



Australian Government

Department of Infrastructure and Regional Development

Bureau of Infrastructure, Transport and Regional Economics



International trade and cities: what house prices say

At a glance

- International trade has risen almost exponentially over the last forty years. On current trends, it will be more than half of global GDP within the next decade.
- The purpose of this paper is to examine how this major change in the world's economic structure is affecting cities in order to better understand what is happening to them now and how they may develop in future.
- The paper uses relative house prices to measure the economic value of locations (called locational value). The proposition is that when a person buys a share in a company they assess both the net present value of the company and its future earning potential. Similarly, when a person buys a house they pay the price of admittance to access the economic, social and amenity value of an area (its locational value). Included in the price is their assessment of future changes in the area's locational value. Therefore, *relative* house price movements should represent changes in the locational value of cities, the key measure of economic geography.
- Because house price data is collected at the level of a street address, it can be used to assess locational value changes at a fine intra city scale all the way to a continental scale. An additional advantage is that many countries have data that spans several decades enabling relatively slow moving but profound structural changes to be assessed.
- The resurgence of world trade since the mid-1970s has been called globalisation Mark II as trade in merchandise goods and services between countries as a share of global output is returning to levels not seen since the First World War.
- Developing countries led by China have increased their share of global trade in recent decades particularly since the Global Financial Crisis. Currently, they have almost the same share as developed countries. This is fundamentally altering global economic geography and with it the locational values of cities as their places in the international trade network become more or less valuable.
- Australian house prices, along with those in other English speaking countries, experienced a step change around 1997 and these countries have largely risen and fallen together since then. This suggests that international factors play a major role in national house price movements. House price movements within countries however seem to be sensitive to changes in the amount and direction of international trade.
- Ireland's economy is increasingly dominated by its international trade in services generated within Dublin which is also the country's main sea port and airport. The city is also orientated towards Ireland's fast growing trade with the rest of the European Union. Dublin's house prices have risen 25 per cent in the last 12 months while prices in the rest of Ireland have been static or have fallen.
- Britain's trade in services is concentrated in the City of London and the trade in merchandise goods is now done mostly through ports serving London and south-east England. London is also oriented towards the European Union and Britain's increasing Asian trade. House prices in Greater London began to increase much faster than the UK average in 1996 and this price divergence has widened further since the Global Financial Crisis.

- The direction of Canada's trade is changing towards Asia and the western United States. Provinces and cities in western Canada have seen their locational values rise faster than those in the east.
- The direction of trade is also changing in the United States. A growing proportion is with the fast growing Asian economies and less with the more economically subdued European economies. Cities on the west coast are more favourably orientated to the new trade patterns and like their western Canadian counterparts, have seen their locational values rise faster than those in the east.
- New Zealand's trade is also being reorientated towards Asia, particularly China. This and the associated demand for trade related services, has advantaged Auckland over other New Zealand cities and its house prices have begun to pull away from the rest of New Zealand.
- Australia's trade patterns are also shifting towards the north and west advantaging those parts of the country orientated in that direction. In 1992 the average non-metropolitan¹ house in the west and the north of the continent was worth about \$1,000 less than one in the south east. Now they are worth \$88,000 more.

Introduction

The rise in the international trade of goods and services and the volume and speed of capital flow since the mid-1970s has been one of the most profound economic changes of our time. While the topic has been well studied at the national level, the effect of increased international trade at the regional level has been less well examined. The key way to measure this is changes in locational value (how much an area is worth). However, locational value has been very hard to assess. It is difficult to compare, for example, the locational value of Wagga Wagga in New South Wales with that of Swift Current in Saskatchewan.

This paper explores the feasibility of using *relative* house price movements to measure changes in the locational value of regions both internationally and within Australia due to world trade. Purchasers of shares in a company assess the value of the shares not only on the net present value of the company but also their expectations of its future earnings. Buying a house is similar. Purchasers of houses in an area are paying the price of admittance to the economic, amenity and social value of that area. The price represents not only the current assessment of the area but also the expectations of future value reflected in the potential for future capital growth of the house. While individuals may weight locational factors differently, it is the contention of this paper that the locational value of an area reflects the consolidated assessment by home owners. Since buying a house the largest single investment most households will make, the proposition assumes the assessment of a region's value will be well considered.

Like shares, houses are increasingly traded on the international market and prices therefore reflect not only relative changes in social and economic conditions within countries but now between countries.

The paper is in four parts.

