

Export Promotion Programs– What Should Be the Objective?

ABSTRACT

Export promotion programs (EPP's) are commonly used, especially in developed economies, to enhance national export performance. However, the specific goals of such schemes are often unclear and assessment of effectiveness is difficult. This paper discusses EPP objectives as presented in the literature and highlights the difficulty in assessing outcomes. We use network analysis to demonstrate the ability of countries to improve their position in the global trade system and by so doing to improve national economic welfare. This insight presents an alternative goal available to governments in developing national EPP's, namely, targeting an increased number of international trade connections which their country.

Keywords: Export promotion programs, export policy, network analysis, international marketing

INTRODUCTION

Many, if not most, governments around the world support export promotion programs (EPP's) for their nation's firms (Ahmed, Mohamed, Johnson & Meng, 2002). EPP's "refer to all public policy measures that actually or potentially enhance exporting activity either from a firm, industry or national perspective." (Serinhaus, 1986, p.55). They are intended to improve the overall performance of the nation's export sector through improved export performance of the nation's firms (Ahmed *et al.*, 2002). Increased national exports will in turn provide substantial benefits through additional employment opportunities, more foreign exchange, economies of scale and associated

dynamic effects such as the transfer of technology and management knowledge from export destinations. Indeed, “it is generally accepted in practitioner circles that exporting is viewed as an important way of achieving the economic goals of businesses and government” (Wilkinson, Keillor & d'Amico, 2005, p.95). For these reasons, governments that fully fund or partially subsidise EPP's usually argue that benefits to be derived from these export advantages are worth the cost borne by taxpayers.

Many different types of export promotion activity are offered by agencies. These include, but are not limited to, organising trade exhibitions in overseas countries and at home, either as a special exhibition or as part of a country delegation in a commercially organised exhibition, arranging group visits to survey markets or sell products to potential customers, organising private visit programs for firms to particular countries, delivering tailored country or industry market information to firms, providing contact details of potential customers, agents or distributors, organising social events in foreign countries to promote particular groups of products, organising government delegations to promote firms' interests in foreign markets, organising and even paying for customer visits to the home country, paying subsidies for overseas marketing expenditure, conducting “how to export” workshops and seminars, conducting market specific workshops and seminars, preparing and distributing publications on exporting and markets, allocating operatives to assist particular firms develop export plans, providing subsidised loans to firms to develop exports, conducting national or firm specific advertising campaigns in overseas markets and probably many others. A wide range of services are offered because firms at different stages of internationalisation (or pre internationalisation) are thought to need different types of export related assistance (Kotabe & Czinkota, 1992).

Whilst the common use of EPP's by governments is readily apparent, what is not apparent is the degree to which they are effective in achieving their goals. Twenty years ago Seringhaus (1986) defined the problem thus: "What researchers should determine and management wants to know, is whether or not such assistance has any impact on exporting activity and to what extent such impact manifests itself" (p.61). This issue is important both in nations where the expenditure involved is significant and also in countries which do not have such schemes and which may therefore be missing out on the benefits to be derived from increased exports. Yet a general consensus on the usefulness of EPP's remains elusive. One of the most important reasons that EPP's are difficult to assess is that their objectives are frequently not clear and therefore not objectively measurable. According to Seringhaus and Rosson (1989): "Thus difficulty of impact measurement...stems from poorly defined goals and objectives for programmes, the likelihood that impacts might be minor or incremental and...methodological problems." (p.214). Whilst the issue of measuring the effectiveness of EPP's has long been discussed in the literature there is surprisingly little consensus on an appropriate set of objectives of such schemes, which of course makes assessment all the more difficult. The overall objective is usually thought to be to increase the value of a nation's exports. But this might be achieved in a number of different ways, the most usual being through improving the export performance of individual firms (Shamsuddoha & Ali, 2006) or through attracting non-exporting firms into the export business (O'Byrne, 2002). This article offers a different objective for EPP programs which, it is argued, would be highly beneficial to nations if met. This alternative is based on recent developments in the field of complex systems analysis and uses this type of analysis to demonstrate the attractiveness and feasibility of the proposal.

The article begins by reviewing previous research into export promotion programs (EPP's) with a particular emphasis on identifying EPP objectives and assessment of performance. The range of EPP objectives identified by researchers is discussed. The paper then draws on recent research into global trade networks that highlights how a nation's position in the network can be improved. This principle is then applied to EPP's and a conclusion is drawn as to the usefulness of network research in the development of objectives for EPP's. The article finishes with a discussion of the implications for government policy and suggests some ideas for future research in this important area.

