ISSUE 8 AUTUMN 2003

The University of Nottingham

newsletter

Leverhulme Centre for Research on Globalisation and Economic Policy

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Leverhulme Centre for Research on Globalisation and Economic Policy

CURRENCY UNIONS, TRADE AND THE EURO AREA

In recent years, there have been various articles claiming that countries participating in a currency union tend to trade among themselves considerably more than countries that do not. If the claims of these studies are valid, it could have important trade implications for the Euro area countries that share the same currency. **Bob Anderton** *takes a closer look at the claims regarding the trade impact of currency unions and the relevance of these results for the euro area. Bob is a Senior Economist at the European Central Bank, a Special Professor at the University of Nottingham and a Policy Associate in GEP.*

Various empirical works find that countries sharing the same currency tend to trade more with each other, implying that the creation of the euro might result in increased trade among the euro area countries. This may occur via two mechanisms: first, the elimination of exchange rate volatility may have a positive impact on trade; second, there might be a so-called "Rose effect" whereby sharing the same currency causes an increase in trade over and above the impact of eliminating exchange rate volatility. Such an increase in intra-euro area trade could itself increase euro area GDP growth via, for example, improvements in productivity and potential output arising through increased openness, or through technological spillovers induced by increased trade.

The catalyst for the above claims is the seminal study by Andrew Rose who found that countries participating in a currency union tend to trade among themselves, more than three times as much as countries who do not belong to a currency union. This hypothesized positive trade impact of simply belonging to a currency union has since become widely known as the 'Rose' effect. Many other studies have produced results in support of a 'Rose' effect. However, studies claiming such effects have been criticised on various grounds, particularly regarding their applicability to predicting the trade impact of EMU for the euro area countries. Indeed, in a later paper Rose himself warns against using his empirical findings to predict the trade impact of EMU, particularly as most of the countries within currency unions in his dataset are "small, poor, or both, unlike most of the euro area countries." Moreover, others highlight the wide

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Is European Tax Competition Such a Bad Thing?

It is commonly argued that the increasingly 'footloose' nature of firms leads to tax competition between countries undermining the tax base. This article, written by **Ian Wooton** *(University of Strathclyde), and based on the GEP working paper 'Regional Tax Competition and Foreign Direct Investment' with Andreas Haufler (University of Munich) 2003/43, questions this view. Ian is an External Research Fellow of GEP.*

It is frequently argued that the increasing international mobility of firms is a main reason for the significant fall in corporate tax rates worldwide. The more footloose the factor, the more easily it can avoid taxation by migrating to a tax haven. Consequently, greater corporate mobility intensifies the competition between jurisdictions in reducing taxes in order to attract foreign direct

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CURRENCY UNIONS, TRADE AND THE EURO AREA CONTD...

coverage of colonial countries in Rose's sample and argue that the currency dummy captures the *reduction* in trade arising from the abolition of a common currency, hence the results are not relevant for gauging the possible trade *creating* effect among EMU member countries.

Although the empirical literature generally agrees that the effect of currency unions on trade is positive, critics point to the fact that the estimated impact differs widely across the various papers, with no consistent estimate of the quantitative impact, combined in many cases with high standard errors for the parameter of the currency union dummy. In addition, the possible economic mechanisms underpinning the so-called "Rose-effect" are not well understood, while the number of years it might take for any currency union impact to occur also remains unclear. Nevertheless, the overwhelming evidence from the many studies strongly suggests that currency unions do increase trade between member countries, even if the magnitude of such an impact remains somewhat uncertain.

There are only a few studies which have empirically investigated the impact of the creation of the euro on euro area trade. However, some of these studies claim that EMU has already increased intra-euro area trade significantly since 1999. Another also provides some estimates of how long it might take for the trade impact of EMU to come through. They claim that the impact of the euro by the end of 2001 has been a rise of euro area trade by almost 10 per cent, while the longer run impact of the euro is estimated at almost a 40% increase in trade, with most of the longer run effect coming through after about twenty years.

Critics argue that there remain numerous caveats to the above estimated trade impacts of EMU. For example, some of the bilateral trade data used in some studies have been converted from values to volumes using proxies for the trade deflators. In addition, the magnitude of some of the above estimated trade impacts of EMU are comparable to estimates of the impact of the elimination of exchange rate volatility on euro area trade. Therefore, it is not always clear whether the above estimated effects of the euro are due to a "Rose" effect or simply due to the elimination of exchange rate volatility.

Meanwhile, an interesting development is that intra-euro area trade as a proportion of total trade has in fact fallen for most of the euro area countries both before and since 1999. However, this faster rise in extra- relative to intra-euro area trade might be largely explained by various factors, for example: strong growth/demand in the USA has significantly contributed to the rise in extra-euro area exports, while the continuing EU integration with the eastern European acceding countries has also boosted extra-euro area trade. At the same time, more and more of the new entrants in world trade are from emerging market economies which can itself stimulate extra-euro area trade as these countries are characterised by quite diverse comparative advantages in terms of natural resources and wage and skill levels. By contrast, the euro area represents a small number of fairly homogeneous countries whose economies are already highly integrated, where more limited differences in comparative advantage have already been exploited to a significant degree.

While the possible impact of common currencies on international trade flows has received considerable attention, there has been much less work on other possible effects of sharing a common currency. In particular, how might the creation of the euro affect trade pricing behaviour? For example, if the euro becomes an even more important invoicing currency for international transactions, this could have significant implications for, say, the pass-through of changes in the exchange rate of the euro to euro area import prices. In addition, the increased transparency of intra-euro area trade prices within the euro area after the creation of the euro may lead to greater price competition with respect to intra-euro area trade. Such an impact could bring down the price of intra-euro area imports relative to extra-euro area imports and, via substitution effects, boost intra-area trade. Another possible impact of the euro on the trade pricing mechanism is the relationship between the exchange rate volatility and integration in the goods market. It might be expected that temporary deviations from the law of one price are likely to be less rapidly corrected where exchange rates are more volatile, hence members of a monetary union should experience more rapid movements back to the law of one price. Empirical evidence on this point has shown that the speed at which temporary deviations from the law of one price are corrected was faster for intra-EU trade in comparison to non-EU trade, which is consistent with theoretical predictions. On the basis of these results, it could be argued that the formation of a monetary union should induce changes that tend to homogenise price movements among monetary union members via the import and export price channels. The implication is that EMU could produce changes in corporate strategies that result in faster cross-border transmission of price movements which, in turn, would tend to homogenise price movements across the euro area countries. Moreover, if there is also an increase in trade among the euro area countries in line with the so-called "Rose effect", the homogenising impact on prices would, of course, be even larger.