1. The first is a précis of the changes in international trade and the housing market in English speaking countries.
2. The second looks at the changing direction of international trade and the resultant changes in locational value measured by relative house price movements in countries comparable to Australia; Ireland (The Republic), Britain, Canada, the United States and New Zealand. These countries were chosen because they share a number of features with Australia; comparable housing policies, an internationally traded housing stock, relatively open trading policies, similar governance, economic structures and a common recent history.
3. The third part of the paper looks at the relationship between the flow and directions of Australia's international trade and locational values measured by housing prices.
4. The paper concludes with some observations on the implications of changes in international trade on the economic geography of Australia.

Notes on graphs

A cautionary word about reading the line graphs that are used extensively throughout this paper. The reader needs to aware that as values increase, the lines will tend to diverge.

¹ House prices in the metropolises of Sydney and Melbourne have their own dynamic as discussed in Information Sheet 67

Figure 1: The effect of compounding growth on line figures: An example

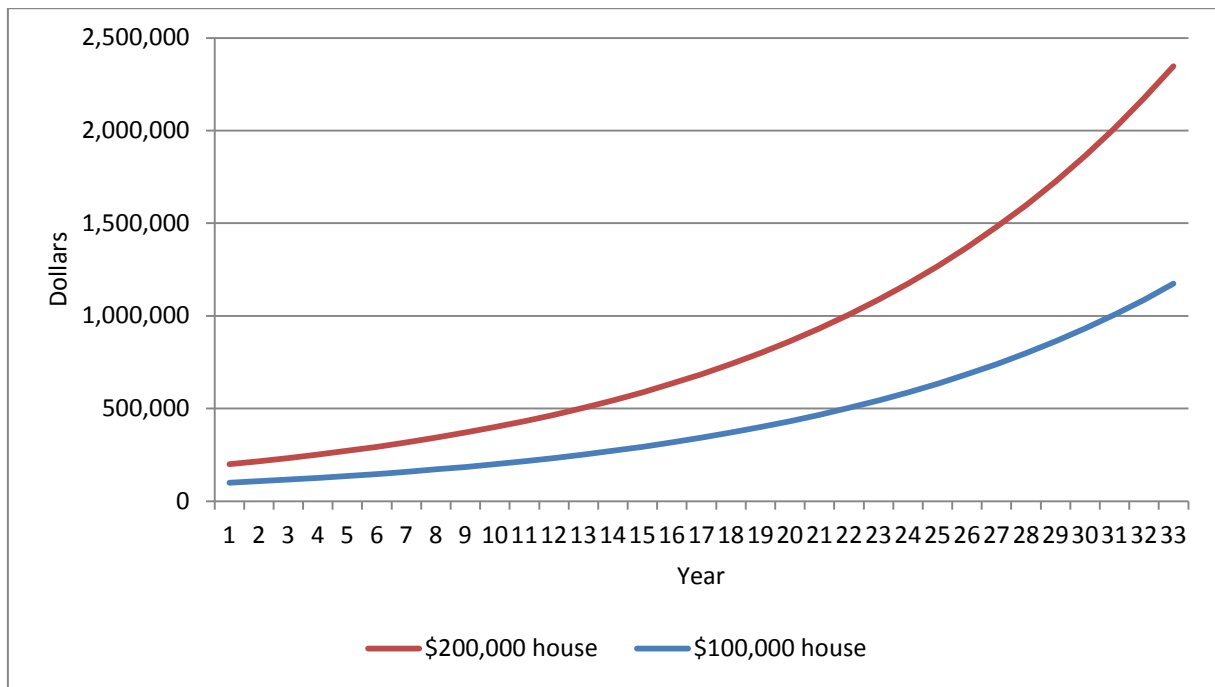


Figure 1 shows the capital growth for two hypothetical home buyers over 33 years; one who bought their house for \$100,000 (the blue line) the other who bought theirs for \$200,000 (the red line). The graph appears to indicate the value of the \$200,000 house is growing faster than the \$100,000 house. In fact, both are growing at the same eight per cent per annum. It is the ‘magic of compounding’ that is being indicated by diverging lines. At year 2, the \$200,000 house is worth \$216,000 or \$16,000 more while the \$100,000 house is worth \$108,000 or only \$8,000 more.

A more accurate representation of relative change is to create an index graph by starting all values at 100. To continue the example above, it is like assuming everybody bought their house for \$100,000 in Year 1. Index line graphs are used extensively throughout the paper. The major exception is in the discussion of Australian house prices where the nominal values most readers will be familiar with are presented along with the index values.

