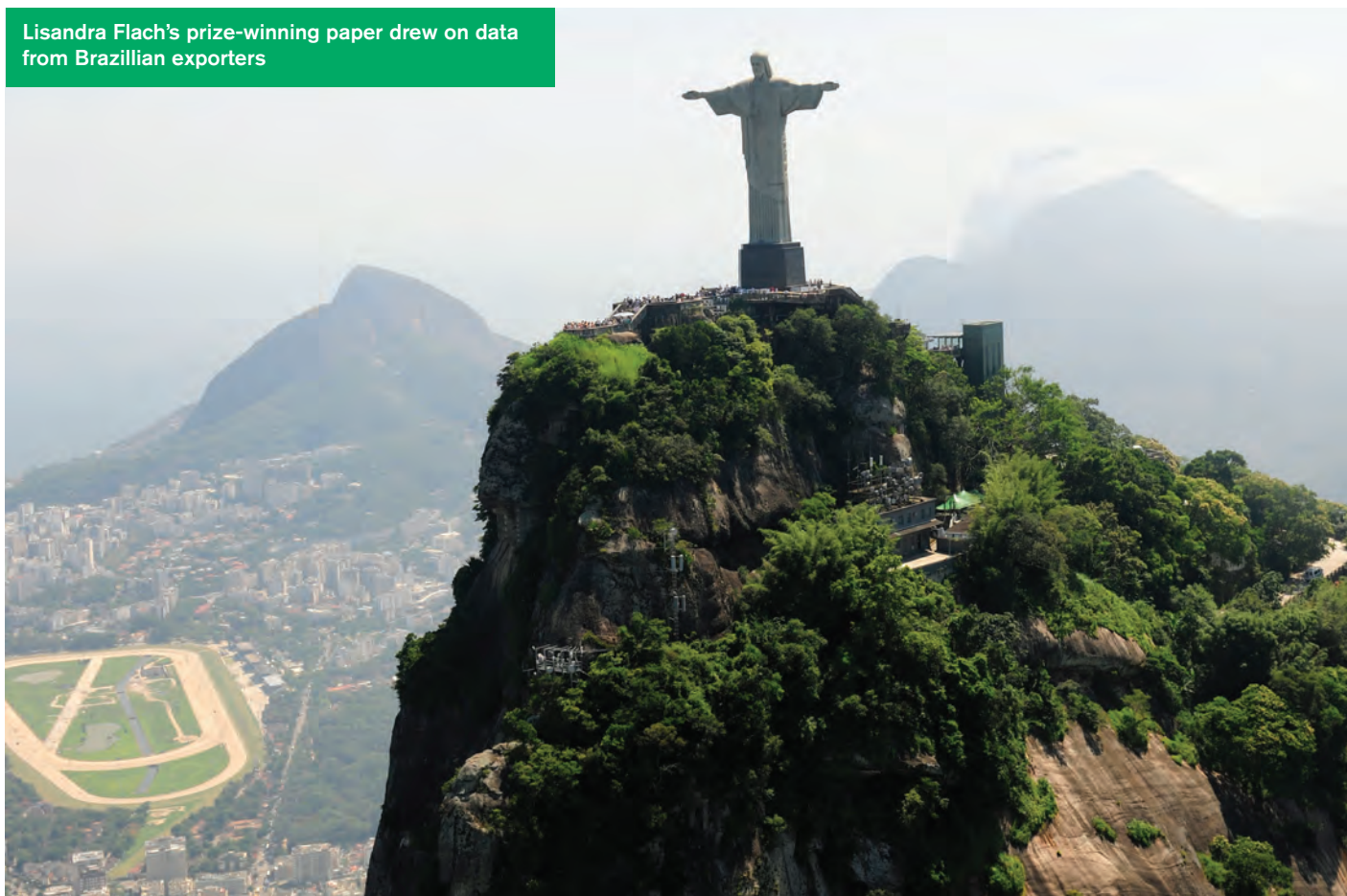
The results for the quality upgrading mechanism are in line with the history of the Brazilian economy. With trade liberalisation in the 1990s, firms faced tougher competition and adapted their products to be able to compete in tougher markets.