BACKGROUND

EPP's are directed at a nation's firms to achieve a national objective. "Offering export support programmes is intended to improve the international competitiveness of domestic firms and thus the country's trade balance" (Diamantopoulos, Schlegelmilch & Tse, 1993, p.5). At least theoretically it would seem self evident that the effects of EPP's on firms' export performance are positive. There is a wide body of research that links closely the need for knowledge development with the internationalisation process and in particular with export development (Gençtürk & Kotabe, 2001; Johanson & Wiedersheim-Paul, 1975; Liesch & Knight, 1999). One of the prime purposes of EPP's is to provide exporters and potential exporters with relevant market and business information (Singer & Czinkota, 1994). Linking this with the need for knowledge in internationalisation leads us to conclude that if EPP's in fact lead to better information availability, then better firm knowledge and therefore more or deeper firm internationalisation will result. From this theoretical linkage, quite a few attempts have been made to determine the effectiveness of particular export promotion programs, mostly in North America. The motive for such research is

understandable given that large sums of money are spent by those governments which have substantially free or highly subsidised programs in place. In addition, firms take time to learn about and access these programs and would like to be assured such time is constructively spent. One of the central issues relating to research into EPP effectiveness is selection of the independent variable or, in other words, identification of the real goal of the EPP so that its effects can be objectively measured in terms of relevant outcomes. This in fact has proven to be difficult as is evident from a review of the extant literature on EPP effectiveness.

One of the early research attempts at empirical evaluation of an EPP was that of Pointon (1978) in the United Kingdom. Pointon's measure of effectiveness was "*the impact on sales revenue and/or contribution to cost-savings* through the provision of subsidised services" at the firm level (p.457). He surveyed export assistance users asking for estimates of the additional exports generated by British export promotion programs and any cost savings achieved through such programs. The report concluded that the returns to firms were of the order of 21:1 for expenditure under the programs. That is, each unit of expenditure created 21 units of direct benefit for firms. Such estimates, of course, need to be treated with caution because they rely on the accuracy of the estimates of a sample of executives of revenues and cost savings and the validity of extending those estimates across the entire population of British firms.

Research into EPP's became more prevalent in the 1980's as scholars began to recognise the growing use of such programs world wide. Coughlin and Cartwright (1987) chose as their independent variable *the level of state exports* across the United States. Their work analysed the export promotion elasticity of US state exports, and

they estimated that one unit of trade promotion expenditure in the United States would engender, on average, 432 units of additional exports.

Gillespie and Riddle (2004) call for more study of export promotion organisation decisions on the services they provide to clients. Their understanding of EPP objectives is *the improved export performance of firms* through a range of services. They state that: “Export promotion organizations (EPO’s) aid local business communities to market their products better in the international market place” (p.462) (but do not actually provide any support for that connection).

Vanderleest (1996) focused his research on new exporters only and through a survey of Indiana based, US firms found that the majority of respondents were familiar with and appreciative of US government EPP’s. Most types of assistance were *classified as “very” or “somewhat” useful by surveyed firms*. Thus the objective again is seen as improved firm export performance.

Gençtürk and Kotabe (2001) found through a survey of US firms that usage of EPP’s is positively related to the “competitive position” of firms. That is, higher usage correlates with improved firm management, growth and competitiveness. They also find however that usage of programs does not correlate with superior profitability of exports for firms. Thus the objective of the EPP is *individual firm performance*.

Francis and Collins-Dodd (2004), through a survey of Canadian firms, found that type of firm in terms of the degree of their internationalisation makes a difference to measuring effectiveness and use of EPP’s. EPP’s are most helpful to firms which are actively developing and expanding their export markets, but not of much assistance to firms that already earn most of their income from exports. The effectiveness of the EPP is again measured against its effect on user firms as “export

promotion programs are provided by governments *to help firms, especially small and medium sized ones, overcome real or perceived obstacles to exports*". (p.474).

Shamsuddoha and Ali (2006), through a survey of Bangladeshi export firms, found that EPP's provide a range of benefits for participating firms both directly and indirectly through EPP's impact on managers' export knowledge and export commitment. Their study took the "*impact of export promotion programs on firm export performance*" (p.93) as the dependant variable.

Wilkinson, Keillor and d'Amico (2005) state that the "literature indicates that state sponsored export promotion efforts can be helpful in assisting firms in their internationalization efforts. The evidence suggests that state governments can make a positive impact on firm export." (p.102). In their study they show *US state government spending on trade promotion results in greater export values by those states*.

On the negative side, Albaum (1983) surveyed a sample of small and medium sized US manufacturing firms and found that EPP's were generally unfavourably viewed. Not surprisingly, interviews with state and federal EPP managers indicated they thought firms were appreciative of their programs. Albaum concluded that such programs needed to be reappraised in terms of their effectiveness. Thus "effectiveness" was based on the *views of firms as to the contribution of EPP's to their export performance*.

Wilkinson and Brouters (2000) analysed the number of US state sponsored export promotion activities of various types against state export outcomes. They concluded that certain types of EPP's were likely to be helpful and others not. In fact they found that trade shows help US states (and hence presumably their firms)

increase export sales, foreign representative offices don't and computer generated leads and trade missions are negatively related to exports. The dependant variable was *thus state export values*.