The views expressed in this article are the author's and do not necessarily correspond to those of the European Central Bank.

IS TAX COMPETITION A BAD THING CONTD...

investment (FDI). Indeed, statutory corporate tax rates have declined from an OECD average of almost 50 per cent in 1980 to roughly 35 percent in 2000.

In the European Union, these developments have led to an intense debate as to whether corporate taxation should be formally coordinated between member states. A recent constitutional convention of the EU showed clear majority support for minimum EU-wide corporate tax levels, though there is strong opposition from several of the lower-tax countries. An important constraint of this policy measure is, however, that EU members can only achieve a *regional* coordination of tax policies. In response to an intra-union coordination of tax rates, firms may leave the EU altogether and settle in third countries that remain independent in setting their tax rates.

Despite the wealth of literature on capital tax competition and tax harmonization, and despite the obvious policy relevance of the subject, there are only few theoretical contributions that deal with regional tax coordination in a multi-country world where only a subset of countries coordinate their tax policies. The existing theoretical literature argues that a regionally coordinated *increase* in the corporate tax rate is likely to bring welfare gains to a large economic union such as the EU, and therefore supports the proposed move to establish an EU-wide corporate income tax rate. The main purpose of our paper is to show that such a policy may well be counterproductive, in that the optimal coordinated tax policy may involve a *reduction* in corporate income taxes, rather than an increase.

We develop our argument in a model with three active countries, one of which is outside the region, a profit-making firm that is freely mobile internationally, and a positive spillover that FDI has on the host economy. The incentive to attract FDI arises from a desire to avoid trade costs. These are encountered in any international transaction but they are lower on trade within the union than between the union and the outside country. This fact gives a location rent to the firm if it settles in one of the union countries. The size of this rent depends on the relative trade costs for trade within and outside the union, and on the relative size of the three different markets.

In our analysis we consider unilateral and regional tax policy for a union of two countries that competes with a third potential-host country for the location of a monopolistic firm. In this setting, we show that regional tax coordination may lead to two types of welfare gain. In situations where the firm's location rent in the union is large, eliminating tax competition within the union allows an *increase* in the equilibrium tax, leading to a transfer of rents from the firm to the regional governments. This corresponds to results derived in the previous literature on regional tax coordination. However, in situations where the firm has no strong preference between locating within the union or in the outside country, a coordinated *reduction* in the tax offered to the firm will be able to attract the investment and leave the union with a collective welfare gain. In this latter case, regional integration overcomes a free-riding problem when both countries in the union benefit from the investment. Our results thus imply that the direction that a regionally coordinated tax change should take, from the perspective of the union, is fundamentally ambiguous. As a corollary, we also show that a minimum corporate tax rate in the union has potentially adverse effects on union welfare.

Inaugural Lecture

Professor Doug Nelson

Tulane University and GEP, University of Nottingham

'Political Economy Problems in Trade Policy'

Tuesday 4th November 2003, University of Nottingham

Details from sue.berry@nottingham.ac.uk

The World Economy Annual Lecture

Professor Anne Krueger

First Deputy Managing Director, International Monetary Fund

Thursday 9th September 2004

At the University of Nottingham

European Trade Study Group

Annual Conference 9-11 September 2004

will be hosted by the Leverhulme Centre for Research on

Globalisation and Economic Policy

and held at the

University of Nottingham

Further details at www.etsg.org

The University of Nottingham

The Role of Services in International Technology Transfer and Growth

Despite the increasing importance of the service sector in both employment and output and an improved understanding of technology transfer through international trade in the manufacturing sector, technology transfer in the service sector has generally been ignored. In this article **Xiaoying Li** *reports on evidence from a cross-country study on this point. Xiaoying is Research Fellow in GEP at the University of Nottingham*

With growing globalisation over the last decades, the role of trade in technology diffusion and economic growth has generated an extensive literature. While there is convincing evidence that technology diffusion through imports is an important determinant of economic growth, the existing studies tend to examine the impact of aggregate trade in both goods and services only, and ignore the possibility that trade in goods and services may have different effects.

The process of de-industrialisation, especially over the last decade, has raised awareness of the increasing dominance of the services sector in employment and output. There used to be concern that the slow rate of productivity growth in many service activities would have an increasingly negative impact on economic performance. In addition, trade in services was mostly ignored by international economists, reflecting a perception that services were non-tradable. However, it is now widely recognised that some services – particularly those related to finance and business – play a critical role in economic development. Moreover a large component of trade is in services and this raises the issue of the importance of internationalisation of services for productivity improvement and economic growth. Transportation and travel, for example, have always been important tradable economic activities. Services have been among the fastest growing components of world trade over the last decades, partly because new modes of supply have materialised, as in the case of services transmitted over electronic networks.

If imports of goods can affect economic growth, then there should be comparable gains from imports of services that account for a large and growing share of output in most countries and are becoming increasingly tradable. In fact, given that services sectors such as telecommunications, financial services, computer and information services are knowledge-intensive, international technology diffusion in these sectors could be stronger than that in manufacturing sectors.

In this study, we aim to fill in the gap in literature by comparing the respective impacts of imports of goods and services on economic growth in developed and developing countries. We apply a production function to estimate a dynamic "core" growth model. Our sample consists of 82 countries for the period 1990-1999 (for developed countries, we have data for 1985-1999). We construct three different specifications and look at the impacts of imports of services on growth in different country groups. The growth equation performs very well and most core variables in the model have the expected sign and are statistically significant. The most interesting finding is that imports of services have a significant positive effect on growth in developed countries, but an insignificant effect in developing countries. For developed countries, trade in services has a significant positive impact on growth and that in manufacturing has a negative impact although insignificant. For developing countries, trade in services has a negative impact on growth.

There are two possible reasons for the apparently different effects of trade in services on growth in rich and poor countries. Over recent years, services sectors have experienced a rapid expansion in developed countries. In 1998 for instance, services sectors accounted for 65 percent of employment and value added in the EU. By contrast, the status of services in most developing countries remains at a much lower level. In fact, there is a lack of awareness in many developing countries about the key role of services in development, and this leads to a lack of coherence in their policies and prevents the growth of services sectors. The low level of services sectors in developing countries may result in a higher initial learning cost and therefore lower level of benefits. Thus the extent to which services imports diffuse knowledge and technical know-how into the services sectors in developed countries is potentially greater than in developing countries.

"it is now widely recognised that some services – particularly those related to finance and business – play a critical role in economic development."

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SERVICES TECHNOLOGY TRANSFER AND GROWTH CONTD...