The local currency, pegged to the US dollar until 1999, was overvalued in the last years of this period. Thus firms were able to import better technology at lower prices and to adapt their production to international standards. Product innovation rates were 40% higher in the period from 1998 and 2000 in comparison to the later years (PINTEC, 2003).

Among the most cited reasons for manufacturing exporters to innovate during this period were (1) to maintain their markets and (2) to improve product quality (PINTEC, 2000). Moreover, anecdotal evidence points to the fact that many firms created an "export-type product" – a higher-quality variety conforming to the international quality standards (as requested, for instance, in Japan and European countries). Nevertheless, Mercosur countries continued consuming the low-quality varieties as before.



Lisandra Flach's prize-winning paper drew on data from Brazilian exporters



A similar argument for other Latin-American economies is found in Verhoogen (2008) and Brambilla, Porto and Lederman (2010).

This motivates and gives support to the results from this paper. I find firms in differentiated goods sectors adjust prices and quality to different markets.

The main results for the cross-section indicate that firms adjust quality to more distant and richer markets; that the effect of income per capita on prices cannot be explained only by higher mark-ups because of greater market power, since the empirical specification also controls for market competition in several ways; that the price effect is magnified in countries with higher income inequality; and that results hold only for differentiated goods, which have higher scope for quality differentiation. Results are also robust to intra-firm trade, the quality ladder length and the elasticity of substitution in different markets.

For the analysis over time the results from the DDD model indicate more productive firms in differentiated goods sectors upgrade quality to markets willing to pay more for higher quality.

As mentioned before, this result is shown by comparing sales to the European Union (treated) and Mercosur (control group). Thus

I confirm the hypothesis that firms used strategies of market segmentation in the period under analysis and created "export-type products" to markets in the north, as the anecdotal evidence suggests. Without scope for quality differentiation, as expected, this effect is not observed for homogeneous goods.

Even though further research is necessary to refine the mark-up and the quality effect, the results suggest that, besides the well-known productivity premium, the within-firm product quality adjustment is important for firms' success.

"The results indicate that the effect of income per capita on prices cannot be explained only by higher mark-ups because of greater market power."

### References/further reading

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Hallak, J C and J Sivadasan (2009): *Productivity, Quality and Exporting Behaviour Under Minimum Quality Requirements*, NBER Working Paper 14928.

Manova, K and Z Zhang (2009): *Export Prices Across Firms and Destinations*, Quarterly Journal of Economics (forthcoming), NBER Working Paper 15342.

Verhoogen, E A (2008): *Trade, Quality Upgrading and Wage Inequality in the Mexican Manufacturing Sector*, Quarterly Journal of Economics, 123(2), 489-530.

# The Kyoto Protocol and carbon leakage

What are the possible policy implications if countries that sign up to the Kyoto Protocol import more from nations that are free from the same constraints? Rahel Aichele (IfO Institute, Munich) examines the question in a paper presented at GEP's 10th Annual Postgraduate Conference.



“The analysis of competitiveness and especially leakage issues is crucial for policy-makers and the design of future climate agreements.”

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Rahel Aichele  
IfO Institute, Munich

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Although it assigns emission ceilings to 37 industrialised countries for the period from 2008 to 2012, the Kyoto Protocol covers less than half of all anthropogenic greenhouse gas (GHG) emissions. This is because developing countries – and thus major polluters such as China and India – are exempt en bloc and the US did not ratify the treaty. In a globalised world this casts doubts on the effectiveness of emission savings in constrained countries.

Firstly, Kyoto countries lose competitiveness if they increase their costs of GHG emissions through carbon taxes or emission certificates. This could lead to a relocation of production to the non-Kyoto world, in which case Kyoto countries' demand for (carbon-intensive) goods is increasingly served with imports from non-Kyoto countries.

Secondly, international trade can also hamper the environmental effectiveness of the Kyoto Protocol. This is referred to as “carbon leakage”. The world's overall emission level might rise when production relocates to non-Kyoto countries, provided non-Kyoto countries employ more carbon-intensive modes of production and energy sources – a condition most likely met. China, for example, uses coal as a major energy source and therefore has a high level of energy intensity in production.