Also reflecting rather negatively on EPP's, Seringhaus and Botshen (1991) surveyed the perceived usefulness of EPP's to both Canadian and Austrian firms. The firms "cast doubt on the usefulness of their respective support measures" (p.128). This is interesting since the two countries take quite different approaches to the style and delivery mechanisms of their EPP's. Thus the dependant variable was *perceived usefulness to relevant firms*.

Diamantopoulos, Schlegelmilch and Inglis (1990) sought the views of firms as to EPP effectiveness. They surveyed Scottish food and drink producers and found that whilst the vast majority of the firms had used UK based export promotion services, the quality of the services disappointed the users. Several specific agencies were classed as useless and several specific types of services were also classified as useless. There were no detectable differences between the characteristics of users and non-users of export promotion services. *Again, perceptions by firms as to the usefulness of the EPP's was the effectiveness criterion*.

The Australian Productivity Commission analysed the use and impact of Austrade export promotion services (Productivity Commission, 2001). The report utilised data collected by the Australian Bureau of Statistics (ABS) in its Business Longitudinal Survey, (BLS)(ABS, 2000) which provided a variety of information on the characteristics and activities of a sample of 1,848 Australian firms. The Productivity Commission utilised regression analysis techniques on *firm level data as to export performance and EPP usage*, concluding that there was no robust evidence

that export facilitation programs had had effects on the export growth of participant firms.

In a deliberate effort to realign EPP objectives with measurable outcomes, the Australian Government moved to a new goal in 2001. The Australian Trade Commission (Austrade) announced that a key goal, specifically endorsed by the Australian Government at the time, was to be the *doubling of the number of Australian exporters over a five year period* (O'Byrne, 2002; Vaile, 2002). The base year for number purposes was 2000-01, implementation of the program commenced in 2002/03 with the five year period finishing at the end of 2006-07. Brewer (2009) showed that the overarching objective of the Australian Trade Commission had been missed by a large margin.

Although generally it seems that EPP programs are assumed to be of assistance to firms, on the whole, research remains somewhat inconclusive regarding the effectiveness of EPP's. Assessment is made in the majority of cases, on the perceptions of firms as to the usefulness of EPP's to them or the measured effect of EPP's on macro level export performance at the state or nation level.

DEFINING THE DEPENDANT VARIABLE

One reason it seems difficult to reach conclusions about the impact of specific EPP's is that they generally do not have self-stated objectively measurable performance indicators. In the cited research above none of the authors specifically quotes official measurable objectives of the schemes under review except in the case of Austrade. Indeed this point was made by Seringhaus (1986) more than twenty years ago and yet research is still "equivocal". EPP assessment generally still suffers from "poorly defined goals and objectives for programmes..." (Seringhaus & Rosson, 1989, p.214).

Generic overarching objectives are usually stated by researchers themselves. For example, Francis and Collin Dodd (2004, p.474): “The goal of export promotion programs is to enhance export performance by improving firms’ capabilities, resources and strategies and overall competitiveness which in turn have been demonstrated to improve export performance”. As another illustration of this problem, the EPP objectives presumed by researchers, for example, “usefulness” (Vanderleest, 1996), may not be relevant to the actual goals of a nation’s EPP. A major EPP goal may be to increase the nation’s total export income or to improve the balance of trade outcome, which are quite different to being “useful” to firms. The goals or objectives of the actual EPP managers themselves need to be taken into consideration, not simply the expectations of researchers or firms as to what those goals should or might be. Regretfully, governments seem to have been remiss in specifically stating what their EPP’s are intended to achieve. We suggest an alternative perspective for EPP goals which may provide a better means of judging effectiveness.

A REVISED APPROACH TO EPP OBJECTIVES

Methodology

We propose the use of network analysis to demonstrate an alternative desirable EPP outcome that should be considered by relevant agencies. Network analysis is an analytical tool that is particularly useful for studying multi-level interactions, such as international trade relationships (Newman, Barabasi & Watts, 2006). In economics and business, there is a strong theoretical justification for viewing the economy as an evolving complex network (Dopfer, 2005; Dopfer & Potts, 2008; Kirman, 1997). From this perspective, network analysis is very useful as a way to measure and assess economic processes (Potts, 2000). However, to date all of the work in this area has neglected the issues surrounding multi-level analysis and has simply viewed the

international trade network at the aggregate level. In large part this is due to a lack of understanding of the results of international business studies that can usefully inform the macro-level research. International business researchers have developed a good understanding of the firm-level dynamics that create new links within the international trade network, which suggests that cross-disciplinary work combining international business and the network analysis of trade will be fruitful in understanding how a nation's position in the trade network can be improved.

We apply this cross-disciplinary approach to a unique longitudinal data set to demonstrate that while the structure of the overall trade network is relatively stable, many countries have in fact changed their position within the network over the past sixty years. This in turn shows that it is reasonable for countries to try to actively manage their position within the trade network in order to contribute to faster economic growth. This clearly should be of interest to EPP agencies.