A second possible explanation lies in the nature of services trade flows. We might expect imports of business services, for example, to have a greater positive effect on growth than imports of tourism (i.e. expenditure of tourists in foreign countries). Unfortunately, due to data limitation, we can only partially test this argument. For developed countries, we can dis-aggregate services imports into three categories. We find that it is the category of other services, including business services, which has a significant positive effect on growth. Indeed, imports of transport and tourism have a negative effect on growth, usually significant. Unfortunately, the same dis-aggregate data set is not available for developing countries. We might expect that the industry patterns of services imports in developed and developing countries are different. Knowledge-intensive sectors account for a larger share of the services imports in developed countries than those in developing countries. If this is the case, the results may suggest that knowledge-intensive services sectors are more important in terms of international technology diffusion.

In this study, we tested a dynamic model of growth in the context of different country groups and, more importantly, different industries to confirm our main findings. Although we have obtained some interesting results here, there is still much space to improve the work. For example further work can be carried out on the impact of imports of services in developed countries, and in particular on specific services sectors such as finance, computing and information processing and telecommunications, which are expected to embody high technologies. Also, it would be very interesting to investigate the relationship between domestic production of services and imported services.

The evidence from this study may not be strong enough to justify specific policy measures, as more information on quantitative effects of trade at the industry level is required to determine which particular services a country should develop or import in order to significantly benefit from technology diffusion. However, it seems that other services, which include all the knowledge-intensive services, are more important than transportation and travel, and may be encouraged by both developed and developing countries.

GEP Annual Conference

25th-26th June 2004

To be held at the University of Nottingham

'The 100th Anniversary of Anti-Dumping Regulation'

Speakers include:

Bruce Blonigen, *University of Oregon*

Simon Evenett, *University of Oxford*

Rod Falvey, *University of Nottingham*

Joe Francois, *Erasmus University Rotterdam*

Doug Nelson, *Tulane University*

Gunnar Niels, *OXERA*

Tom Prusa, *Rutgers University*

Martin Richardson, *ANU*

Hylke Vandenbussche, *University of Leuven*

Maurizio Zanardi, *Tilburg University*

Leverhulme Globalisation Lectures

Adrian Wood

Chief Economist, Department for International Development

'Making Globalisation Work for the Poor'

20th October 2003

Paul Collier

Director, Centre for the Study of African Economies,
University of Oxford.
Formerly Director, Development Research Group, The World Bank

'Globalisation and Civil War'

18th November 2003

Both Lectures will be held at the University of Nottingham

No tickets required, all welcome

Efficiency Wages and Unemployment in a Global Economy

The explanation typically given for the observed rising unemployment levels in Europe, with full employment but rising wage inequalities in the US and UK has been one of differing labour market institutions. While popular, this story is impossible to reconcile with the standard trade theories. Here **Udo Kreickemeier***, in a summary of this recent GEP Working Paper 2003/33, considers how this might be done. Udo is a lecturer and an Internal Research Fellow of GEP at the University of Nottingham.*

In the recent research on the effects that "Globalisation shocks" had on the labour markets in industrialised countries, it has been common to emphasise the importance of labour market institutions. In particular, the divergent experience of the United States and the United Kingdom on the one hand and continental Europe on the other hand has been widely cited to support this claim. The argument runs as follows: in all industrialised countries, the increased trade volume with low-wage countries lead to a decrease in demand for low skilled workers. In the US and the UK, where factor prices are flexible, the consequence was a fall in the wages of low skilled workers both in absolute terms and relative to those of high skill workers, thereby preserving full employment. On the other hand, in continental Europe institutional factors prevented wages from falling, and hence the decrease in demand for unskilled labour translated into an increase in involuntary unemployment.

While popular, this story is impossible to reconcile with the standard trade theoretic framework that has been used widely in the globalisation debate, namely the Heckscher-Ohlin (HO) model. In this framework, free goods trade is sufficient to equalise wages between countries that have strictly national labour markets. Hence, for a given level of goods market integration between America and Europe it is impossible for the globalisation shock to lead to both constant wages in continental Europe and falling wages in the US and the UK.

This aspect of the HO model was emphasised by Donald Davis in a well known article that was published in 1998 in the *American Economic Review*. Davis assumes that one of the countries, which is called "Europe", has a binding minimum wage which generates unemployment while in "America" workers are fully employed at a market clearing wage. It turns out that in this model *all* prices in *both* countries are unaffected by economic shocks. This implies that the standard transmission mechanism of shocks between countries, namely induced changes in the terms of trade, is cut off. As a consequence, American workers are insulated from the globalisation shock. The full burden of adjustment is borne by the European labour market in the form of higher unemployment.

In contrast, we show how a globalisation shock of the type described above, as well as other economic shocks, affect European and American labour markets in a model that allows for flexible factor prices. Instead of assuming fixed wages, we assume that unemployment in Europe is due to efficiency wages. America is still characterised by flexible factor markets leading to full employment. As an important theoretical result, it is shown that despite internationally divergent labour market institutions, equalised factor prices are a non-trivial possibility in the present model. As Davis (1998), we focus on this case, thereby making the effect of switching to a model with variable prices more transparent.

> *"While popular, this story is impossible to reconcile with the standard trade theoretic framework"*

One key finding is that the entry of low-wage countries into world trade is now harmful for unskilled workers in both Europe and America. The effects are asymmetric though: while all unskilled workers suffer a decline in wages, in addition Europe experiences an increase in the rate of unemployment. Importantly therefore, allowing for prices to adjust to the globalisation shock implies that the "insulation result" for the American workers does no longer hold.

The asymmetric two-country model can be used to analyse other economic shocks as well. We show that labour accumulation in either country decreases wage rates in both countries and increases unemployment in Europe. The magnitude of changes in all variables depends on where the labour accumulation occurs. The effects in both countries are more pronounced if the labour accumulation occurs in America rather than Europe. In contrast, skill accumulation in either country benefits labour in both countries, and the magnitude of the effects is independent from where the skill accumulation occurs.

A further contribution of the paper is to show the general validity of a point that has been made by Davis for the minimum wage model. Namely, for all economic shocks considered it is true that with integrated goods markets the labour market outcomes in either country are determined by labour market institutions in both.

