



Newsletter

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GEP discusses future research strategy

by David Greenaway, GEP Director

Professor of Economics, University of Nottingham

GEP held its annual 'Research Retreat' at the beginning of May. This involves all members of the Centre and is a key opportunity to take a forward look on all its Research Programmes and outreach activity. Of course, it is essential for these meetings not to be introspective and to take advice from colleagues from outside of GEP and we were delighted to secure the agreement of distinguished colleagues from both the academic and policy-making communities to participate in this event. We benefited enormously from contributions from: Heather Booth di Giovanni (UK Trade and Investment); Alan Deardorff (Michigan State University); Jonathan Eaton (New York University); James Harrigan (New York Federal Reserve Bank); Wilhelm Kohler (Eberhard Karls University, Tübingen);

Xiaming Liu (Birkbeck College, London); Jonathan Portes (Department for Work and Pensions); and Ken Warwick (Department of Trade and Industry).

Our visitors provided invaluable insights into the possible future direction of GEP's research activity and contributed to lively discussions around all of GEP's Research Programmes. The entire event was both intellectually stimulating and enjoyable and generated a rich menu of possibilities for future work.

We look forward to developing GEP's research activity further and to continued interaction with our external colleagues. We will also discuss the outcomes with GEP's Strategic Advisory Board, which meets in June.



Participants at the 2007 GEP Retreat

Leverhulme Globalisation Lectures

Ed Balls

Economic Secretary to HM Treasury

6th July 2007, University of Nottingham

David Smith

Economics Editor of the *Sunday Times*

4th December 2007, University of Nottingham

The World Economy Annual Lecture 2007

Professor Dani Rodrik

**Professor of International Political Economy
at Harvard University**

18th October 2007, University of Nottingham



GEP News



Participants at the Chinese Economic Association (UK) Conference 2007 at Nottingham

GEP closely associated with new China school

GEP Centre Director, Professor David Greenaway, gave one of the keynote lectures at the opening of the Chinese Economic Association (UK) annual conference last month.

The Conference was held at the University of Nottingham and coincided with the opening of the University's new School of Contemporary Chinese Studies. The University is also home to the Chinese Policy

Institute. All are closely affiliated with GEP and GEP Research Fellow Shujie Yao is Head of the new School (see his article: *Can China Really Become the Next Superpower?* on page 14).

Professor Greenaway explored the theme of globalisation as both an opportunity and a threat and also discussed the international threats to the progress of globalisation.

Strong lecture programme ahead

The 2007 public lecture programme is expected to draw strong interest, with Ed Balls MP, currently Economic Secretary to the Treasury, leading the line-up.

Mr Balls, who visits in July, has close ties to Nottingham. He is a former pupil of Nottingham High School; his father, the renowned biologist, Professor Michael Balls, is an Emeritus Professor at the University of Nottingham.

Mr Balls is followed, in October, by Professor Dani Rodrik, Professor of International Political Economy at Harvard University. Professor Rodrik's latest book, *One Economics, Many Recipes: Globalization, Institutions, and Economic Growth* will be published shortly.

In December, David Smith, Economics Editor of *The Sunday Times* will be a returning guest speaker. See the notice on the adjacent page for dates and times.

Wolf packs them in

Martin Wolf, Associate Editor and Chief Economics Commentator for *The Financial Times* attracted a full house for his March Leverhulme Globalisation Lecture on *The Rise of the Asian Giants*.

Mr Wolf compared China and India – looking at how their different historic experiences have shaped their approach to economic growth. He used a wealth of statistics to contrast their relative economic achievements before examining the future prospects for both countries.

He concluded that India is in an excellent position to exploit the opportunities available to it and that its performance has greatly improved over the past 15 years, but China's superior performance shows that India could do much better. He argued that the inevitable rise of China and India will surely end the era of European economic dominance.



Martin Wolf and David Greenaway



Jim Markusen

Extending the Boundaries of Traditional Trade Theory: Fragmentation, Productivity Transmission and Offshoring

In February 2007 GEP hosted the *Nottingham Lectures in International Economics* on the theme of "Multinational Firms". The speaker of this year's Lecture was **Jim Markusen**. In his Lectures he focuses on the location, production and welfare effects of large-scale firms and multinational corporations. He summarised work both on theoretical models and numerical, computer simulation models. In this article Jim offers a brief summary of the Lectures. Jim is a Professor of Economics at the University of Colorado and at University College Dublin.

When I was a graduate student taking international trade theory in the early 1970s, the field was in a rut. New research tended to be on increasingly uninteresting extensions of the Heckscher-Ohlin model, such as the possibility of factor-price equalization with many goods and factors. Who could care? Any small amount of trade costs destroyed the possibility of factor price equalization no matter how many goods and factors are in the model. Similarly, theory was entirely dominated by the assumptions of perfect competition and constant returns to scale. When I took my first job in Canada in 1973, I could not reconcile what I saw in the Canadian economy (a manufacturing sector dominated by affiliates of foreign firms) with what I was teaching to students.

These difficulties led me on a long journey focused in particular on the incorporation of multinational firms, producing with increasing returns to scale in an environment of imperfect competition and trade costs, into the theory of international trade. My three Nottingham lectures consisted of recent but rather disjoint papers in the latest leg of the journey.

The first lecture draws on a paper with Tony Venables, trying to interface trade costs with

factor endowments. We had long been dissatisfied with the traditional tool of trade theory, the world Edgeworth box, because it presents only a series of two-country models. Important questions about trade costs cannot be answered with that model. For example, with only two countries, there is only one trade cost: one cannot talk about the difference between a low-cost capital-abundant country and a high-trade-cost capital-abundant country. Secondly, countries with the average world endowment will not trade since the other country has the same endowment by definition, a prediction which is clearly counter-empirical.