The analysis of competitiveness and especially leakage issues is crucial for policymakers and the design of future climate agreements. These are concerns policy-makers will need to address if it is proved relocation of industries and leakage are empirically important. To this end, we aim to investigate the empirical impact of Kyoto commitment on trade.

We would like to observe the value of bilateral trade flows of a Kyoto importer from a non-Kyoto country for two scenarios: firstly, the actual trade flow given that an importer decides to make commitments under the Kyoto Protocol; secondly, the counterfactual trade flow when an importer decides to stay out of the Kyoto Protocol. The difference between the two reveals the impact of Kyoto commitment on trade flows.

Unfortunately, the counterfactual trade flow is not observable; yet it can be inferred through the methodology of matching econometrics. The idea behind the matching estimator is quite simple. An algorithm searches for a clone of every treated country pair, and the



clone should be statistically identical to the treated country pair in terms of all defining criteria other than treatment status – that is, the importer should be a non-Kyoto country. The difference between the clone's and the treated country pair's imports represents the causal effect of climate policy.

A benefit of employing matching econometrics is that we can estimate both the average treatment effect (ATE) and the average treatment effect in the subpopulation of the treated (ATT). The ATT is the interesting estimate from a policy point of view, since it tells us how the imports of Kyoto countries (rather than just any country) change with Kyoto commitment.

Finding the right matching criteria is crucial for a successful empirical implementation of matching. We assume a country's decision to sign the Kyoto Protocol depends on development status, preferences for the environment (proxied by the number of multilateral environmental agreements signed), political institutions and energy intensity. Another criterion is the expected competitiveness effect: the idea is that when more (and large) Kyoto countries are nearby this will increase the likelihood of being a Kyoto country, as the negative competitiveness effects are reduced.

Working on the implicit assumption that ratification is the decisive event of the treatment, our study examines a cross-

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## “At present a global emission savings initiative that involves all countries seems rather unlikely.”

section of 95 countries for the year 2004. The treated and untreated country pairs in our sample differ in terms of our matching criteria – an insight arising from kernel distribution functions. Treated country pairs jointly have a larger market size and a higher GDP per capita, sign more environmental agreements (which hints at a higher preference for the environment) and have more Kyoto countries nearby than untreated pairs. Once we run the matching algorithm, however, the kernel distribution of untreated matched pairs (i.e. the clones) is very similar to those of the treated country pairs, indicating that we find good clones for our treated country pairs.

Our first estimates imply an importer's Kyoto commitment significantly increases imports from non-Kyoto countries. The effect is a rise in the range of around 10% to 15%.

Another key finding is that the average effect of Kyoto commitment in the subpopulation of

pairs with committed importers (i.e. the ATT) is higher than that for an average country pair (the ATE). In other words, Kyoto commitment impacts the imports of Kyoto importers more than it affects an average country. A possible explanation could be that Kyoto countries have a comparative advantage in clean products anyway: they import more dirty goods, which are more sensitive to climate policy, hence the larger effect.

What are the potential policy implications of these findings? At present a global emission savings initiative that involves all countries seems rather unlikely, which raises the question of how unilateral climate policies could be designed to overcome the effects of negative competitiveness and leakage.

One option is to target the emissions accruing to consumption – for example, with a tax on the carbon content of a good. Alternatively, a domestic carbon or energy tax on production could be accompanied with carbon-related border tax adjustments. Such measures could help to restore the efficiency of unilateral climate policy.

This article is based on Estimating the Effect of Kyoto on the Carbon Content of Trade Using Matching Econometrics, co-authored by Rahel Aichele and Gabriel Felbermayr (both Ifo Institute, Munich) and presented at GEP's 10th Annual Postgraduate Conference.

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# GEP builds Far East research links

How vital will Asia's role in global economic recovery prove? And what might the future hold for the region if and when that recovery is complete? These were some of the issues discussed when GEP delegates made a first official visit to the College of Economics at Zhejiang University.