Visitors to GEP 2003/4

March 2003	April 2003	May 2003
Professor Carl Davidson *Michigan State University* Professor Todd Sandler *University of Southern California*	Dr Joakim Gullstrand *Lund University*	Bob Anderton *European Central Bank* Professor Steven Matusz *Michigan State University* Dr Catia Montagna *University of Dundee* Professor Wolfgang Keller *University of Texas & Brown University*
June 2003	**October 2003**	**November 2003**
Professor Richard Freeman *Harvard University* Dr Mark Melatos *University of Sydney*	Professor Marc Melitz *Harvard University* Dr Joakim Gullstrand *Lund University*	Professor Kala Krishna *Penn State University*
March 2004	**April 2004**	**May 2004**
Professor Carl Davidson *Michigan State University* Professor Ray Riezman *University of Iowa*	Professor Marius Brülhart *University of Lusanne* Professor Jonathan Eaton *New York University*	Dr Sébastien Jean *CEPII, Paris* Professor Steven Matusz *Michigan State University* Professor Arvind Panagariya *Columbia University* Beata Smarzynska *The World Bank*

How to Serve Foreign Markets: Exports or FDI?

A stylised feature of markets is the co-existence of firms that serve just the domestic market with firms that serve domestic and foreign markets (either by exporting or becoming multinational). This is consistent with a model in which firms have different productivity levels. Here **Mauro Pisu**, *in a summary of the recent GEP Working Paper (2003/21) presents an empirical test of such a model. Mauro is a Research Fellow in GEP at the University of Nottingham.*

A stylised characteristic of markets is that firms are heterogeneous. On the one hand they have different productivity levels, and on the other they may or may not be involved in the sale of goods in international markets, where this international commerce may take place through exporting or using overseas production (FDI).

"Traditional" international trade theories, which rely on the representative firm framework are unable to describe these two phenomena. The models yield knife-edge solutions, where all firms in the industry or country are either involved in international commerce or not and if involved all firms export or undertake FDI.

Recently a new class of industrial organisation and international trade models has been formulated with the intention of bridging this gap. These models depart from the representative firm framework to consider firms with heterogeneous firm characteristics, such as productivity levels. For example the model developed by Helpman, Melitz and Yeaple predicts that the productivity level of the firm and their participation in the international trade are related. The least productive firms will sell in the domestic market only; firms having somewhat higher productivity will serve the home market and foreign market through exporting, and the most productive firms will serve foreign markets through overseas production facilities. This relationship between productivity and markets is usefully summarised in Figure 1, which shows from where in the productivity distribution firms make different choices.

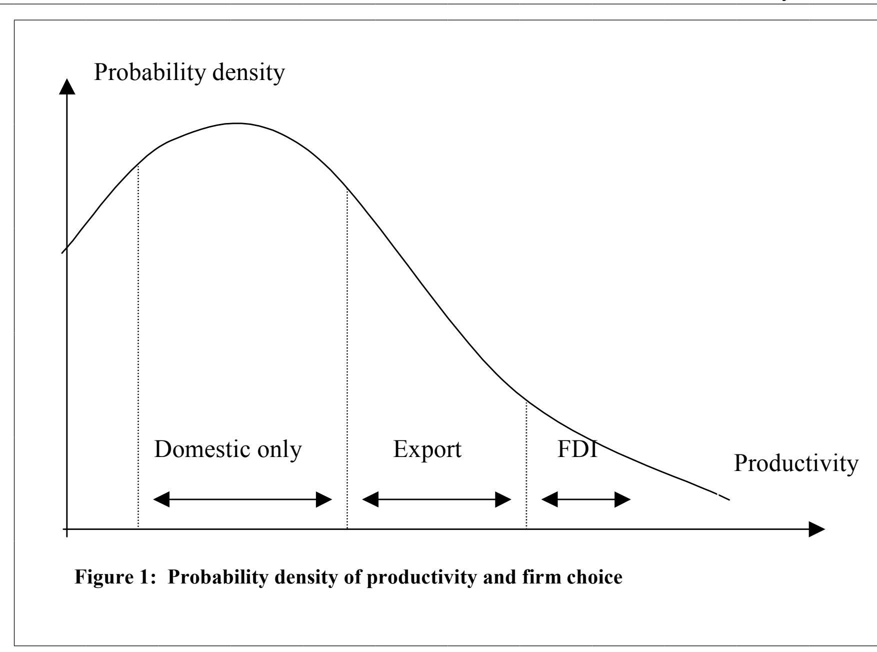

Figure 1: Probability density of productivity and firm choice

One weakness of the Helpman, Melitz and Yeaple model is however the deterministic nature of the relationship between productivity and international trade participation. According to Figure 1 the multinational enterprise with the lowest productivity level *must* be more productive than the exporter with the highest productivity level. Similarly, the least productive exporter *must* have higher productivity than the most productive firm selling in the domestic market only. If true the model could be tested simply comparing the productivity levels of these marginal firms.

In reality the relationship between productivity and international trade is likely to be more complex. Firms with the same or similar productivity levels might make different choices about whether to sell to the domestic and foreign market. Uncertainty surrounding the parameters of the model (such as the fixed cost of entering export markets or undertaking FDI) and differing degrees of risk aversion of the management of firms might yield such effects. A more complex depiction of the productivity-participation relationship is described in Figure 2. Here firms that lie in the uncertainty regions make different choices despite their similar productivity.