My paper with Tony introduces a new box, where each country has both a row (trade cost) and column (relative factor endowment) index. All countries trade together simultaneously, a model we can solve numerically using the modern non-linear complementarity solver in GAMS (general algebraic modelling system), in our case 29,000 non-linear weak inequalities in the same number of complementary variables. We are able to analyze in detail the patterns of production and trade specialization, welfare and factor-price changes due to trade, and analogs of export-

platform versus market-oriented production discussed in the multinationals literature. We then conduct a fragmentation experiment, in which one good can be geographically decomposed into stages, and find some novel results. These include the fact that some countries trade less as a consequence of fragmentation and some countries are worse off by this development.

My second lecture addresses an old question, which is the extent to which there are “spillovers” to local firms and/or workers from the entry of foreign multinational firms into the domestic economy. This paper, with Danish co-authors Nikolaj Malchow Møller and Bertel Schjerning, considers the effects of foreign ownership on domestic wages. While this question has been dealt with before (including by Nottingham’s Holger Görg), we are able to both develop a new theoretical approach and bring a terrific matched worker-firm data set from Denmark to the issue. The theoretical model uses recent developments from heterogeneous firm models together with earlier work by myself on worker learning on the job, in which workers are ex ante identical. The model predicts that the average worker in a foreign owned firm earns more, has a steeper earning profile and earns more in subsequent employment or self-employment than the average worker in a domestic firm. However, the model also predicts that these differences disappear when controlling for firm size and experience. Our results are that the uncontrolled estimates fit the theory well. When controlling for firm size, experience and other worker observables, much of the foreign-ownership effect disappears as the model predicts, but not all. Thus a residual foreign ownership effect remains, and this will no doubt be the subject of future work.

The third lecture involves trade in business services, a topic that has received a great deal of attention as part of the more general offshoring debate over the last couple of years. I suspect that one reason for this interest lies in the fact that many examples and anecdotes involve the offshoring of relatively skilled-labour intensive services. It was one thing when the high-income countries were losing relatively low-skilled manufacturing jobs, but good white-collar jobs seemed secure. Now these examples of the loss of some of the latter have alarmed policy makers and business journalists.

A question that quickly arises is whether or not services are really any different from goods and whether liberalizing trade in services somehow has different effects from trade in goods. At the level of abstract theory there is really no difference. However, at the level of applied theory and certainly at the policy level there are considerable differences. At the theory level, many of these business services are intermediates that improve business productivity and make manufacturing firms, for example, more efficient and competitive. Their importance at the policy level lies in

large part from the fact that the barriers that impact on trade in business services are very different from the barriers to trade in goods. In the latter case, we think of transport costs, tariffs and other border barriers as being the chief impediments. In the case of services, the barriers are more typically inside the county: right of establishment for foreign firms, national treatment, restrictions on visas for foreign personnel, residency and employed-of-locals regulations, and so forth. Often services are in sectors where both domestic and foreign firms face high and non-discriminatory regulation, such as banking, finance, insurance, accounting, legal services and telecommunications.



Jim Markusen during his lecture

In my paper, I present a numerical simulation model in which firms can directly trade services much as goods are exported, but may also establish a foreign commercial presence through a subsidiary, and those subsidiaries may serve the local market and/or perform services for the parent firm. The model considers different barriers to trade and/or investment in services, and contrasts how these different barriers affect goods production and trade, factor prices, and welfare in both the home and host country. While these are just theoretical simulations, results indicate that internal (non-border) policies that raise the costs of entry and/or continuing operations of foreign multinational firms can have welfare effects significantly greater than border barriers to trade in services.



Vitor Trindade

Preferences, Demand and International trade

In October 2006 **Vitor Trindade** visited GEP. In this article he contrasts the big emphasis given by trade theory to supply side explanations, to the small emphasis given to demand side explanations. He calls for more attention to the latter and presents his recent work with Mitra that focuses entirely on the role of demand in the structure of trade in a model where rich and poor in one country consume different combinations of goods. Vitor is a GEP External Fellow. He is an Associate Professor of Economics at the University of Missouri-Columbia.

Let us imagine that Mars were well endowed with economists, and that one such economist were to descend upon Earth, charged with the mission of finding out anything she could about the state of economic research in our lower planet. Given the dismal volumes of terrestrial – Martian trade (grand total: one terrestrial probe exported so far), our economist might focus her attention specifically on the ongoing research on international trade. She would perhaps begin by collecting some readily available data on country-to-country international trade, and then she would look around for theories that humans have proposed over the past few centuries to explain trade.

Naturally she would look with admiration upon the insights provided by David Ricardo, and his subtle distinction between absolute and comparative advantage. Digging a little deeper she would then realize that humans had already been able to figure out one main source of comparative advantage, namely that different countries are endowed with different proportions of resources, some of which are more adequate to make some goods than others. However, by this stage of her investigation our economist is beginning to have a sense that something is amiss, although she cannot put her (one) finger on what that might be. After looking for more recent explanations for international trade, she finds the theories based on increasing returns to scale. “A-ha,” she muses, “I finally

know what I was looking for.” Soon after, she wrapped up her investigation, leaving for Mars more knowledgeable than she was before, but also still somewhat puzzled.