We use data from the Direction of Trade annual reviews, published by the IMF in conjunction with the United Nations and the World Bank¹. The first issue was published in 1950, containing trade flow data from 1948. In the 1953 edition, data from 1938 were included. For this study, we have taken the trade data for every ten years from 1938 to 1998, and also included the most recent data from 2003, resulting in a total of eight data sets. To our knowledge previous network-based studies that have looked at international trade data have not used more than three data sets, and the time span covered has not exceeded 35 years. In each yearbook, trade flow volumes are reported in current US dollars. Every country is listed, with a summary

¹ The data series was published by the IMF/UN as Direction of International Trade from 1950 to 1963, then by the IMF/International Bank for Reconstruction and Development as Direction of Trade from 1964 to 1980, and as by the IMF as Direction of Trade Statistics from 1980 to present. The compilation methodology has remained the same throughout.

of all of their exports to and exports from other countries. The data are provided by each country, and the IMF report is a summary of these data.

The export data in each year are used to construct the network data set. While it appears as though the import data are more accurate (Linnemann, 1966; Sangmoon & Shin, 2002), we use the export data for two reasons. One is that exports are more important from a policy standpoint. Many governments take steps through EPP's intended to improve export performance among firms. Since the ultimate objective of our stream of research is to link these macro-level data to EPP objectives, it makes sense to analyse export data. The second reason is that the method of analysis does not require perfectly accurate figures, so while it is always preferable to use more accurate data, it can be taken that this difference in accuracy will not have a substantial impact on the current study.

Each country that reports trade data is described as a node in the network, while trade relations between two countries constitute the ties. Specifying countries as nodes is relatively straightforward. However, in each set of data, there are countries included in the listing that do not report trade data. In some cases, the IMF is able to build a reasonably complete report with data from other countries. However, if there are no export data available for a country, we have discarded them from the data set. This is done so that the resulting network forms a connected graph.

The choices surrounding how to specify ties are more complicated. In this study, we use an approach similar to that of Serrano and Boguna (2003). For each year, a cut-off value is determined as the largest possible percentage of exports that theoretically allows the network to be fully connected. In other words, we use the percentage where a country could send all of its exports in equal amounts to all of the other nations in the world. For each sample, the cut-off value is calculated as follows:

Cut-off % = $100/\text{number of nations}$. In 1998 and 2003, where there are 183 nations in the network, the cut-off is 0.55% of total exports. Hence, for each country, the total number of exports is multiplied by this value, and any target country that receives a percentage of exports which is higher than this cut-off value is designated as having a significant trading relationship with the originating country.

This method captures about 80-90% of all international trade in each of the sample years. As the data have become more accurate, the value of exports included in categories such as 'Asian countries unspecified' has greatly decreased relative to amount included in such categories in 1938 and 1948, in particular. This means that the coverage has improved as the samples become more recent.

EMPIRICAL RESULTS

Dynamics within the international trade network

Because the empirical research on the international trade network primarily uses statistics that measure characteristics of the entire network, little work has been done to date on the micro-level actions that create this macro-structure. In fact, there have been two robust findings supported across a number of studies which have led many researchers to assume that that micro-level heterogeneity can be safely ignored. The first is that the overall structure of the network has remained remarkably stable over time. This is true both in studies that have looked for changes over relatively short periods of time (five to twenty years) (Garlaschelli & Loffredo, 2004; Sangmoon & Shin, 2002), as well as in our research which extends the timeframe back to 1938 (sixty-five years).

The cumulative distribution functions (CDF) of the international trade network show the overall structure of the network (Figure 1). Throughout the years, the trading network has retained the structure that includes a small number of highly connected hubs, and a large number of poorly connected peripheral nations. Because the number of countries has doubled, the actual number of hubs has also increased. Italy, Spain, Japan and China have all become hubs. At the same time, most of the new countries start out poorly connected, and remain so. Consequently, the shape of the cumulative distribution curve has not changed at all. As the size of the network has grown, the CDFs have shifted to the right, reflecting the large number of potential connections available. However, the overall shape has remained essentially the same. Many other network-level measures show similar stability over time, leading some to conclude that this macro-level stability shows that there has also been no change *within* the network.

PLACE FIGURE 1 HERE

The second reason that some have ignored heterogeneity within the network concerns the actual shapes of these distributions, which are also consistent across studies of the international trade network using different datasets and different analytical techniques. It is often asserted that the international trade network has a power law degree distribution (Garlaschelli & Loffredo, 2004; Li, Jin & Chen, 2004; Serrano & Boguna, 2003). In fact, a power law distribution is also consistent with the findings in the world-systems research in that a core-periphery structure also consists of a small number of hubs and a large number of poorly connected peripheral nodes (Borgatti & Everett, 1999). One of the criticisms of the econophysics literature from Galleginati et al. (2006) is that researchers in this field are too anxious to classify networks as

having power law distributions. This occurs for two main reasons. The first is that some contend that power law distributions are the most reliable indicator that a network is actually complex. The second is that the evolution of power law distributions can be easily explained through a universal generating mechanism called preferential attachment.