Zhejiang University's College of Economics welcomed a GEP delegation for a joint workshop on 18 May as the Centre further strengthened its research links in China.

Entitled Trade Costs, Economic Geography and Firm Heterogeneity, the event examined some of the issues crucial to the region's continued economic success.

Among those representing GEP's Nottingham and Ningbo branches were Centre Director Professor Daniel Bernhofen and Professor Chris Milner, Head of the Nottingham School of Economics.

Professor Milner opened the first of the day-long event's three sessions with a presentation entitled Trade Costs and Trade Composition.

His work on trade costs was recently used to support the setting up of a major Free Trade Agreement between the EU and South Korea after he co-authored a key study into the benefits of the landmark deal, which is expected to come into force in July after winning European Parliament approval.

Professor Milner explained: "Considerable research has been carried out into trade volumes and the impact of costs induced by government policy.

"But economists are increasingly recognising the role played by issues such as transport infrastructure, problems with language and the quality of institutions.

"There's now a wider acceptance that these factors encourage or discourage international trade and that the costs overall are greater than was previously thought."

Professor Bernhofen closed the workshop's final session with a presentation entitled Containerisation and International Trade.

He and two GEP colleagues, Dr Richard Kneller and Zouheir El-Sahli, recently completed what is thought to be the first systematic analysis of the effects of containerisation on global trade.

The period covered in their study ends in 1990, before China entered the world economy, yet the results suggest China's strategy of heavy investment in container ports – a policy it embarked on at the end of the '70s – proved beneficial.

Professor Bernhofen said: "Transportation literature and prominent economic commentators have suggested containerisation has played a large role in the growth of international trade since World War Two.

"Even so, quantitative evidence of containerisation's effects seems to be lacking. Our empirical approach to the question aims to fill that gap in the literature."

Other speakers at the workshop included Dr Saileshsingh Gunessee, of GEP in China, and Professor Xianhai Huang, Professor Shiyuan Pan and Dr Huasheng Song, of Zhejiang University.

The event marked GEP's first official visit to the University, based in Hangzhou Province, and was followed by a tour of the campus.

Professor Bernhofen said: "We were delighted to have an opportunity to exchange ideas and share research with our friends at the College of Economics.

"The trip provided us with a valuable chance to further enhance our work to observe and investigate the global recovery and Asia's vital role in it."

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"Economists are increasingly recognising the role played by issues such as transport infrastructure, problems with language and the quality of institutions."



# Annual Sixth-Form Conference

GEP's annual Sixth-Form Conference has become one of the Centre's most popular events. The 2011 staging again saw record numbers of would-be economists visit the University of Nottingham to enjoy some valuable insights into the discipline.

Government deficits, reduced public spending, interest rates, unemployment, IMF predictions – economics and finance continue to dominate the news agenda.

Small wonder, then, that GEP's annual Sixth-Form Conference yet again attract recorded numbers of would-be economists when it was held in late June.

The event is designed to introduce students to key themes such as globalisation, recession, protectionism and China's growing role in the world economy.

GEP's academics achieve this through lectures and practical exercises that this year were based around issues including technological change, exports and the financial crisis.

Professor Wyn Morgan, whose International Trade Game is always one of the event's most popular features, said: "These students see economics as their future.

"Interest in the subject is at a high – understandably so, given what has happened during the past few years – and it's important to take full advantage of that.

"That's why one of our key tasks on the day is to prove to the students that they're right about the subject – to show them it's a discipline they really will enjoy."

GEP's founding Director, Professor David Greenaway – now Vice-Chancellor of the University of Nottingham – pioneered the idea of the Sixth-Form Conference.

Now in its sixth year, the event is so popular that since 2008 two separate day-long sessions have been necessary to satisfy the intense demand for places.

Professor Morgan, of the Nottingham

School of Economics, which houses GEP, said: "Our approach to teaching always involves plenty of interaction and engagement.

"The conference is true to that philosophy, because we want to harness the enthusiasm of the students and make sure they carry it through to their later studies.

"If they go away reassured that economics is a genuinely fascinating subject and something they want to pursue further then we consider the event a success."