To understand her puzzlement and make sure we can enhance Martians’ eureka moments whenever they return, let us consider what international trade is. If we simplify as much as we can, we can say that a country’s trade is simply equal to its aggregate production minus its aggregate

Let us imagine that Mars were well endowed with economists, and that one such economist were to descend upon Earth (...) and look around for theories that humans have proposed over the past centuries to explain trade.

consumption (this ignores, among other things, inventories and trade costs). Thus: $T=S-D$, where T , S , and D are vectors of goods that represent net trade (exports), domestic supply and domestic demand, respectively. For an observer coming from outer space (an observer, that is, who is intelligent enough to understand economic theory, but who does not know any terrestrial economics), it would seem likely



Economist from Mars!

that about “half” of the theories of international trade would deal with the supply side, with the other half dealing with the demand side. This observer would be sorely disappointed. She would note that the Ricardian explanation for trade relied solely on differences in the supply side (in particular, different productivities in the range of goods that a country can produce), while the Heckscher-Ohlin theory focused on the supply of the different factors of production that are necessary to produce goods. When our Martian economist researches the eighties, of course, she does find some demand side explanations. In particular, she would realize that the demand side may play a role in the monopolistic competitive model. For example, if all goods are differentiated but are produced with identical factor intensities, then there would be no reason to trade except if consumers love variety and therefore prefer to consume all possible varieties, including those produced abroad. This is what in one step led our Martian economist both to her “a-ha” moment and to her disappointment.



Planet Earth and Planet Mars!

For an observer coming from outer space (...), it would seem likely that about “half” of the theories of international trade would deal with the supply side, with the other half dealing with the demand side. This observer would be sorely disappointed.

Indeed, after this “a-ha” moment there followed an uneasy sense that the demand-side explanations were a small minority of the explanations of trade. Looking further, she would have found that the “eclectic” explanations by Markusen (1986) included nonhomothetic preferences as a cause for trade. But, moving to more recent research, it would have seemed that the demand side disappeared again. For example, in their account of global factor trade, Davis and Weinstein (2001) only briefly consider it. Furthermore, in their review article (Davis and Weinstein 2003), they state that “another area that cries out for more research is the demand side of the model.”

It is to address this kind of puzzlement that some more recent research has arisen. In the first published piece whose focus is almost entirely on the demand side, Mitra and Trindade (2005) abstract from supply considerations by assuming that all countries have identical constant-returns-to-scale technologies and identical supply of factors and there are only two homogeneous goods. That means that in the classical theory of trade there would be no trade, since the “Y” in the formula for trade would be identical across countries. But in Mitra and Trindade’s model there will be trade, caused by differences in the “D.” These differences

Preferences, Demand and International Trade



Daniel Bernhofen and Vitor Trindade during Vitor's visit to Nottingham

arise because the authors assume that preferences are nonhomothetic, implying that the rich and the poor in one country consume different combinations of goods.

Assume now that countries are only different in the income inequality within each country. Suppose that we increase the inequality level in a country by taking one dollar from a poor person and giving it to a rich person. Because preferences do not "scale up," when these two operations are translated into consumption changes, they do not just cancel. In particular the poor person will decrease his consumption of basic necessities such as food, while the rich person will increase his consumption of luxury goods, such as tourism. Therefore, as the country is growing in inequality, the larger its aggregate consumption of "luxury" goods will be, and the smaller its consumption of "necessity" goods.

Going back to our model world of two countries, this means that the unequal country consumes more luxuries and fewer necessities. But since we assumed that their supplies are the same, the two countries will trade, and in particular the unequal country will export necessities and import luxuries. The driving force of their trade (in the formula where $T=S-D$) is then placed squarely on the "D." This theory is confirmed empirically by Dalgin, Trindade and Mitra (2007).

Even more recent research takes up the challenge by Davis and Weinstein (2003) and attempt, as Davis and Weinstein (2001) have done, to account for the global factor content of trade. See Reimer and Hertel (2007) for an example. Kim and Trindade (2007) deduce how the factor content of trade is modified when the demand side is changed from simple homothetic and identical tastes to more complex situations, and find new testing equations that account for trade. This research is very preliminary but there are some indications of the importance of demand on trade. We hope that this line of research will finally be able to "put demand back on trade," as expected by our neutral Martian observer.

Further Readings

- Dalgin, Muhammed, Vitor Trindade, and Devashish Mitra (2007) "Inequality, Nonhomothetic Preferences and Trade: a Gravity Approach," *Southern Economic Journal*, forthcoming.
- Davis, Donald R. and David E. Weinstein. 2001. "An Account of Global Factor Trade." *American Economic Review*, 91 (5), 1423–1453.
- Davis, Donald R. and David E. Weinstein. 2003. "The Factor Content of Trade." In Kwan Choi and James Harrigan (eds.), *Handbook of International Trade*. Basil Blackwell.
- Kim, Yeonjoon and Vitor Trindade. 2007. "Demand and Supply Effects in the Factor Content of Trade," University of Missouri manuscript.
- Markusen, James R. 1986. "Explaining the Volume of Trade: an Eclectic Approach," *American Economic Review* 76, 1002–11.
- Mitra, Devashish and Vitor Trindade. 2005. "Inequality and Trade," *Canadian Journal of Economics*, 38 (4), 1253–1271.
- Reimer, Jeffrey J. and Thomas W. Hertel. 2007. "Non-homothetic Preferences and International Trade," Oregon State University manuscript.

GEP Forthcoming Conferences

GEP Sixth Form Conference

26th June 2007, University of Nottingham

Speakers: David Greenaway, Richard Kneller, Tim Lloyd, Chris Milner and Wyn Morgan

Convenor: David Greenaway (GEP, University of Nottingham)

New Directions in International Trade Theory

8th and 9th June 2007, University of Nottingham

The speakers include: James E. Anderson (Boston College), Daniel Bernhofen (GEP, Nottingham), Rick Bond (Vanderbilt), Rod Falvey and Udo Kreickemeier (GEP, Nottingham), Mark Gibson (New Mexico), Yunfang Hu (Kobe), Ron Jones (Rochester), Carsten Kowalczyk (Tufts), Peter Neary (Oxford), Ray Riezman (Iowa), John Whalley (Western Ontario).