Preferential attachment was first described as the generating mechanism that explains the structure of the world-wide-web (Barabasi, 2002). The idea behind it is that when a new node enters a network, the odds that it will form a link with an existing node are proportional to the number of links that the existing node already has. In other words, nodes that are already well connected are the most likely to gain new links. This 'rich get richer' growth mechanism generates a network with a small number of highly connected nodes (hubs), and a large number of nodes that are poorly connected. Preferential attachment is an attractive generating mechanism to explain the state of a network because it is a simple rule that all agents in the network follow, but which can still generate quite complex network structures. This is consistent with the approach taken by physicists, who look for macro-level patterns that can be explained by simple, regular micro-level actions (Stanley, 2000). Consequently, they conclude that if preferential attachment is the mechanism that drives the growth of the network, this in turn shows that the actions of the nodes can safely be assumed to be homogenous.

Several of the studies of the international trade network have asserted that this network has a power law degree distribution which is a result of preferential attachment. Since most of the studies of the international trade network have involved a sample of data from a single time period, this assertion is purely speculative. The research that has taken samples from more than one time period has

tended to be more cautious about attributing the structure of the CDF to preferential attachment, but the data in this work has not covered a sufficiently long period of time to test the idea either. With a longer time period, we are able to test whether or not preferential attachment is the underlying generating mechanism for the structure of the international trade network.

Batty (2006) recently developed a simple analytical tool, rank clocks, which tests whether or not a power law distribution has been generated through preferential attachment. The concept underlying rank clocks is straightforward. With a longitudinal data set, for each sample the nodes are ranked from most connected down to least connected. The rank of nodes is then tracked over time. If preferential attachment is the primary generating mechanism, the ranks of the nodes in the network should remain stable over time. Nodes that start out with a large number of connections are more likely to gain new connections, so they should remain towards the top of the ranking. Nodes that start out poorly connected are less likely to gain new links, so their rankings should stay low. New nodes that enter the network in later periods should be the most poorly connected. When the ranks of all nodes are tracked together on a circular graph, networks generated through preferential attachment should form a series of concentric circles. However, this is not the result when the rank clock for the international trade network is generated (Figure 2).

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At first glance, the figure looks chaotic, but that in itself is useful information. There is no clear pattern of stable rankings, as would be predicted by preferential attachment. In fact, the rank clock which includes all countries includes four main

patterns. The first is the stable pattern that would reflect preferential attachment (Figure 3). However, only about 10% of the countries show this pattern, and they tend to be the highly connected hub nodes within the network.

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The second pattern is one of consistent improvement (Figure 4). This pattern also includes about 10% of the countries in the network, including those that have shown substantial economic growth in the post-WWII years such as Singapore, Taiwan, Saudi Arabia, Spain and China. About 5% of countries show the opposite pattern, one of consistent decline (Figure 5). The most notable country in this group is Argentina, the 10th most connected country in 1938, but which in 2003 is ranked 96th. The most common pattern is one that fluctuates, which includes the majority of countries in the network. The fluctuating patterns reflect the other three patterns – while all three involve countries moving up and down the rankings, some end up in roughly the same place (India, New Zealand), some improve overall (Ireland, Russia), and some decline (Romania, Tunisia).

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As Batty (2006) points out, instability in rankings is sufficient to rule out preferential attachment as the generating mechanism. One final illustration of this shown in Figure 6, which looks at the rank clocks for Australia, the five countries that ranked

above it in 1938, and the 5 that ranked below. If preferential attachment is the generating mechanism for a network, while there may occasionally be shifts in rank due to changes in some sort of fitness measure, in general, a node's starting point determines where it will stay over time. And yet, while Australia and four of the other countries ranked near it in 1938 do show relative stability in their ranks, the other six countries do not. Canada, Russia and China have all moved up in the rankings quite significantly, with China actually becoming a hub in the 2003 network. At the same time, Romania, Egypt and Hungary have all have the declining fluctuation pattern. There is clearly some mechanism other than preferential attachment that is defining change in the international trade network.

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This lack of determinism is encouraging in that it shows that there is actually scope for improving a country's position within the trade network. For those concerned with economic development, and with the problems that may be created by a strong core-periphery structure in the international economy, it is certainly good news that growth in the international trade network does not appear to be driven by a preferential attachment mechanism. Even though many of the fundamental structural values of the international trade network have remained stable over a period of sixty-five years, rank clock analysis shows that there is a considerable amount of dynamic change at the level of countries within the network. The fact that there are such high levels of dynamics within the network demonstrates that there is at least the potential for improvement in network position with consequent economic benefits.