Because the structural changes the paper is examining are mostly gradual, long time series are used where possible, the longest going back to 1826. Many of these are also highly aggregated. The reader needs to be aware of the accuracy limitations of these data sets and is referred to the source data for details.

Notes on trade data

One reason why a study like this has not been attempted before is that data on the geography of international trade has been scarce and patchy at the sub national level. While it has improved to a level that allows a study such as this, it is still far from comprehensive. There are a number of agencies that aggregate data on international trade such as the World Bank, World Trade Organisation and the United Nations Conference on Trade and Development (UNCTAD). Data from these sources are used where possible to allow comparability particularly because they are measured in a common currency (US dollars). For some matters, such as direction of international trade, the data needs to be sourced from individual countries. This varies in both comprehensiveness and quality. Where possible, government or semi government sources are used.

Notes on house price data

House price movements are affected by a constellation of factors such as national fiscal, monetary and housing taxation policy, prudential rules, restrictions on foreign ownership and local planning policy. This study contends that *relative* house price movements at the city level within a country reflect to a large degree the price people are willing to pay to have access to the economic value of an area. There are a number of reasons for this. First, fiscal, monetary and housing taxation policy are national in the countries studied, thus all houses are affected equally.

Second, prudential rules are also national and changes also affect all houses equally. While it could be argued that practices such as redlining², are sub national, they have generally been in place for the period of the study and thus do not significantly affect *relative* house price movements.

Third, to best knowledge none of the countries in this study place *geographic* restrictions on foreign ownership. It is assumed that foreign house buyers pay for locational value in the same way that locals do. This would mean that relative house price movements within countries are largely unaffected by the level of foreign buyers.

Fourth, perhaps the biggest challenge to using relative house price movements is the variations in local planning policy. To draw on an example from the United States, Portland (Oregon) has been an exemplar of New Urbanism for many years with an emphasis on mass transit and urban consolidation. On the other end of the spectrum is Atlanta (Georgia), a car dependent low density city that covers an extensive land area. However, most city shaping planning policies have been in place for the period of this study. To reduce as far as possible distortions due to planning policies, cities are aggregated into functional groups where possible.

House price data was gathered from wherever there was a reputable source with a long time series. For Britain, New Zealand and Australia these were commercial sources. The data for Ireland, Canada, the United States and international prices came from official sources. Like much of the trade data, house prices are collected by individual countries for their own use and the geographic units used and the time lines are only broadly comparable. This limitation is exacerbated by fact that much of the house price data is indexed at different years.

Analysis

The analysis done in this paper is at a level to suit the data's ability to make geographic inferences. For example, there is no data on the amount of international trade carried on in the Canadian city of Winnipeg but there is for the province of Manitoba where it is located. The geographic inference is that a change in the international trade of Manitoba is reflected in Winnipeg and its locational values respond to this. For much of this paper the data quality is such that the scale is continental and the time frame decadal. In Information Sheet 67, the data quality improves and this allows more robust analysis.

Section I: International trade and house prices: An overview

Trade in merchandise goods

The current era is often referred to as Globalisation Mark II (Scott 2012). This refers to the fact that world trade as a proportion of global GDP was high in the late nineteenth and early twentieth century. Protectionist ideologies grew throughout the late nineteenth century, particularly in the United States and these gradually overcame the 'free traders' led by Great Britain and by the start of the First World War Globalisation Mark I was finished. A tentative revival during the 1920s was ended by the Great Depression (Kenwood 2014).

² Redlining is a practice in some parts of the United States. It refers to provision in the National Housing Act of 1934 where certain suburbs, usually with a high proportion of African-Americans, were delineated by a red line on a map designating them as high risk and consequently they were often denied mortgage finance.