Convenors: Daniel Bernhofen (GEP, University of Nottingham) and Ray Riezman (University of Iowa and GEP)



GEP Forthcoming Conferences

CESifo (University of Munich) and GEP joint Workshop on

'The Economics of Aggregate Shocks in Heterogeneous Firm Models'

18th and 19th July 2007, Venice
(part of the CESifo Summer Institute 2007)

Convenors: Peter Egger (CESifo, University of Munich) and
David Greenaway (GEP, University of Nottingham)

Globalisation and Migration

19th October 2007, University of Nottingham

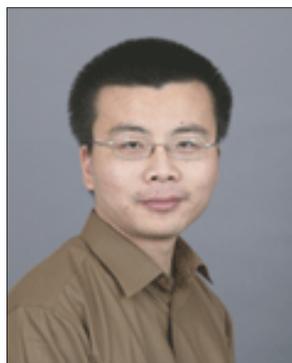
Convenors: Daniel Bernhofen (GEP, University of Nottingham) and
Giovanni Facchini (University of Illinois)





Paulo Bastos

Conference Report: GEP Sixth Post-Graduate Conference



Zhihong Yu

In April GEP hosted its sixth annual Post-Graduate Conference. The event attracted young post-graduate students from Europe, America and Asia. In this Conference report the organisers **Paulo Bastos** and **Zhihong Yu** comment on the themes of the papers presented and their main findings. Paulo Bastos and Zhihong Yu are GEP Research Fellows.

This year the Annual GEP Post-Graduate Conference, which is open to PhD students addressing topics related to globalisation, reached its sixth edition. This year's conference gathered together 25 presenters, representing 12 universities and three continents! The quality of the papers was very impressive, reflecting the growing interest in globalisation topics and the intensity of research. In the light of the growing number of high quality submissions, this year's programme was the biggest to date comprising seven sessions with stand-up presentations and one poster session, over two days. In addition, the conference proceedings benefited from two innovations. Firstly, the programme was enriched by a keynote speech by a leading scholar in the field: Professor Daniel Bernhofen from GEP, University of Nottingham, gave a keynote address entitled 'On the Magic Behind David Ricardo's Four Mystical Numbers'. Secondly, the Centre introduced a best paper prize, which was selected by a committee comprising Professor David Greenaway (GEP Director), Professor Daniel Bernhofen and the conference organisers. The winner of the 2007 GEP Postgraduate Conference Best Paper was **Sebastian Krauthem** (European University Institute) for his paper 'Gravity and Information: Heterogeneous Firms, Export Networks and the Distance Puzzle'.

In order to give a flavour of the high quality work that is being performed by these young

researchers, we report on some selected papers, one from each of the seven sessions of stand-up presentations. *Sebastian Krauthem* (European University Institute) presented his prize-winning paper in the session '**Trade and Information**'. Sebastian's work provides an explanation for the puzzling evidence regarding the effect of distance on trade flows obtained from estimated gravity equations. The article sets up a model of international trade in which heterogeneous firms can form informational networks to decrease their fixed costs of exporting. Compared to existing theories, the effect of distance on aggregate trade flows is endogenously magnified and an improvement of the (exogenous) network technology turns out to be an explanation for the increase of estimated distance effects over time. An empirical gravity equation is then used to obtain an estimate of the magnitude of the effect. In the light of the model, the empirical results on the effects of distance on international trade appear considerably less puzzling. In the session '**Economics of MNEs**', *Roger Bandick* (Örebro University & Södertörn University College) presented a paper in which he investigates empirically the survival differences between foreign and domestic MNEs, on one hand, and between globally engaged plants and purely domestic plants on the other. Exploiting a census of Swedish manufacturing plants over 1993-2002, he

Conference Report: GEP Sixth Post-Graduate Conference

finds that plants owned by MNEs have higher exit probability than plants owned by Swedish non-MNEs. In addition, he shows that foreign MNEs and export active plants have the highest survival rates than domestic oriented and purely domestic MNEs, and that foreign presence seems to explain some part of the exit risk of domestic oriented plants but not of Swedish MNEs. In the session **'Heterogeneous Firms and Globalisation'**, *Isao Kamata* (University of Michigan) analysed how factor proportions

of Brazilian wages' in the **'Globalisation and Labour Markets'** session. His article estimates the structural parameters of a model of NEG applied to a dataset of Brazilian wages, incorporating individual characteristics such as schooling and experience. In contrast to previous studies, Rodrigo considers all the market potential of a region (intranational and international) and shows that an important part of the spatial inequality is due to worker heterogeneity. However, he also finds that market potential plays a significant role in the determination of Brazilian wages, with an impact similar to that found for the European countries. In addition, he finds that the international component of the market potential is also important, suggesting a new channel through which trade liberalization could affect wages in Brazil. In the session **'Topics on Foreign Direct Investment'**, *Kullapat Suetrong* presented her paper "Privatisation, Strategic FDI and welfare" (co-authored with Arijit Mukherjee). In an international Cournot mixed oligopoly model, their paper analyses the interaction between privatisation and FDI. It is shown that privatisation increases incentive for FDI which, in turn, increases the incentive for privatisation compared to the situation of no FDI. The optimal degree of privatisation depends on the efficiency level of the public firm and the foreign firm's mode of entry. Furthermore, the paper investigated the implications of incentive contracts between owners and managers on the privatisation-FDI relationship, and finds that both the incentive for FDI and the optimal degree of privatisation are higher under the incentive contract than under no incentive contract. In the last session **'International Trade Theory and Methods'**, *Roberto Bonfatti* (London School of Economics) presented his paper 'Why Decolonization?'. He builds a simple trade model of colonialism, which links decolonization to the evolution of world's factor endowments. In his model, a labour (or land) intensive colony and its capital intensive colonizer trade, creates substantial gains from trade. Gains from trade are shared according to the balance of power existing between the two countries: while the colonizers control formal political power, the colonized have the ability to stage a successful revolution at some stochastic cost. The attribution of gains from trade is also determined by the fact that the rest of the world is interested in trading with the two countries. The more capital intensive is the rest of the world relative to the colonizer, the higher the incentives for the colony to stage a revolution, the larger the probability that the colonizer has to concede a larger share of gains from trade and, possibly, grant independence.