The question is what empirical methodology is appropri-

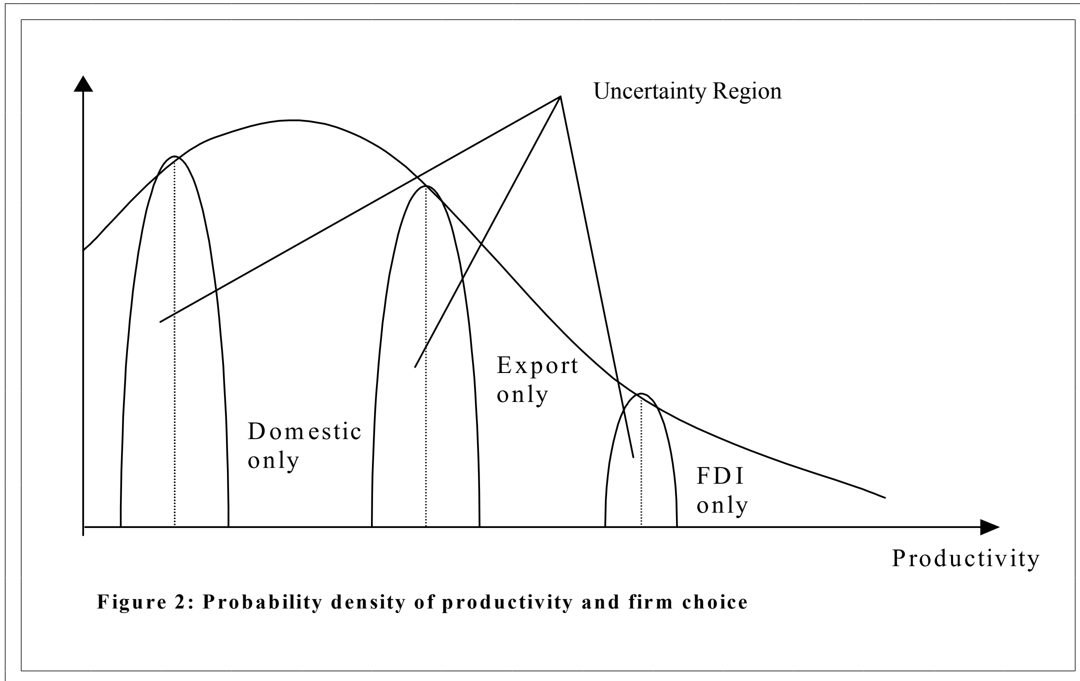

Figure 2: Probability density of productivity and firm choice

ate to test this model. On choice is a non-parametric test of the cumulative productivity distributions such as the Kolmogorov-Smirnov test. This tests whether one distribution stochastically dominates another, where stochastic dominance implies that the cumulative distribution of one set of firms lies to the right of another.

The test was conducted using data on UK manufacturing firms from 1990 to 1996. A clear ordering of the productivity distributions according to the type of commerce was indeed uncovered. The productivity distribution of multinational firms was found to dominate that of exporters, which in turn dominated that of non-exporters. The same ordering of firms is also found to exist when we replace domestic multinational firms with foreign multinational firms.

Evidence was also established to suggest these differences are persistent over time. There were no significant differences in the distribution of productivity growth rates.

Finally we investigate whether firms changing states, for example from being exporter to being MNE (through brownfield FDI), are different from other firms in the pre-change period. It appears they are not.

This investigation corroborates the theoretical prediction of the heterogeneous firms of Helpman, Melitz and Yeaple where the productivity level of firms determines their involvement in export and FDI activities. Only the most productive companies find profitable to pay the higher costs associated to export and to build/acquire production facilities abroad. As amore general conclusion, this research provides a clear acceptance of the heterogeneous firm framework over alternatives such as those using the idea of a representative firm

Leverhulme Globalisation Lectures 2004

Martin Wolf

Associate Editor and Chief Economics Commentator, *The Financial Times*

19th February 2004

Preferences and Reciprocity: New Issues in EU-ACP Bilateral Trade Relations

The successful challenge to the WTO by the US regarding the preferential trading arrangements given to African Caribbean and Pacific (ACP) Countries by the EU has meant that these arrangements must change. Here **Chris Milner** *considers the implications of the various choices open to the ACP countries. Chris Milner is Professor of International Economics and an Internal Research Fellow of GEP at the University of Nottingham.*

Background

For a quarter of a century African, Caribbean and Pacific (ACP) countries have received preferential access for their exports to the European Union (EU) market under a succession of Lomé Arrangements but have not been required to offer reciprocal preferential access for the EU to their own markets. But that is to change following the successful challenge by the US to the WTO that the Lomé Convention conferred an unfair trading advantage to ACP countries over other WTO Members. The European Commission has been in negotiations with ACP countries since 1996 about the post-Lomé environment. These discussions confront ACP countries with a 'diabolical trilemma': maintain the status quo (which would have been unacceptable to WTO); accept a straightforward removal of preferences; or accept reciprocal trading arrangements. The Contonou Agreement, which came into force in June 2000, extended the period for unreciprocated preferences and obliged ACP countries to begin negotiations on so called 'Regional Economic Partnership Agreements' (REPAs) no later than 2002 (for implementation in 2008). Negotiations on REPAs are (formally at least) underway with a number of groups of developing countries clustered on a geographic basis, though the final configuration of negotiating groupings has not actually been finalised. The REPA is a new form of bilateral trading arrangement for both the EU and ACP countries, one which is being investigated by GEP and other researchers in the School of Economics in a series of studies on different ACP countries.

Table 1 Import Effects[1] of Reciprocity with EU

	(a) Change in imports from		(c) Total Increase in Imports from EU	(d) Increase in imports from all sources
	Region	Non-EU ROW		
	%	%	%	%
Barbados	-21.0	-45.5	217.8	2.6
Belize	-25.8	-48.2	471.7	1.5
Dominica	-25.6	-52.2	259.3	2.4
Grenada	-25.1	-54.3	283.6	2.2
Jamaica	-28.9	-56.9	508.1	1.6
Kitts&Nevis	-23.6	-54.2	376.6	1.8
St. Lucia	-26.0	-54.9	269.2	2.4
Trinidad	-24.4	-39.9	215.8	2.0
St. Vincent	-26.0	-48.4	167.1	3.1

(b) is the Non-EU ROW column.

[1] based on 1998 trade values, except for 1997 in the case of Dominica and St Kitts and Nevis

Source: adapted from Greenaway and Milner (2003, GEP Research Paper 03/30)

Key issues

A key feature of a REPA is that preferential access to EU markets would be mirrored by preferential access to ACP markets for EU exporters. As with all cases of discriminatory liberalisation the prospect of this raises an obvious question from an ACP standpoint: would this

freeing of imports from this specific source leave them better off? The question is however more complicated than for the case of the standard analysis of discriminatory trade liberalisation, the type we might apply to a proposal for a free trade area or customs union. This is because most of the ACP countries are already members of some regional trading arrangement (RTA) which provides for preferential treatment of imports from the region, and which has increased regional trade by some mixture of trade creation (additional regional trade specialisation) and trade diversion (displacement of non-regional suppliers by regional ones). A REPA combined with an existing RTA will tend therefore to generate new patterns of trade creation and diversion. Understanding the resource and welfare effects of these trade changes is more complicated than in the case of an RTA nly or a REPA only.