GEP's Director, Professor Daniel Bernhofen, said: "It's easy to forget that only a few years ago economics stories were hidden away inside newspapers' business sections.

"Now we're used to economics being front-page news, which helps explain why more and more students are appreciating what an important and exciting subject it can be.

"It's also worth remembering that a degree in economics can lead to many careers, so even those who ultimately don't go on to work as economists will benefit."

## Conference highlights

### 20 June

Import Protection and Export Promotion?

[Professor Chris Milner](#)

Can China become the next Economic Superpower?

[Dr Zhihong Yu](#)

Firms in International Trade

[Dr Fabrice Defever](#)

Globalisation and Technological Change: An Historical Perspective

[Professor Daniel Bernhofen](#)

The International Trade Game

[Professor Wyn Morgan](#)

### 21 June

Entrepreneurship and the Global Financial Crisis

[Dr Richard Kneller](#)

The Crisis of 2008: A Story of Big Numbers

[Dr Spiros Bougheas](#)

Trade and the Environment

[Dr Tim Lloyd](#)

Winners and Losers of Globalisation

[Dr Alejandro Riaño](#)

The International Trade Game

[Professor Wyn Morgan](#)

## Forthcoming events

### Conferences

The 4th GEP in China conference

#### **China's External Economic Relations**

3 and 4 November 2011

at University of Nottingham, Ningbo, China

featuring

#### **The World Economy Annual China Lecture**

Professor Jun Zhang, Fudan University

and

#### **The Youngor Annual Globalisation Lecture**

David Smith, Economics Editor, The Sunday Times

Joint conference with Ifo Institute

#### **International Trade, Productivity and Factor Movements**

9 and 10 December 2011

Ifo, Munich

### Leverhulme Globalisation Lectures

**Andrew McLaughlin**, Head of Communications and Group Chief Economist, RBS Group

16 November 2011

### GEP Seminars

Forthcoming seminars include:

**Gonzague Vannoorenberghe**

Tilburg University

**Horst Raff**

University of Kiel

**Sebastian Krauthelm**

Goethe University Frankfurt

**Daniel Sturm**

London School of Economics

**Beata Javorcik**

University of Oxford

**Catia Montagna**

University of Dundee

## Research papers

### GEP Research Papers

2011/12

Alessandra Guariglia and Simona Mateut  
**Political Affiliation and Trade Credit Extension by Chinese Firms**

2011/11

Danny McGowan and Chris Milner  
**Trade Costs and Trade Composition**

2011/10

Christopher Parsons  
**Do Migrants Really Foster Trade? The Trade-Migration Nexus: A Panel Approach – 1960-2000**

2011/09

Minjia Chen and Alessandra Guariglia  
**Financial Constraints and Firm Productivity in China: Do Liquidity and Export Behaviour Make a Difference?**

2011/08

Fabrice Defever  
**Incomplete Contracts and the Impact of Globalisation on Consumer Welfare**

2011/07

Udo Kreickemeier and Jens Wrona  
**Two-Way Migration Between Similar Countries**

2011/06

Sai Ding, Alessandra Guariglia and John Knight  
**Investment and Financing Constraints in China: Does Working Capital Management Make a Difference?**

2011/05

Udo Kreickemeier and Frode Meland  
**International Trade, Union Wage Premia and Welfare in General Equilibrium**

2011/04

Shujie Yao, Dan Luo and Lixia Loh  
**On China's Monetary Policy and Asset Prices**

2011/03

Chuanglian Chen, Guojin Chen and Shujie Yao  
**Do Imports Crowd Out Domestic Consumption? A Comparative Study of China, Japan and Korea**

2011/02

Cletus Coughlin and Howard Wall  
**Ethnic Networks and Trade: Intensive Versus Extensive Margins**

2011/01

Spiros Bougheas and Rod Falvey  
**The Impact of Financial Market Frictions on Trade Flows, Capital Flows and Economic Development**



GEP's core of Internal Research Fellows allows it to retain its respected standing as one of the largest clusters of academics anywhere in the world studying the economic aspects of globalisation. This core is backed up by a global network of External Research Fellows and Policy Associates.