Participants of the GEP Post-Graduate Conference

determine the extensive margin of trade in a multi-sector HO model with heterogeneous firms. The paper provides evidence that more varieties are exported in industries in which the exporter has the comparative advantage, a result that supports the predictions of the theoretical model. The session **'Trade Costs and Economic Geography'** included the presentation of the paper 'Preferential Trade, Sunk Costs and the Path-Dependant Expansion of Exports' by *Ingo Borchert* (University of St Gallen). Theoretically, Ingo shows that in the presence of sunk costs to exporting, preferential tariff liberalization may trigger a geographic spread of exports to third markets outside the preferential trading area. This prediction is then tested empirically for the pattern of Mexican exports after the inception of NAFTA to several Latin American trading partners and the empirical results are consistent with the hypothesis that initial exports to the United States further prompted exports to third markets. *Rodrigo Paillacar* (University of Paris 1) presented his paper 'Market potential and worker heterogeneity as determinants

Heterogeneous Firms, Exporter Networks and the Effect of Distance on International Trade



Sebastian Krautheim

The winner 2007 GEP Postgraduate Conference Best Paper was **Sebastian Krautheim** for his paper 'Gravity and Information: Heterogeneous Firms, Export Networks and the Distance Puzzle'. In this article Sebastian summarises the main findings of his paper. Sebastian is a PhD Student at the European University Institute and his research focuses on International Trade and FDI in the context of models with heterogeneous firms.

This paper proposes a model of international trade with heterogeneous firms and exporter networks. The main contribution is to show that the introduction of exporter networks leads to higher predictions for the effect of distance. Furthermore, an improvement of the network technology delivers a plausible explanation for the increase in estimated distance effects over time. An estimation of the magnitude of the effect suggests that the estimated distance elasticities are not as 'puzzling' as standard analysis would suggest.

The 'Distance Puzzle'

Standard models of international trade suggest that the trade costs between two trading partners (proxied by their geographical distance) should play a significant, but quantitatively moderate, role in determining trade flows. According to these models, one would expect – all else being equal – trade to be about 0.2% lower if the geographical distance is 1% larger. For a detailed discussion, see Anderson and van Wincoop (2004).

Empirical studies, however, find much stronger effects of distance: in the data, the negative relationship is about one to one. This high level is not the only surprising feature of estimated distance effects: over long periods (in particular from the 1950s to the 1980s) the effect of geographical

distance on trade flows has been *increasing* over time and has remained high since then. An in-depth analysis of these findings is provided by Disdier and Head (2007).

The obvious question to ask is how it is possible that in periods of great improvements in transport and telecommunication technologies, the effect of geographical distance on trade flows is so strong, and how this effect can even be increasing over time.

It has been argued in the literature that a mis-specification in the empirical studies could cause an overestimation of the effects of distance. One argument is that a variable which is correlated with distance and important for trade flows might have been omitted in these studies. This variable, however, has not been found yet. The results of empirical studies using the standard techniques have also been questioned because of different methodological concerns. Several modifications have been proposed and are discussed controversially. Dust has not yet settled on this debate.

Exporter Networks and Distance Effects

Instead of joining the debate about econometric techniques and omitted variables, this paper addresses the issue

Heterogeneous Firms, Exporter Networks and the Effect of Distance on International Trade



Sebastian Krautheim and Daniel Bernhofen

from the theoretical side, building on recent advances in the theory of international trade.

The starting point of the analysis is that information is crucial for exporting. Firms in country i are able to reduce their fixed costs of exporting to a given destination j by exchanging information about this market with other firms. The more firms are exporting to j (and the larger the fraction of firms participating in this informational network), the lower the fixed cost faced by each individual firm will be. Koenig (2005) provides evidence for such destination-specific ‘spillovers’ between exporters. Evidence for the importance of information for the fixed costs of exporting, as well as the interaction of firms to obtain this information, can be found in survey studies such as DIHK (2005).

Using tools and concepts from the recent microeconomic literature on network theory, exporter networks are introduced into a model of international trade with heterogeneous firms (building on Chaney (2006)). It is shown that the unique pairwise-Nash equilibrium is a network of all firms in country i exporting to country j . In other words: all exporters decide to exchange information. The larger the number of exporters, the more information is available to the individual firm, which in turn reduces the fixed costs of exporting.

The general equilibrium analysis shows that this simple mechanism turns out to be quite useful to explain the high level and the increase over time of the estimated effects of distance on international trade flows.

First, consider the high level of the distance effect in the model. The number of exporters is larger, the closer the destination market because more firms can afford to export there. By generating more information, this larger number of exporters decreases the level of fixed costs of exporting and leads more firms to start exporting, which increases trade flows. This additional effect increases in the proximity of the destination market. Thus, the informational network of exporting firms magnifies the effect of geographical distance on trade flows.