In order to understand the net benefits

of a REPA for ACP countries, these countries need to be able to evaluate the benefits of continued preferential access to the EU alongside the effects of introducing of reciprocity in ACP-EU trade relations

Implications of reciprocity

Trade between CARICOM's members has grown substantially as a result of measures (including tariff and non-tariff liberalisation) to promote regional integration. The liberalisation of CARICOM's imports from the EU would significantly alter the pattern of its members' trade with other members and with trading partners outside of the region. The potential scale of adjustment to import patterns is illustrated in table 1. The fall in the relative price of EU imports would cause a shift away from regional and other extra-regional supplies, with each of the CARICOM members reducing their imports from other CARICOM countries by over 20% and from the non-EU rest of the world (ROW) by at least 40%. This switching to EU suppliers, combined with increased consumption of imports already sourced from the EU, would increase total imports from the EU dramatically – by up to 508% in the case of Jamaica! Besides the local adjustments in production and employment that would go with this bilateral liberalisation, the changes in import levels and sources would have important tax revenue and welfare implications. The diversion of trade away from extra-regional suppliers would be welfare-lowering for traditional reasons, since it would involve the displacement of more efficient production. But interestingly the diversion away from regional suppliers would be welfare-raising since it would involve displacement of less efficient producers. The net welfare effect of a REPA is therefore ambiguous, although the revenue effects are unambiguous. Customs duties collected must fall as imports from the duty free source (EU) rise sharply. As table 2 shows, the direct effect of a full REPA would be falls of customs revenue ranging from over 65% to 78% (Barbados). Clearly this revenue may be replaced by alternative indirect taxes, but would probably require significant reform of tax structures and administration. Table 2 also shows that for all CARICOM members net welfare (relative to GDP) would be lowered by a full REPA (by up to 4.5% in the case of Jamaica).

Table 2 Percentage Changes in Customs Revenue and Welfare

	EU reciprocity (% change)		EU & US reciprocity (% change)		Multilaterally liberalise (% change)	
	Welfare/ GDP	Customs revenue	Welfare/ GDP	Customs revenue	Welfare/ GDP	Customs revenue
Barbados	-2.2	-78.1	-1.1	-92.6	+0.5	-100.0
Belize	-2.7	-68.0	-0.8	-85.6	+0.5	-100.0
Dominica	-2.7	-75.1	-0.8	-93.0	+0.5	-100.0
Grenada	-2.7	-74.4	-1.0	-93.4	+0.5	-100.0
Jamaica	-4.5	-76.7	-1.0	-91.8	+0.8	-100.0
Kitts&Nevis	-2.5	-73.0	-0.7	-90.9	+0.4	-100.0
St. Lucia	-2.7	-76.8	-0.8	-91.1	+0.4	-100.0
Trinidad	-1.9	-61.8	-1.1	-81.7	+0.3	-100.0
St. Vincent	-2.0	-72.0	-0.4	-94.3	+0.4	-100.0

Source: adapted from Greenaway and Milner (2003, GEP Research Paper 03/30)

It is expected that the EU would be willing to provide support to allow ACP countries to develop their supply capacity and ease adjustment pressures. Similarly some sensitive sectors may be excluded from an agreement or there may be phasing in of the liberalisation. It is, however, important that ACP countries explore alternative or complementary trade policy options. As table 2 also shows, broadening the principle of reciprocal import liberalisation would reduce the net welfare losses. Negotiating a similar arrangement with the US as well as the EU, for example, would reduce costly source substitution effects. Lowering CARICOM's external tariffs to all non-preferential sources would have a similar effect. Indeed, as table 2 shows, full multilateral liberalisation alters the sign on the net welfare effects, though the loss of tariff revenue naturally is complete in this case.

It might be tempting to conclude from this evidence that ACP groupings like CARICOM should opt for the alternative policy options. Of course their dilemma is that rejecting reciprocity may mean the loss of full preferences to the EU for their exports. Some, albeit lower, preference might be obtained from alternative provisions (e.g. the EU's G.S.P), and some (e.g. low income) countries might be eligible for specific new provisions (e.g. the Everything But Arms (EBA) arrangements for Africa). It is however the case that the benefits of preferences will be eroded as the EU's non-preferential tariffs decline and as the EU negotiates more bilateral trade arrangements with countries outside of the ACP (e.g. with Mexico). But for countries anxious to promote exports it would not be easy to opt to lose preferential access to the large EU market. In which case it is important that the benefits of complementary trade reforms are recognised, and that wider reciprocity and general liberalisation are used to reduce the costs of adopting narrow reciprocity with the EU only.

The EU-Med partnership, the textile industry, and rules of origin

Traditionally trade agreements between EU and the Southern Mediterranean Countries have been bilateral. These bilateral agreements have potentially distorting effects on trade between pairs of Southern Med. Countries when the traded product relies on imported intermediate goods, such that the origin of the good produced is under question. The EU has recently invited the Southern Med. Countries to join the Pan-European system of cumulation of rules of origin to prevent these distorting effect. This article by **Michael Gasiorek** *fills an empirical gap in the literature and attempts to quantify the distorting effects of rules of origin on trade flows. This article is based on a paper presented as part of the Autumn 2003 GEP Seminar Series. The full paper can be found on the Leverhulme Centre website. Michael is a Lecturer at the University of Sussex.*

Since the Barcelona Declaration of 1995, the EU has been pursuing an active policy of trade liberalisation with the countries of the Southern Mediterranean. The twelve countries which form part of this Euro-Med partnership are: Algeria, Cyprus, Egypt, Jordan, Israel, Lebanon, Malta, Morocco, the Palestinian Authority, Syria, Tunisia and Turkey. The objective of this process is to facilitate the economic development of the Mediterranean countries by encouraging the development of competitive market economies, regional integration and cooperation between the Euro-Med countries. This principally involves the signing of Association Agreements which tend to focus on bilateral trade liberalisation through the reduction of tariffs.

All preferential trading arrangments (PTA) have detailed protocols on rules of origin, which are needed in order to determine the geographic origin of goods and thus the appropriate level of customs duty. In particular where a final good is exported from within the PTA it is important to establish the level and source of the intermediates used. Under the current arrangements the EU has a PTA with Morocco, and also with Tunisia. Goods exported from Morocco and deemed as 'originating' in Morocco can enter the EU market duty free; and similarly goods exported from Tunisia and deemed as 'originating' in Tunisia can enter the EU duty free. However, if Morocco imports an intermediate from Tunisia which is used in the production of a final good exported to the EU, the Tunisian intermediate inputs do not count towards the granting of Moroccan origin. Only intermediates which come from either Morocco itself or from the EU can be counted as originating. The EU has now offered the Southern Mediterranean countries the possibility of joining the Pan-European system of cumulation of rules of origin. This system allows for the (diagonal) cumulation of the use of intermediate inputs. Adopting the pan-European system means that Morocco could include the Tunisian intermediates in determining originating status, and Tunisia could include the value of Moroccan intermediates. Such diagonal cumulation is only possible if the participating countries sign free trade agreements among themselves and adopt identical rules of origin. Thus where a series of FTAs could result in a hub-and-spoke pattern with the EU, diagonal cumulation in principle establishes a much broader multilateral free trade area.