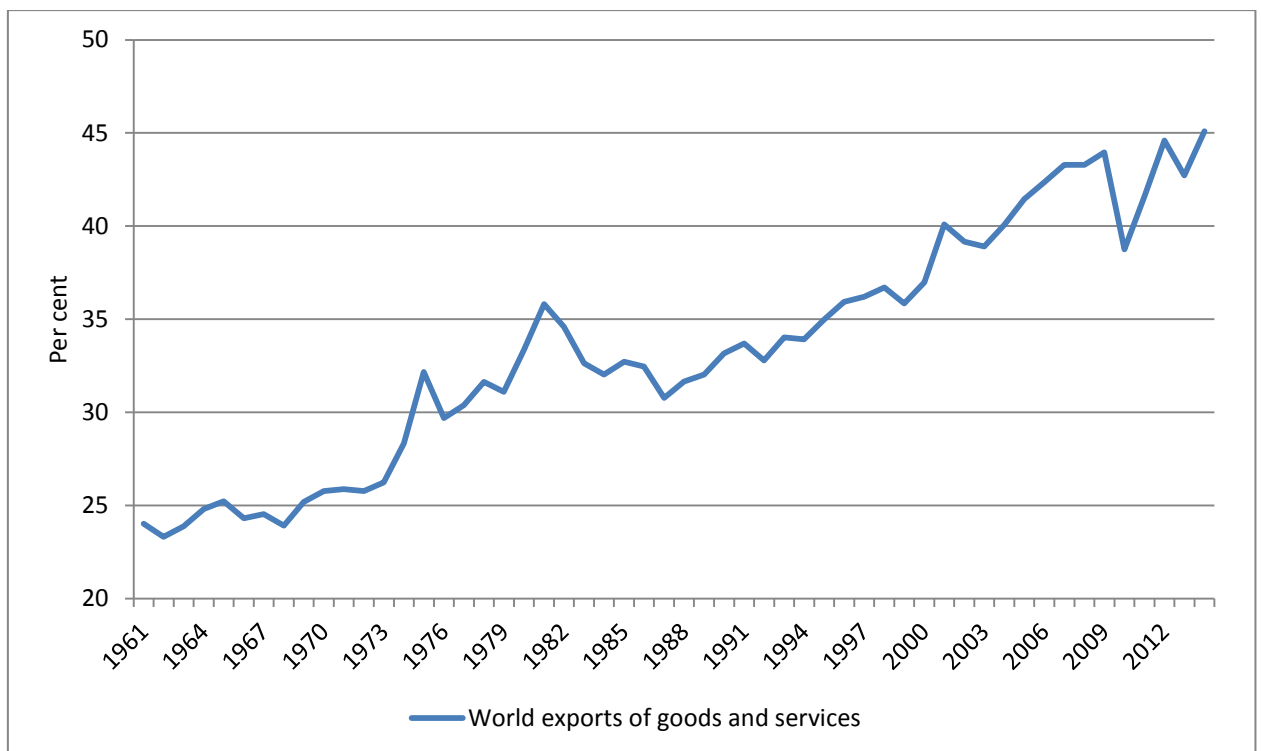
Figure 2: Global trade in merchandise goods 1948-2013



Source: UNCTAD 2014a

After the Second World War, international trade began to increase again, at first very slowly, before gradually becoming Globalisation Mark II. Figure 2 shows the process indicated by the almost exponential increase in merchandise trade since the mid-1970s. Noteworthy in this figure, is the severity of the downturn in international trade caused by the Global Financial Crisis. This has been much more severe than previous trade downturns since at least the Second World War.

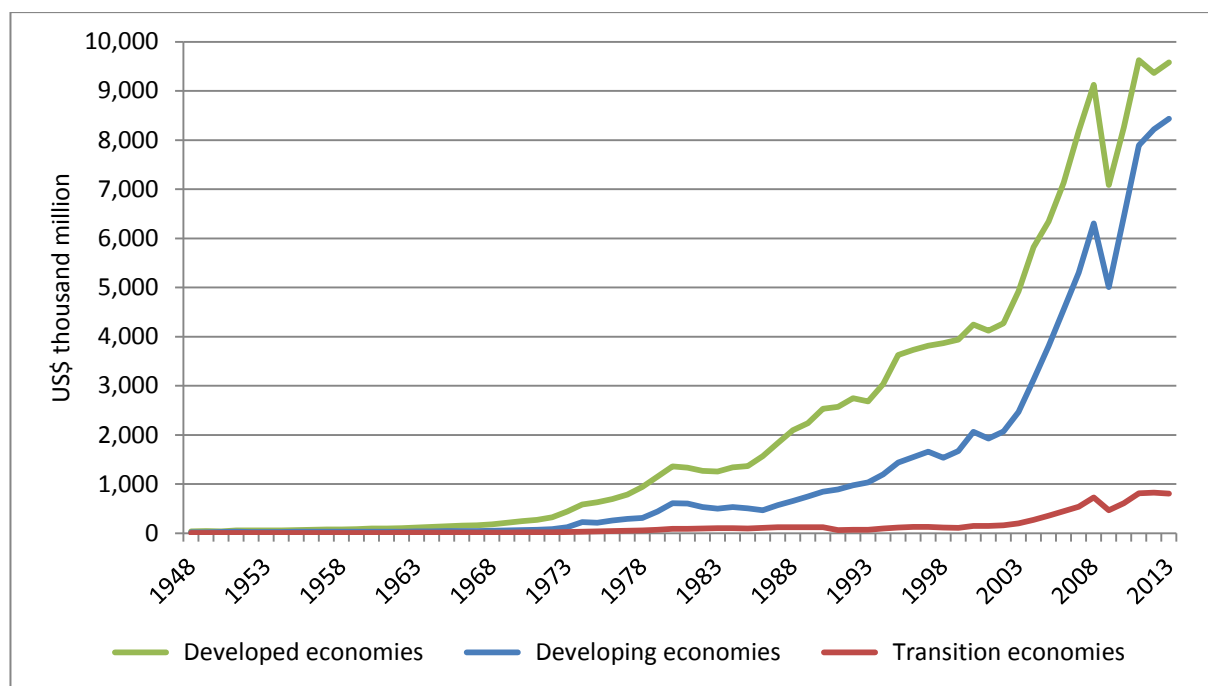
Figure 3: Exports of goods and services as a percentage of global GDP 1961-2013