Second, consider the increase over time of estimated distance effects in the light of ongoing technological improvement. If the ‘network technology’ is improving over time (for example, due to improving information technologies) the effect of the number of exporters in the network on the fixed cost of exporting increases, which increases trade flows. Because the number of exporters decreases in distance, this effect is stronger the closer the trading partner. So, an improvement of the network technology leads to more trade

The introduction of exporter networks leads to higher predictions for the effect of distance. Furthermore, an improvement of the network technology delivers a plausible explanation for the increase in estimated distance effects over time.

with all trading partners, but the increase in trade is *disproportionately stronger for closer countries*. This effect would appear in the data as an *increase* in the estimated distance effect because ‘being close’ now has a *stronger* impact on trade flows. So, contrary to what one might expect given increasing distance effects, the model suggests that trade is not getting ‘more difficult’ over time. In fact, it is getting easier, but disproportionately so for closer countries.

Empirical Evidence:

There are some testable implications of the model that are supported by existing empirical evidence. In particular, the influence of the degree of firm heterogeneity and of the elasticity of substitution between varieties on the effect of distance on trade flows is predicted correctly by the model: lower degrees of firm heterogeneity and substitutability between varieties increase the effect of distance on trade flows.

Estimating the model's equation for aggregate trade flows using cross-sectional data of trade in differentiated goods, delivers a direct estimate for the strength of the additional effect caused by the introduction of exporter networks. The magnitude turns out to be such that the theoretical predictions of distance effects come quite close to the empirical findings.

Further readings:

Anderson, James E. and Eric van Wincoop, (2004) "Trade Costs", *Journal of Economic Literature*, 42, p.691–751.

Chaney, Thomas (2006) "Distorted Gravity: Heterogeneous Firms, Market Structure and the Geography of International Trade", mimeo: University of Chicago.

DIHK (2005) "Going International: Erfolgsfaktoren im Auslandsgeschäft". (Deutscher Industrie und Handelskammertag – German Chamber of Commerce, Berlin).

Disdier, Anne-Célia, and Keith Head (2007) "The Puzzling Persistence of the Distance Effect on Bilateral Trade", *Review of Economics and Statistics*, (forthcoming).

Koenig, Pamina (2005) "Agglomeration and the Export Decision of French Firms", INSEE Working Paper no. 2005–02.

GEP Forthcoming Conference 2008

'Regionalism in Asia'

16th and 17th January 2008, in Malaysia

Keynote Speaker: Richard Baldwin (Graduate Institute of International Studies, Geneva)

The Conference Programme includes

The World Economy Annual Lecture

By Kym Anderson (World Bank and University of Adelaide)





Doug Nelson

Conference Report: New Political Economy of Globalisation

In April 2007 in New Orleans there was a joint GEP/Tulane University Murphy Institute conference on the “New Political Economy of Globalisation”. In this Conference report the organiser **Doug Nelson** comments on the themes of the papers presented and their main findings. Doug is a GEP Professorial Research Fellow. He is also a Professor of Economics in the Murphy Institute and the Department of Economics at Tulane University.

One of the most active areas of recent research in economics and political science is the political economy of globalization. Not only has there been notable advance in both theoretical and empirical work in both fields, there has been a decided improvement in communication between the fields. This year’s joint GEP/Murphy Institute conference, on “New Political Economy of Globalization”, provides evidence for both of these claims. The 13 papers (available to download from the conference website: <http://www.tulane.edu/~dnelson/PEGznConf/Program.htm>), were prepared by a distinguished group of economists and political scientists.

The conference opened with *Costas Syropoulos* presenting his paper (jointly authored with Stergios Skaperdas and Michelle Garfinkel) “Globalization and Domestic Conflict”, in which the authors extend conflict theoretic models (in which conflict is based on imperfectly assigned property rights) to the open economy situation. They derive a number of results on the welfare effects of trade as well as on comparative advantage.

Kevin Grier presented his paper (jointly authored with Michael Munger) “On Democracy, Regime Duration and Growth”. In this paper, the authors use a large panel (135 countries for 1950-2003) to examine

the effect of regime type on growth performance, finding that autocracies grow almost 1 percent slower than non-autocracies. They also find that the growth rates rise rapidly for about 35 years and then fall, while the growth rate of democracies rises more slowly with a duration of over 100 years.

The two papers in the next panel were concerned with issues of preferences for fairness. *Michael Hiscox* (in joint work with Nick Smyth), “Fair Trade and the Demand for Labor Standards”, presented evidence from an experiment in which identical products in a major retail store in New York were labeled as being produced under fair labor conditions (or not) and found that demand for the fair product was highly inelastic with respect to prices up to 20% higher. In addition Hiscox presented results from a series of internet auctions (of coffee), in which consumers were found to be willing to pay a premium to acquire the “fair trade” coffee. *Carl Davidson* (in joint work with Steve Matusz and Doug Nelson) examined the implications of a preference for fairness (as represented by Fehr-Schmidt preferences) for optimal trade policy in an environment with equilibrium unemployment.

The first day closed with a pair of empirical papers on the foundations of domestic trade (and aid) policy. *Helen Milner* (in joint work

with Dustin Tingley) presented “American Foreign Policy and the Internationalist Coalition: Legislative Coalitions Supporting Internationalism in American Trade and Aid”. Examining the pattern of voting in the US House of Representatives (from 1979-2004), this paper finds that the coalitions supporting these two policies differ in some politically significant ways. In particular, labor and liberal Democrats support aid but have ceased to support liberal trade. *Kishore Gawande* (with Pravin Krishna and Marcelo Olarreaga) presented “What Governments Maximize and Why: The View from Trade). The authors introduce a number of institutional and political variables into an empirical framework based on the Grossman and Helpman “protection for sale” model. The authors argue that these variables, which are often significant, are broadly consistent with our sense of their effects.