> *"As with the aggregate gravity model the results suggest that trade is significantly lower between countries where cumulation is not allowed for"*

There is a small theoretical literature on rules of origin (ROOs) which shows that they can serve to restrict/ suppress trade between countries, or to divert trade away from more efficient to less efficient suppliers. On the face of it this is perhaps surprising since rules of origin are typically formulated in the context of a process of trade liberalisation. However, it arises because rules of origin focus on the geographical sourcing of intermediate inputs by firms. Depending on how the rules are then formulated flexibility in the sourcing of intermediates from the cheapest suppliers may be restricted. The empirical work on the impact of ROOs on patterns of trade is virtually non-existent. The aim of our research and this paper is to focus directly on the impact of ROOs. We do this by comparing trade flows between countries who have FTAs with the EU together with diagonal cumulation (ie the Pan-European system), and those that have FTAs but without cumulation. If ROOs do indeed impact upon patterns of trade one would expect those flows to be higher between countries where diagonal cumulation is allowed, than between those where such cumulation is not allowed.

By looking at trade between the EU and the other countries who are part of the Pan-European system (EFTA, CEFTA and the Baltic states), we offer some time series evidence which suggests that there is indeed a prima-facie case for lack of cumulation impacting upon trade flows. We then turn to a more formal

empirical analysis, where the procedure we adopt is that of gravity modelling.

A typical aggregate gravity model assumes that trade between a pair of countries is a function of each country's GDP, population, and the costs of trade between the countries (eg. distance, tariffs). To these variables are often added further (dummy) variables in order to capture eg. institutional arrangements between countries such as preferential trading agreements. Research by Augier, Gasiorek & Lai-Tong estimated an aggregated gravity model where we explored the impact of the lack of cumultion for total, manufacturing, and intermediate trade. The results suggest that in 1999 trade is between 49%-52% lower where there is no cumulation, with the largest impact (52%) on intermediates trade. We also showed that there the lack of cumulation is more important where tariffs are lower, but that where tariffs are high it would appear to be the tariffs that are restricting trade between countries as opposed to the lack of cumulation.

In a second study by Augier, Gasiorek & Lai-Tong, we estimated a sectoral gravity model which was applied to the textile industry. The equation underlying the sectoral gravity model was theoretically derived, and suggests that in a sector bilateral trade flows can be explained by production levels in the exporting country, consumption levels in the importing country, trade costs (tariffs, distance), and the price of the imported good, relative to the prices of competing goods from all other sources. The model was applied to the textile industry for two reasons. First, because the textile sector is an important sector in terms of share of value added or employment in many of the Southern Mediterranean countries; and secondly because it is a sector which is frequently cited as having 'restrictive' ROOs. As with the aggregate gravity model the results suggest that trade is significantly lower between countries where cumulation is not allowed for. Taking all countries together the results suggest that trade is 73% lower in 1995, and 81% lower in 1995. We also disaggregate the impact of the lack of cumulation by Southern Mediterranean country. Here we show that lack of cumulation seems to matter most for Tunisia and Turkey where these countries trade with non-cumulating countries was up to 94% lower for the former, and up to 85% lower for the latter.

This work addresses an issue which is proving of increasing concern - the way in which rules of origin and lack of cumulation of such rules can serve to distort patterns of trade and production. The significance of our work is twofold. First, we provide empirical evidence which suggests that ROOs do indeed appear to seriously impact upon trade flows, and secondly we have developed a framework for estimating the determinants of bilateral trade at the sectoral level which is then applied to considering the impact of ROOs in the textile industry.

Call for Papers

3rd Annual Postgraduate Conference

31st March 2004, University of Nottingham

The Conference is intended to provide a forum for the dissemination of student research relation to issues of Globalisation and Economic Policy from both theoretical and empirical perspectives. These areas include Foreign Direct Investment, Trade, Productivity, Migration and Labour Market Adjustment.

The objective of the Conference is to bring together a number of Ph.D. students to discuss their own research ideas with established researchers in a relaxed and open atmosphere. The Conference is open to graduate students engaged in the preparation of a doctoral dissertation or approaching this stage. Speakers will be selected on the basis of submitted abstracts. Deadline for submissions 31st January 2004.

Details of the previous GEP Post-Graduate Conferences and for more information on the 2004 Conference can be found on the Leverhulme Centre Website or contact sara.maioli@nottingham.ac.uk or daniel.mirza@nottingham.ac.uk

Conference on Exporting and Firm Level Adjustment: A Summary

By Richard Kneller

In October *GEP* held its second one-day conference on the issue of firm level responses to international trade, at the University of Nottingham. The conference brought together leading researchers from the UK, Europe and the US, while in attendance were a mixture of academics and policy makers. The conference was organised into two parts: the first half dealt with theoretical aspects of exporting and firm choice and the second dealt with the empirical aspects. The consistent thread running through both parts was the idea that firms make very different choices when faced with identical market conditions. These differences in choice being explained by heterogeneity in the underlying characteristics of firms, for example their level of productivity.

This message was most clear in the theoretical section of the conference. One stylised feature of markets as discussed by Jörn Kleinert (Institut für Weltwirtschaft, Keil) was the coexistence of firms that served just the domestic market with firms that serve both domestic and foreign markets (in a paper titled *'On the coexistence of national companies and multinational enterprises'*). If the market conditions faced by firms are identical why do only some of these firms choose to become multinational? Using a representative firm model framework (based on an assumption that all firms are identical) Jörn demonstrated that the coexistence of multinationals with non-multinationals was possible only if firms differ in their underlying characteristics, firms are heterogeneous. In accordance with existing empirical evidence one conclusion of the paper was that only the best firms become multinationals.

> *"firms make very different choices when faced with identical market conditions"*

Consistent with the view that differences across firms are important , Mark Melitz (Harvard University) *'Market, size trade and productivity'* and Zhihong Yu (University of Nottingham) *'Efficiency differentials and intra-industry trade'* both based their model on an assumption firms were heterogeneous. To this additional elements of heterogeneity were added, namely differences in the characteristics of countries domestic firms trade with. In Mark Melitz's paper countries differed in their size, whereas in Zhihong Yu's paper countries differed in the efficiency with which they use technology. In Melitz's paper larger markets are more competitive, the firms within them are more productive and sell at lower prices. This serves to improve the welfare of consumers in these markets relative to those in smaller markets. The effect of trade liberalisation on these features are then considered. Yu also considers trade liberalisation in his paper. He finds that trade raises productivity, exporting and the probability of firm death in both countries, the effects being strongest in the more efficient country.