## Internal Research Fellows

Professor Daniel Bernhofen (Director), Dr Marta Aloï, Dr Spiros Bougheas, Dr Fabrice Defever, Dr Bouwe Dijkstra, Professor Sourafel Girma, Professor David Greenaway, Dr Andreas Hoefele, Dr Richard Kneller, Professor Chris Milner, Dr Stephen Morgan, Dr Arijit Mukherjee, Professor Doug Nelson, Dr Alejandro Riaño, Professor Lina Song, Dr John Tsoukalas, Dr Richard Upward, Dr Maria Garcia Vega, Professor Shujie Yao, Dr Zhihong Yu, Dr Jing Zhang

## Policy Associates

Mary Amity (New York Federal Reserve Bank), Bob Anderton (European Central Bank), Paulo Bastos (Inter-American Development Bank), Heather Booth di Giovanni (UK Trade and Investment, Department for Business, Innovation and Skills (BIS)), Cletus Coughlin (Federal Reserve Bank of St Louis), Peter Dodd (Department for Business, Innovation and Skills (BIS)), Andrew Gurney (HM Treasury), Tim Harcourt (Australian Trade Commission), Bernard Hoekman (The World Bank), Sébastien Jean (Centre de Recherche de Versailles-Grignon), Nannan Lundin (OECD), John Martin (OECD), Mauro Pisu (OECD), Joana Silva (The World Bank)

## External Research Fellows

Kym Anderson (University of Adelaide), Professor Bruce Blonigen (University of Oregon), Professor John Brown (Clark University), Professor Marius Brühlhart (University of Lausanne), Professor Paul Collier (University of Oxford), Professor Carl Davidson (Michigan State University), Professor Alan Deardorff (University of Michigan), Dr Agelos Delis (Cyprus University), Dr Hartmut Egger (University of Bayreuth), Professor Peter Egger (Swiss Federal Institute of Technology, Zürich), Dr Robert Elliott (University of Birmingham), Professor Simon Evenett (University of St Gallen), Professor Rod Falvey (Bond University, Australia),

Dr Switgard Feuerstein (Erfurt University),

Professor Alessandra Guariglia (Durham University),

Dr Joakim Gullstrand (Lund University), Professor Jonathan Haskel (Queen Mary, University of London), Dr Tom Ilevs (Bristol Business School), Dr Liza Jabbour (University of Birmingham), Dr Beata Javorcik (Oxford University), Professor Wilhelm Kohler (Tübingen University), Professor Udo Kreickemeier (Tübingen University), Dr Maurice Kugler (Harvard University), Professor Xiaoxuan Liu (Chinese Academy of Social Sciences), Professor Sugata Marjit (Centre for Studies in Social Sciences, Calcutta), Professor Steve Matusz (Michigan State University), Dr Daniel Mirza (University of Rennes), Dr Catia Montagna (University of Dundee), Professor Innwon Park (Korea University), Professor Pascalis Raimondos-Møller (University of Copenhagen), Professor Ray Riezman (University of Iowa), Dr Fredrik Sjöholm (Research Institute of Industrial Economics, Stockholm), Professor Constantinos Syropoulos (Drexel University), Professor Mathew Tharakan (University of Antwerp), Professor Vitor Trindade (University of Missouri, Columbia), Professor Jim Tybout (Penn State University), Professor Rod Tyers (Australian National University), Professor Hylke Vandenbussche (Catholic University of Leuven), Professor Ian Wooton (University of Strathclyde),

Dr Zhihao Yu (Carleton University), Dr Xufei (Florence) Zhang (Middlesex University)



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## Contact us:

Leverhulme Centre for Research on  
Globalisation and Economic Policy  
School of Economics  
The University of Nottingham  
University Park  
Nottingham NG7 2RD  
United Kingdom

If you need this publication in alternative  
formats, please contact **Sue Berry**  
**tel:** +44 (0)115 951 5469  
[sue.berry@nottingham.ac.uk](mailto:sue.berry@nottingham.ac.uk)