Source: World Bank 2014

International trade as measured by exports³ in Figure 3 is a steadily increasing component of world GDP moving from 24 per cent in 1961 to 45 per cent in 2013. If the current trend is maintained, trade will be more than half of global GDP within another decade.

Figure 4: Global merchandise trade by developed, developing and transition economies 1948-2013

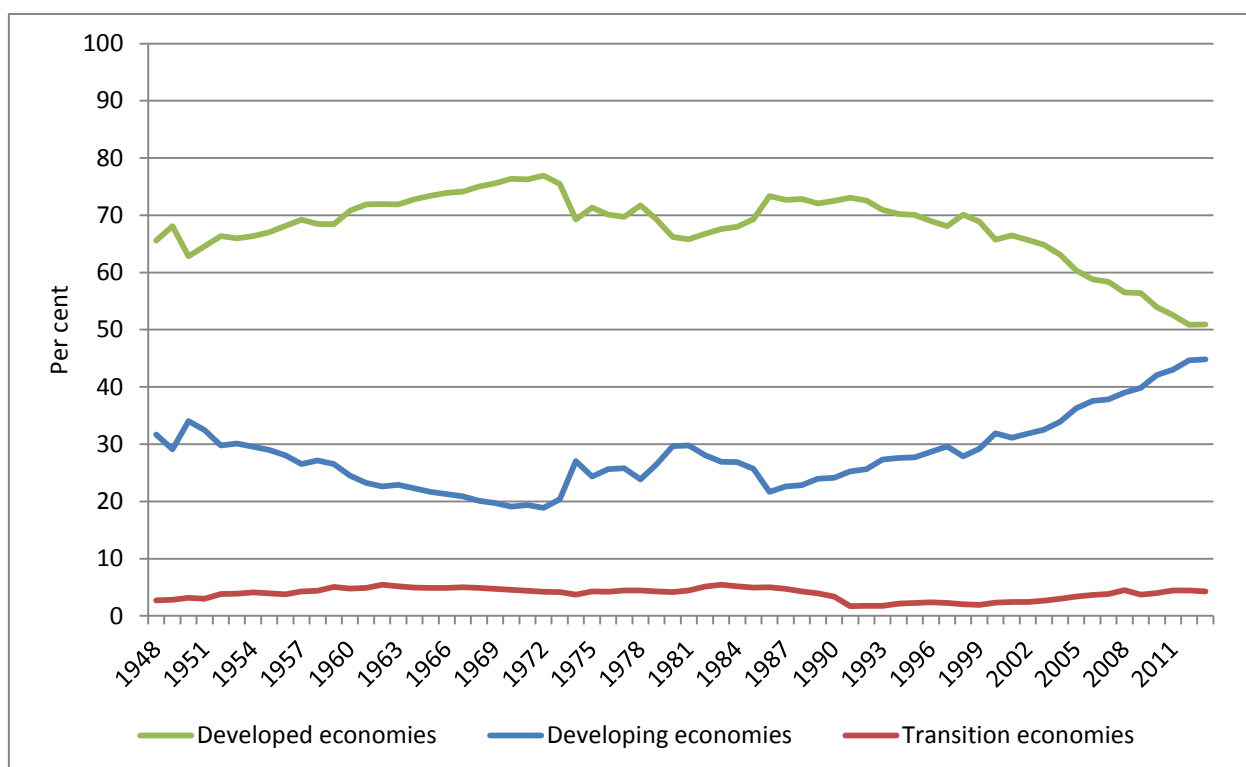


Source: UNCTAD 2014a

Figure 4 indicates the reorientation of global geography during Globalisation Mark II. The downturn in world merchandise trade after the Global Financial Crisis was deeper in developed economies and the recovery has been slower.