DISCUSSION

The analysis in the previous section shows that countries are able to move their ranking within the global trade network. In other words countries are able to become more connected with other countries and are not necessarily consigned to stable relative network positions over the medium term. International trade correlates with Gross Domestic Product (GDP), indicating that trade plays an important role in economic development and progress (Dollar & Kraay, 2001). Garlaschelli and Loffredo (2004) also show that wealth generation is greater amongst nations with more rather than less interaction with other economies. Thus, connections with a relatively greater number of trade partners would have beneficial effects on the economic welfare of a nation. As shown in the international business literature, changes within the global trade network that lead to increased connectivity for a country correlate strongly with economic growth (Kali & Reyes, 2007). This provides an opportunity for EPP's to move away from traditional EPP goals which remain difficult to assess and possibly of little net benefit to a nation. Such traditional activities and goals include specifically directing attention to an improved export performance of particular firms in their existing markets which may be of assistance to the firms themselves, in that they are "helpful", but may not provide economic benefits for the nation as a whole. Such traditional EPP goals, given their equivocal assessment in the literature, remain open to question.

As discussed, the Australian EPP, Austrade, chose in 2002 to move to an objective of attracting more Australian firms into export activities. By doubling the number of exporters over a 5 year period, it was reasonable to conclude that the nation's export performance overall would grow. This decision, at least partly, was

based on the difficulty in demonstrating a difference to the nation's export performance by directing assistance at specific firm export performance. As it happened, the program of activities was not successful, however, the resetting of the goals is an innovation which could be extended into new areas.

CONCLUSION

In a globalising world the questions of whether to have EPP's, and if so in what form, remain important ones for all governments and the decision must ultimately be based on a comparison of outcomes to costs. Understanding the effectiveness of EPP's is also important for firms which would then be in a better position to choose to participate or not in such activities. Thus the need for clear EPP objectives has become more and more evident to firms and to governments. This research has demonstrated that one such goal that should be considered by EPP agencies is that of increasing their nation's connections with the global trade network. By so doing governments can confidently expect an increased level of national economic welfare, as shown by several previous studies.

An issue for future research is to determine an optimal range of EPP activities and programs that might best be implemented to achieve an expanded international trade network. Possibilities include the expansion of free trade agreements with selected current "shallow" trade partners, or the dedication of trade display and trade mission resources to those countries or the opening of trade offices in those countries or combinations of such activities.

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Figure 1- Cumulative distribution functions $P_c(k_{in})$ of the international trade network as it has evolved from 1938 to 2003.