The second day began with *David Wildasin's* paper, “Trade, Risk and the Demand for Social Insurance: A Global Perspective”. Wildasin introduces a very different analysis of the link between globalization and income risk — an issue that has been a major topic of research in both political science and economics. His analysis considers the risk pooling properties of globalization, and then proceeds to consider the distributional effects of globalization. In this context, there is no particular reason for greater openness to trade to lead to a greater demand for protection as social insurance. The paper goes on to consider a number of deviations from the simple case in which protection might arise and then concludes with some useful suggestions for further work.

The next panel contained two papers on global public economics. *Bouwe Dijkstra* (with Anuj Mathew and Arijit Mukherjee), in “Environmental Regulation: An Incentive for Foreign Direct Investment”, examined the possibility that, in an international Cournot duopoly, the foreign might prefer higher environmental restrictions if the costs affect the home firm more negatively than own costs. *Ben Ferrett* (with Ian Wooton), in “Competing for a Duopoly: International Trade and Tax Competition”, extended previous work that had considered international tax competition with monopoly and symmetric oligopoly, to the case of an asymmetric oligopoly, where, contrary to the symmetric case, sufficiently large differences in size can produce clustering of investment.

Oliver Morrissey (with Charles Ackah) presented “Trade Protection as Income Protection in Poor Countries”. This paper contains two interesting pieces of empirical work: the first uses a panel of 44 developing countries to examine the relationship between protection and growth, and finds a nonlinear relationship such that protection is negatively associated with growth in middle-income developing countries but positively associated with growth in low-income developing countries; in the other the authors use household survey data for Ghana and find that the positive effect of protection is disproportionately greater for less



Participants at the conference

educated workers. These findings seem to suggest that liberalization may have negative consequences for the weakest members of society in very poor countries. *Jeff Stacey* presented “Creative Destruction? After the Crisis: Neoliberal ‘Remodeling’ in Emerging Financial Markets”. Stacey surveyed the political science and economic literature on financial reform to derive a number of hypotheses about the link between political and institutional variables and success in implementing neoliberal reforms. His findings were broadly consistent with the claim that good governance structures were positively associated with such success.

The final panel involved two papers on international trade agreements. *Wilfred Ethier*, “A Political Economy of International Trade Agreements”, drew on his earlier work on the political economy foundations of trade policy (both with respect to the Grossman-Helpman model of domestic foundation and the Bagwell-Staiger/terms-of-trade externality theory) to identify some fundamental problems and suggest some alternatives that avoid the problems identified. Finally, *Rorden Wilkinson*, “Language, Power, and the Breakdown of Multilateral Trade Negotiations”, presented a discourse theoretic analysis of the use of crisis language in framing trade negotiations (in public and among negotiators) and the biases that such language imparts to the negotiations.

Overall, the quality of the papers was high, as was the quality of the discussion. Relative to many such interdisciplinary conferences in the past, the willingness of all the participants to engage constructively with the work presented was impressive and heartening.



Shujie Yao

Can China Really Become the Next Superpower?

On March 2007 **Shujie Yao** presented his Inaugural Lecture at Nottingham. In this article Shujie offers a brief summary of this lecture. Shujie is a GEP Research Fellow. He is also Professor of Economics and Chinese Sustainable Development and the Head of the School of Contemporary Chinese Studies at the University of Nottingham. Shujie was recently ranked number 8 of all the China scholars in the world specialising in the study of the Chinese economy, in a recent article published in the *Journal of Asian Economic Literature*. This article focuses on the recent economic development of China and its future prospects.

This paper aims to answer the question of whether China can really become the next superpower, through assessing China's economic performance in the past three decades and evaluating the key constraints on China's future development. It presents a few possible scenarios to sketch how likely it is that China will become the next superpower towards the middle of the 21st century.

Introduction

China has been successful in the last three decades under economic reforms and openness. The economic miracle has been due to Deng Xiaoping's gradualism and pragmatism of economic reforms and social changes, the smooth transformation of a plan to a mixed plan-market economy and the shift of development strategy from close-door to openness.

China's fast growth has been accompanied with many difficult social, political and environmental problems. Rising inequality, persistence of absolute poverty, environmental degradation, corruption, and declining standards of traditional Chinese moral and social values are key constraints and challenges on China's further growth. China's future depends on its ability to solve these problems.

The most pessimistic scenario is that China is unable to face up to those challenges and

constraints, rendering the country vulnerable to polarisation, corruption and financial/material crises with little hope of becoming a real superpower. The most optimistic scenario is that China is able to maintain high economic growth, to reduce inequality and poverty, to improve the natural environment, and to overcome the potential problems of energy and material shortage. In this scenario, China will overtake Japan by 2017 and the US by 2037. China will also become a world leader of science and technology, possessing the world's most advanced space, nuclear, computer, biological, medical, energy and military technologies.

What constitutes a superpower

The US and the former USSR are two examples of superpower. The US has been the most powerful country in all aspects: the size of its economy, per capita gross domestic product (GDP), military strength, science and technologies, and international influence. The former USSR used to have huge military capability and influence over world order. It was the only country able to challenge the US before the end of the cold war. Its economic strength was by no means comparable to that of the US. The key question is whether there will be another superpower in the next few decades, and if so, which country? Russia, India, Japan or

Germany are unlikely to become the next superpower for various reasons. Hence, one likely candidate must be China.

However, even if China can become the world's largest economy, it does not mean that China will automatically become a superpower. There are some other conditions for China to be a real superpower. Such conditions should include the level of per capita income, social justice and income equality, the ability to become a world leader of science and technology, and the ability to influence regional and global peace and order.

China's rise and its significance in world economy

China's economic reform is the largest project in human history because it has affected a population 16 times that of the four Asian Tigers (South Korea, Taiwan, Singapore and Hong Kong) combined, and more than ten times that of Japan.