³ Imports are implied because if one country is exporting another must be importing.

Figure 5: Proportion of global merchandise trade by developed, developing and transition economies 1948-2013



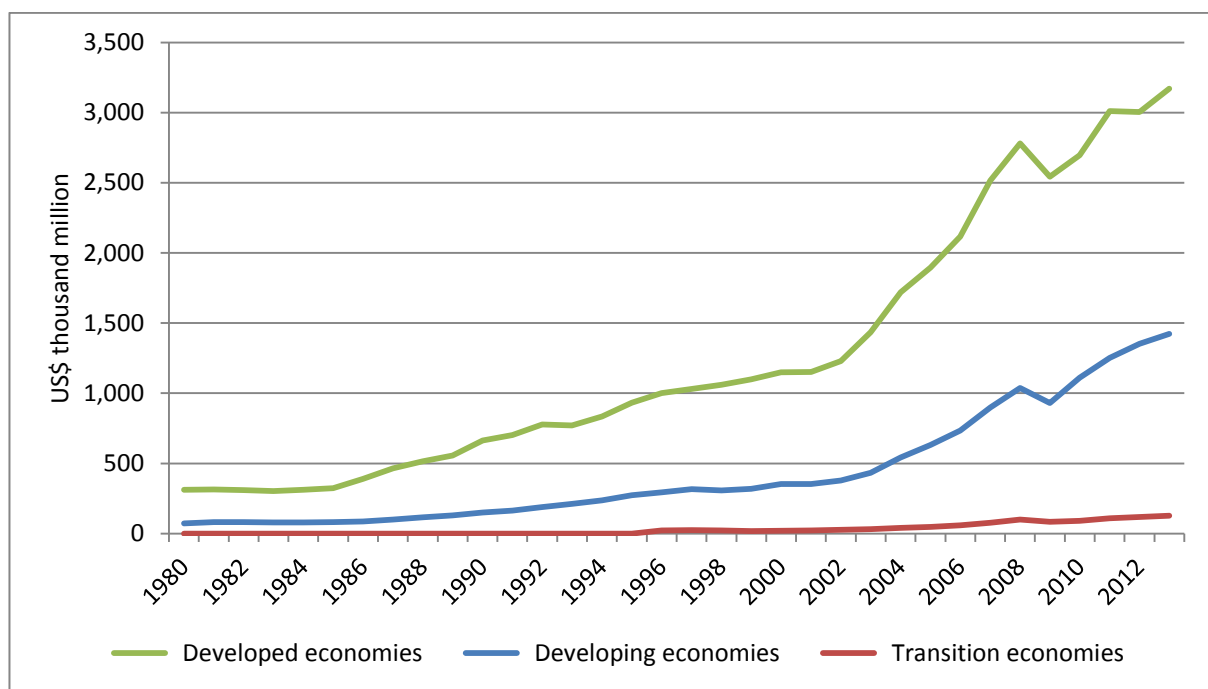
Source: UNCTAD 2014a

Figure 5 presents the same data as shares of merchandise trade. This indicates that structural change has been quite rapid since around 1987, reflecting to a large degree China's increasing role. Before leaving this graph, a note of caution. It is tempting to conclude from the figure that transition economies play a minor role in world trade. In fact, their trade has grown 500 fold since the Second World War and they now trade over \$US 80 billion a year. Their continuing small *proportion* of merchandise trade reflects the fact that many developing countries have grown faster and that former transition economies such as South Korea and Taiwan have been reclassified.

Trade in services

There is a lively literature on just how difficult it is to measure services in general and the international trade in services in particular and the following information needs to be read with that in mind (Lipsey 2006, Lanz et al 2009). One of the consequences of the difficulty in measuring the trade in services is that high quality global data has only become available more recently and reflecting this, the time series are shorter than the merchandise goods data sets.