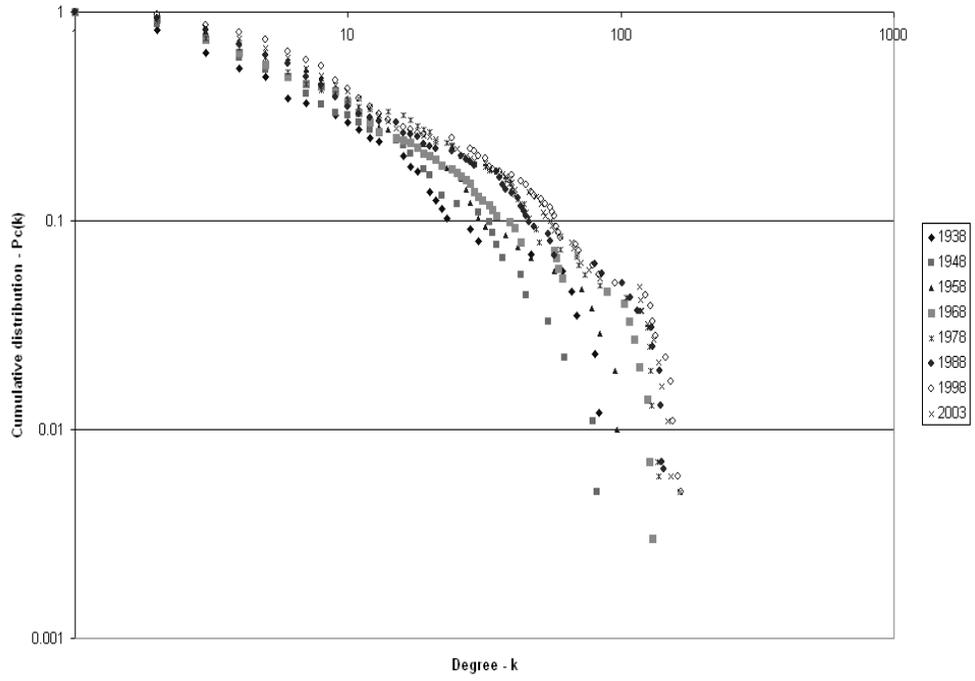


Figure 2: Rank Clock for the International Trade Network, 1938-2003

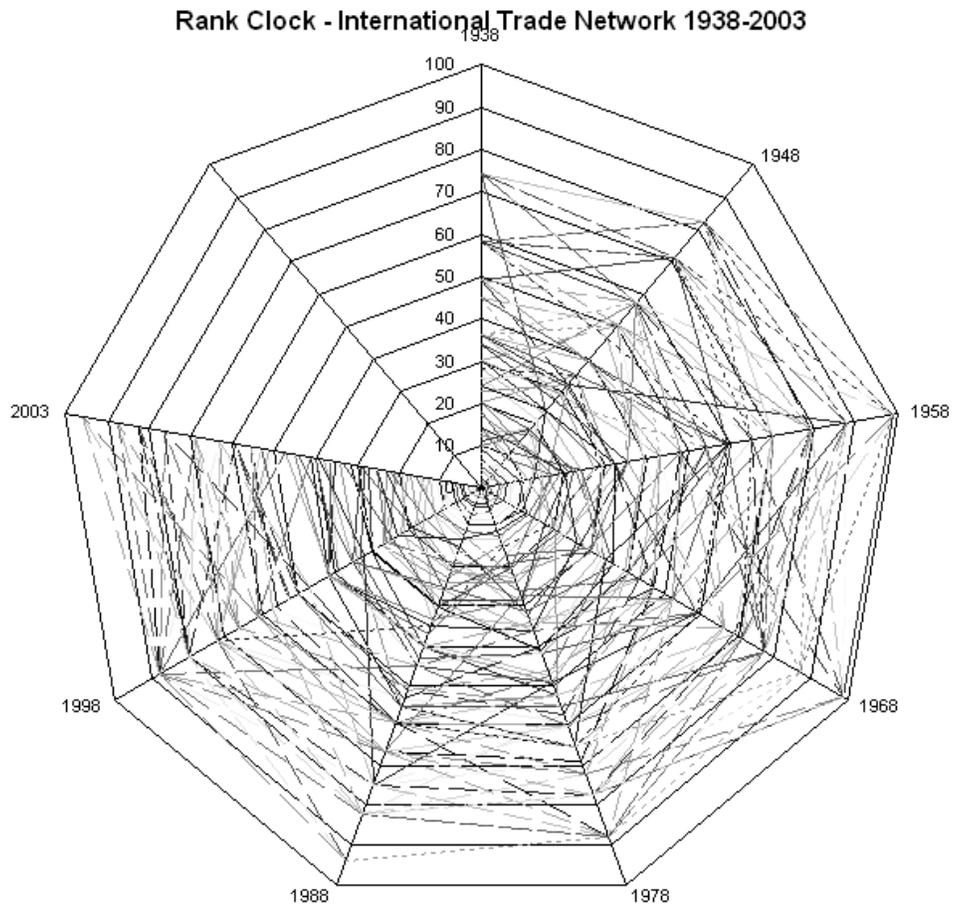


Figure 3: Countries with Stable Rank

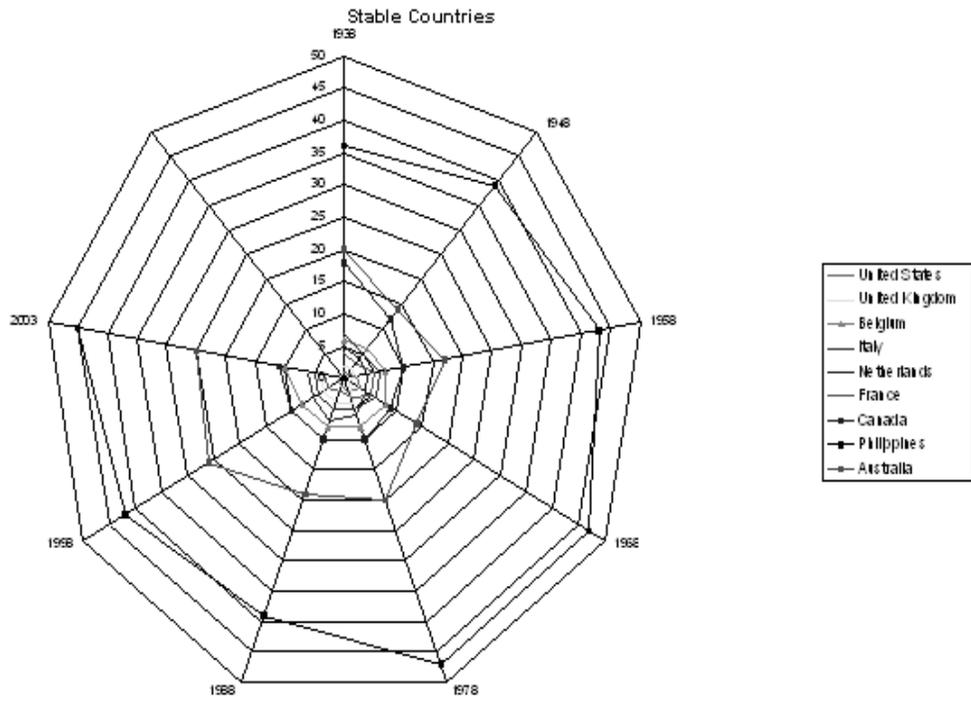