Three empirical papers were given. Richard Kneller (University of Nottingham) presented *'Exporting, Productivity and Agglomeration'*; Pär Hansson (FIEF, Stockholm) presented *'Exports as an indicator on or promoter of successful Swedish manufacturing firms in the 1990's'* and; Joachim Wagner (University of Lueneberg) presented *'The micro-structure of the German export boom: Evidence establishment panel data 1995-2002'*. Some of the questions the empirical papers set out to explain were similar across studies. For example, all of the papers found that in each of the three European countries considered export firms were on average larger and more productive than non-export firms. This result is consistent with the sort of theoretical papers presented earlier in the day. Kneller and Hansson also sought to explain whether entry into export markets brought any additional benefits to the firm. Both found evidence to suggest that there were, albeit using different approaches. Of the different questions investigated, Kneller sought to discover why some firms chose to enter export markets and why some firms chose to exit at a point in the future. In addition to a number of firm level characteristics evidence was found that new entrants benefit from the existence of other export firms in the same industry and region as the firm. Size and output shocks were both important determinants of exit. Finally, Wagner sought explanations for the export boom in Germany in the 1990's. He found that there were few consistent patterns in the export behaviour of firms over this period and that much of the explanation was the expansion of export sales by a small number of large firms. He concluded heterogeneity was an important feature of firm behaviour in export markets.

Further details on the conference and the papers presented can be downloaded from the Leverhulme Centre Website.

GEP Seminar Series

Autumn 2003

Date	Speaker
22 September	Richard Kneller (GEP, Nottingham)
29 September	Michael Gasiorek (Sussex)
6 October	No seminar due to Exports Conference
13 October	Tony Venables (LSE)
20 October	Toby Kendall (Birmingham)
27 October	Paola Conconi (Warwick)
3 November	Mike Devereux (Warwick)
10 November	Peter Neary (UCD)
17 November	Kala Krishna (Penn State)
24 November	Robert Read (Lancaster)
1 December	Marta Aloi (GEP, Nottingham)
8 December	Rob Elliott (Birmingham)

For more information on the GEP Seminar Series and to download the papers see the Leverhulme GEP website: www.nottingham.ac.uk/economics/leverhulme

To participate in the series, contact Ben Ferrett, 0115 846 7347 or

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New GEP Research Papers

http://www.nottingham.ac.uk/economics/leverhulme/research_papers/

2003/37	Arijit Mukherjee and Soma Mukherjee	Foreign market entry: a theoretical analysis
2003/36	Udo Kreickemeier	The Le Châtelier Principle in the Theory of International Trade
2003/35	Udo Kreickemeier	Unemployment and the Welfare Effects of Trade Policy
2003/34	Mariam Camarero and Cecilio Tamarit	Estimating the export and import demand for manufactured goods: The role of FDI
2003/33	Udo Kreickemeier	Efficiency Wages and Unemployment in a Global Economy
2003/32	Sourafel Girma, Michael Henry, Richard Kneller and Chris Milner	Threshold and Interaction Effects in the Openness-Productivity Growth Relationship: The Role of Institutions
2003/31	Hassan Molana and Catia Montagna	Welfare State, Market Imperfections and International Trade
2003/30	David Greenaway and Chris Milner	A Grim REPA?
2003/29	Rod Falvey	Endogenous Mergers and Tariffs in an Integrated Market
2003/28	Sourafel Girma, Holger Görg and Eric Strobl	Government grants, plant survival and employment growth: A micro-econometric analysis
2003/27	Gerda Dewit, Holger Görg and Catia Montagna	Should I stay or should I go? A note on employment protection, domestic anchorage and FDI
2003/26	David Greenaway, Joakim Gullstrand and Richard Kneller	Exporting May Not Always Boost Firm Level Productivity
2003/25	Zhihao Yu	A New Push on an Old Fundamental: Understanding the Patterns of Outsourcing
2003/24	Holger Gorg and Frederic Warzynski	Price cost margins and exporting behaviour: Evidence from firm level data
2003/23	Zhihao Yu	IT, Production Specialization and Division of Labor: A Smith-Ricardo Model of International Trade
2003/22	Sourafel Girma, Richard Kneller and Mauro Pisu	Do Exporters Have Anything to Learn from Foreign Multinationals?
2003/21	Sourafel Girma, Richard Kneller and Mauro Pisu	Exports versus FDI: An Empirical Test
2003/20	Holger Görg and Aoife Hanley	International outsourcing and productivity: Evidence from plant level data
2003/19	Zhihao Yu	Why Take on the Tobacco Industry: the Political Economy of Government Anti-smoking Campaign
2003/18	Paul A. de Hek and Arijit Mukherjee	On Foreign Market Entry Under Uncertainty
2003/17	Alexander Hijzen	Fragmentation, Productivity and Relative Wages in the UK: A Mandated Wage Approach
2003/16	Wilhelm Kohler	Factor price frontiers with international fragmentation of multistage production
2003/15	Joseph Francois and Douglas Nelson	Globalization and relative wages: Some theory and evidence

2003/14	Richard Kneller and Philip A. Stevens	Absorptive Capacity and Frontier Technology: Evidence from OECD Manufacturing Industries
2003/13	Todd Sandler	Collective Action and Transnational Terrorism
2003/12	Patricia S. Pollard and Cletus C. Coughlin	Pass-Through Estimates and the Choice of an Exchange Rate Index
2003/11	Marius Brülhart and Rolf Traeger	An Account of Geographic Concentration Patterns in Europe
2003/10	P.K.M. Tharakan and I. Van Beveren	Exports and Distance in a Digitized World: Gravity Model Applied to the Indian Exports of Software
2003/09	Ismael Sanz and Francisco J. Velázquez	Has European integration approximated the composition of government expenditures?

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for Research on Globalisation and Economic Policy

The Leverhulme Centre for Research on Globalisation and Economic Policy was established in the School of Economics in 2001. It subsumes the research programmes and activities of the former *Centre for Research on Globalisation and Labour Markets*. The Centre's funding derives from two programme grants to the value of over £3m awarded by the Leverhulme Trust. Researchers in GEP have also received funding from the ESRC, European Union and British Academy. The Centre is under the Directorship of Professor David Greenaway.

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1. Globalisation and Labour Markets (GLM)
2. The Internationalisation of Economic Policy (IEP)
3. Globalisation, Productivity and Technology (GPT)

The Centre supports both basic scientific and policy-focused research. Its core staff comprises a group of Research Fellows based at Nottingham, a network of External Fellows from a number of Universities in Western Europe, North America and Australia and a Forum of Policy Associates based in the policy-making community. GEP publishes its own Research Paper Series, sponsors regular workshop programmes and conferences and supports a range of other outreach activities. Full information and a range of resources can be accessed on the Centre's website.

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There is also a website containing more information and a complete set of downloadable research papers:

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