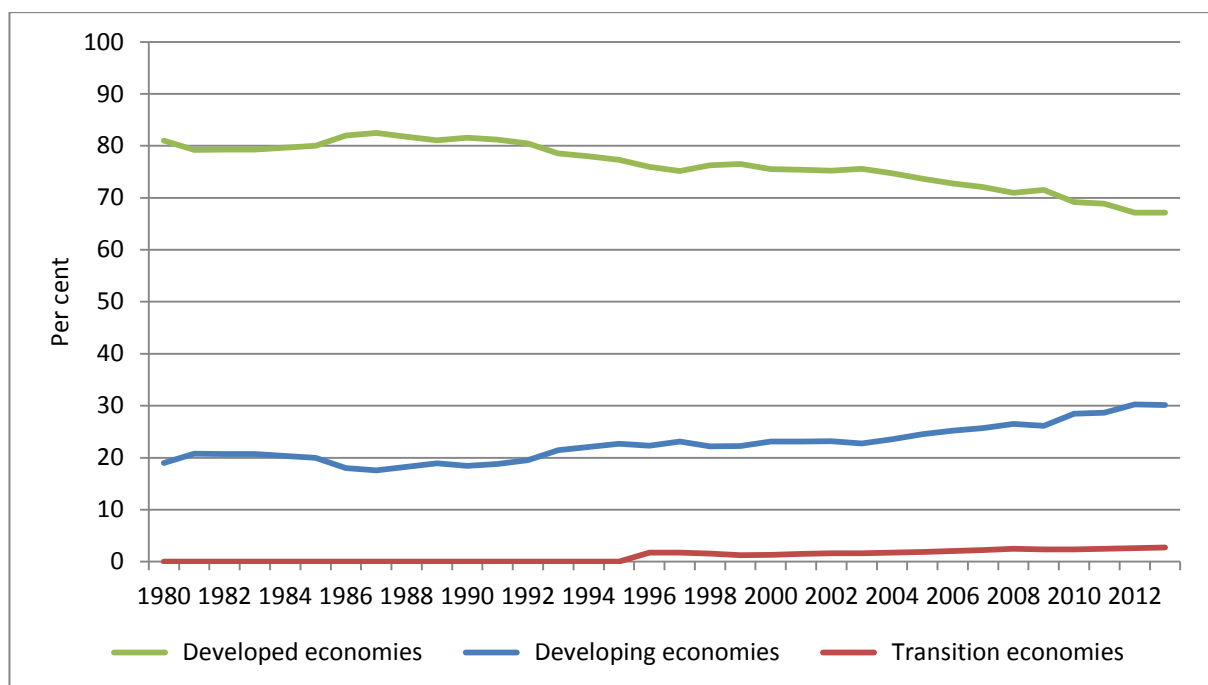
Figure 6: Global trade in services by developed, developing and transition economies 1980-2013



Source: UNCTAD 2014b

Figure 6 shows that developed economies still dominate the services trade to a much greater degree than they do the trade in merchandise goods. The recovery of developed economies' services trade after the Global Financial Crisis has also been stronger