During 1978-2006, China achieved an average annual growth of 9.6% in real GDP. Two different ways are currently used to measure GDP: in nominal dollars using official exchange rates and in PPP dollars using the actual buying power of currencies. Measured in PPP dollars, China's GDP in 2006 was \$10.5 trillion, compared with \$12.9 trillion for the US, \$13.0 trillion for the EU, \$4.1 trillion for Japan, \$3.9 trillion for India, \$2.6 trillion for Germany and \$1.9 trillion for the UK. China is the third largest economic block after the EU and the US and the second largest economy after the US. PPP dollars tend to overstate the level of GDP for poor countries like China and India. Measured in nominal dollars, China was the fourth largest economy after the US, Japan, and Germany, with a total GDP of \$2.72 trillion (20.94 trillion RMB) in 2006. China will overtake Germany to become the third largest economy in 2007 or 2008.

In the last thirty years, China's real GDP increased 13 fold, real per capita GDP over nine fold, and real per capita consumption more than six fold. Many consumer goods and services that were virtually unknown in 1978 have become daily necessities in Chinese households today, including colour TVs, telephones, motor cycles and computers. In 1978, China ranked number 23 in world trade. By 2006, China was the third largest trading nation in both imports and exports, with a total trade volume of \$1.8 trillion, generating a surplus of \$177.8 billion. China had little foreign direct investment (FDI) before 1992 but has been competing with the US in recent years as the world's largest host of foreign capital.

China is the world's largest producer and consumer of many key industrial and agricultural products, including steel, cement, coal, fertilizers, colour TVs, cloth, cereals, meat, fish, vegetables, fruits, cotton and rapeseed. By 2006, China had constructed 3.48 million km of highways and 45,460 km of motorways, or five times the total length of motorways in the UK. China is currently constructing the same length of the entire UK motorway system in two years. In 1978, China had



Shanghai, China

only 598 universities recruiting 0.4 million students, by 2006, it had 1,800 universities recruiting over 5 million students and sending another 120,000 students abroad.

High and sustained economic growth has led to rapid industrialisation and urbanization. During 1978-2006, agriculture's share in national GDP declined from 28% to 11%, agricultural employment in national employment from 71% to 45%, rural population in national population from 82% to 57%.

Why China succeeds

China's economic miracle can be attributed to its institutional reforms, transforming the former plan system to a mixed plan and market system. The approach of reform is gradual, guided by Deng's theory of 'Touching Stones to Cross Rivers'. The reform was carefully managed with appropriate experimentation, accurate timing, correct sequence and manageable scale. Reforms started from agriculture and the countryside to the urban economy and state-owned enterprises, from the real economic sectors to the banking and other financial sectors, and from prices to the labour and capital markets, etc.

Adopting appropriate development strategies is another reason for China's success. Development strategies are shifted from import substitution to export-push and from close-door to openness and globalisation.

China's reforms have been guided by some important development theories unavailable from existing economics text books. One such theory is 'Spots to Lead Areas' development, which is featured with some growing centres propelling the growth in the surrounding areas and then

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remote regions through the transmission of growth momentum incubated in the growth centres. In the early 1980s, China established the special economic zones and open coastal cities to be the country's growth centres.

Another theory is 'Walking with Two Legs' development to improve China's capability of science, technology and innovation. China has relied heavily on foreign technologies through direct purchase or indirectly through FDI to improve productivity. It has also invested heavily to improve its ability in technological innovation and knowledge creation at home.

Constraints and challenges

Although China has made tremendous progress in the last thirty years, it is now faced with many challenges and constraints. The most important problems include high and rising inequality, corruption and persistency of poverty, environmental pollution, and over-dependency on non-renewable resources. All these problems could loom so large that China may become vulnerable to various crises. China's GDP is about 5% (14% in PPP terms) of the world total but it consumes more than one-third of the world outputs of coal, steel and cement. China's past pattern of industrial growth is unlikely to be sustainable in the future.

Rising inequality and corruption are two major social and political issues which can render China vulnerable to social and political unrest, causing unwanted disruption to its economic progress.

Current policies and possible scenarios

The government is aware of China's development constraints and challenges. Some policies have been implemented to resolve these problems through building a harmonious society and reducing income inequality. In agriculture, more land will be converted into forest and grass. Agricultural production will become more efficient and less dependent on chemical fertilisers and pesticides. More investments will be made in the rural areas to improve farm incomes and reduce urban-rural and inter-regional inequality. More effective measures are adopted to combat corruption and strengthen the leadership of the Communist Party. Huge investments have been planned for the next 30 years to greatly improve the country's human capital, research and innovation capability in the strategic areas of space, energy, environment, computer and internet, biology and medicine, military and defence, transportation and telecommunications, etc.

If the current policies are ineffective, China's growth can slow down, leading to higher unemployment and more poverty. In this scenario, the chance of China becoming a superpower will be small. If all policies are effectively implemented, China will be able to maintain high growth, to reduce inequality, poverty and corruption, to improve production efficiency and the environment. In this scenario, China will overtake Japan to become the second largest economy by 2017 and the US by 2037 to become another superpower. This prediction is based on the assumption that all countries continue to grow in the next 30 years following their own growth trends in the past three decades and GDP is measured in nominal dollars, not in PPP dollars. By 2037, China will also become a world leader of science and technology and have sufficient military and/or diplomatic capability to compete with the US for maintaining regional and global peace and order.

Further Readings

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Yao, Shujie and Kailei, Wei (2007), 'Economic Growth in the Present of FDI from a Newly Industrializing Economy's Perspective', *Journal of Comparative Economics*, 35(1), 211–234.

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