Figure 4: Improving Countries

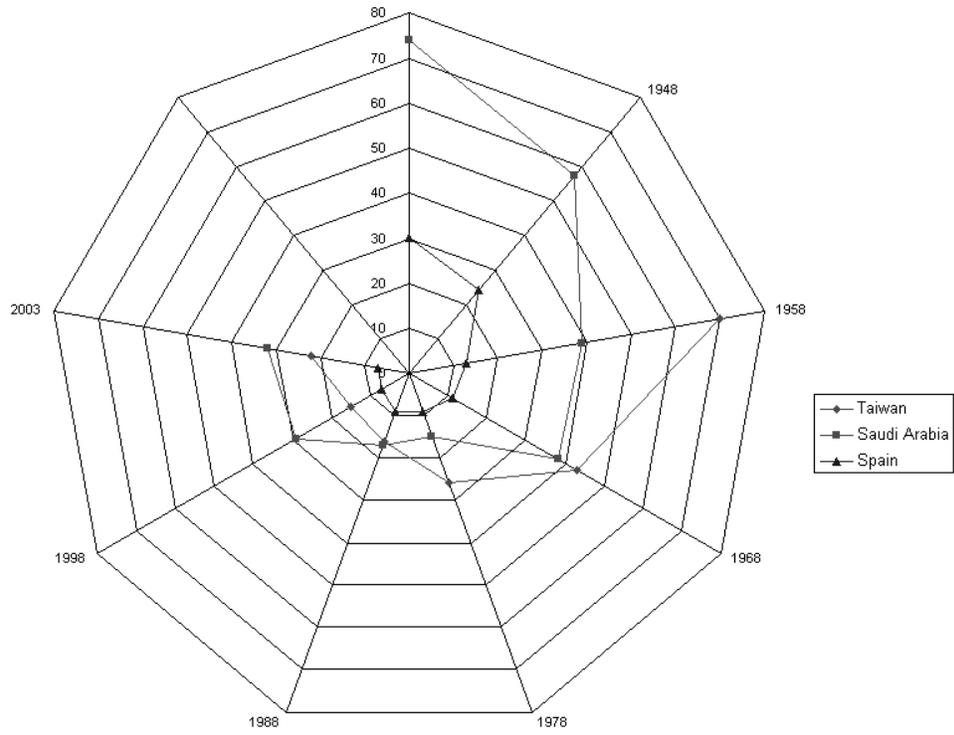


Figure 5: Declining Countries

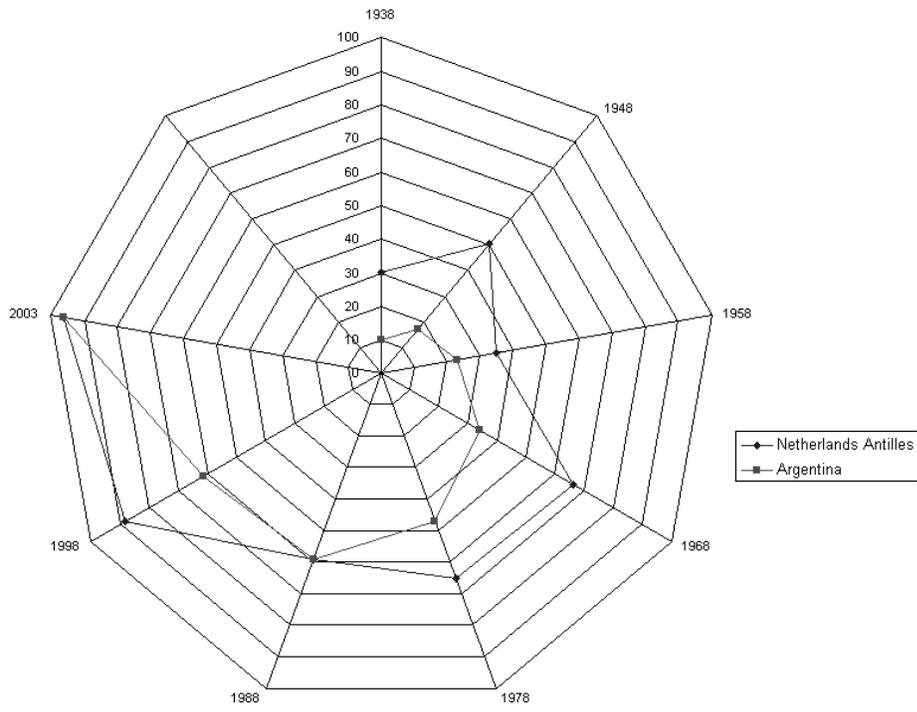


Figure 6: The countries ranked 18th-28th in 1938