Figure 7: Global trade in services as a percentage of global GDP 1980-2013

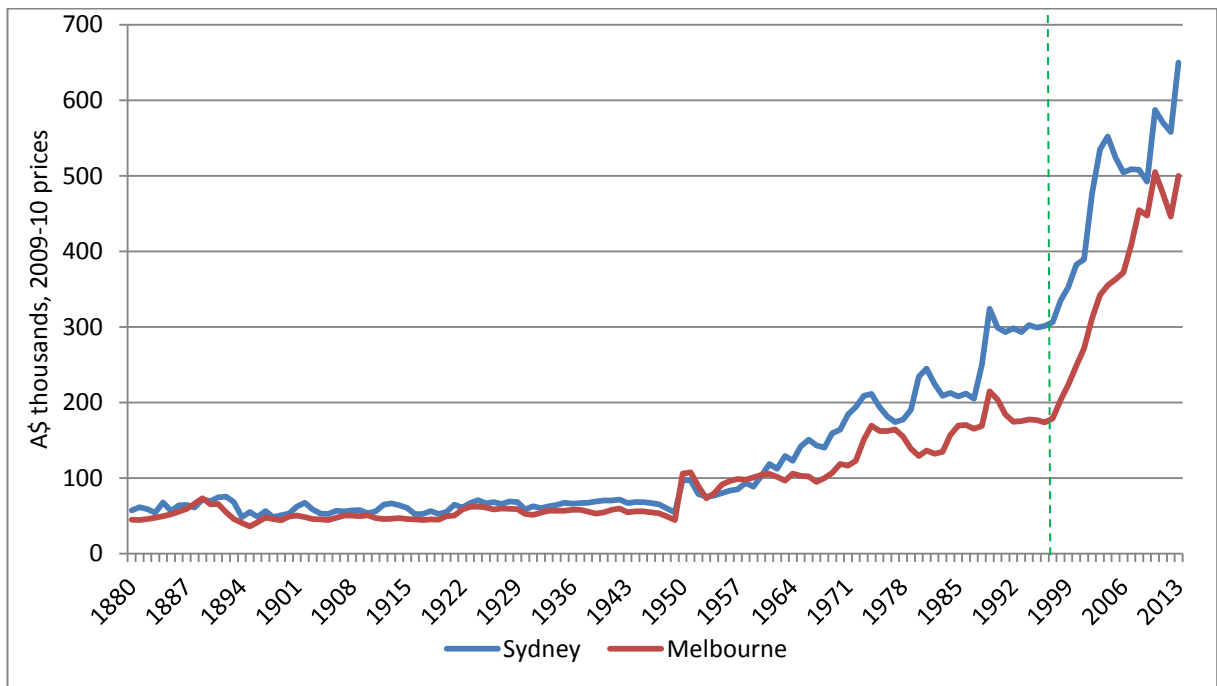


Source: UNCTAD 2014b

Figure 7 presents the same data as a share of the total trade in services. This shows a similar pattern to that of the trade in merchandise goods but the rate of convergence between developed and developing countries has been much less.

International house price movement: an overview

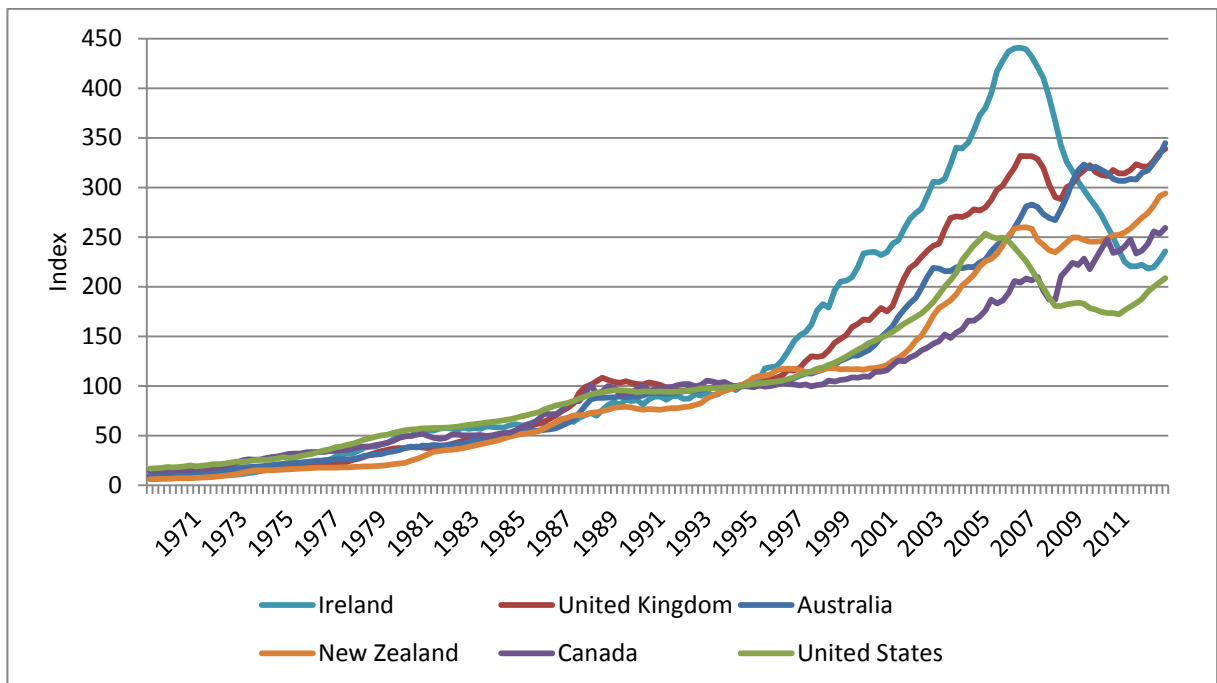
Figure 8: Sydney and Melbourne house prices 1880-2013



Source: Stapledon (2012) 2012 and 2013 years, ABS Cat No. 6416.0 Table 4

Figure 8 shows that there was a step change in Australia’s house prices in 1997 (dashed green line).

Figure 9: Ireland, UK, Australian, NZ, Canadian and US house prices 1970-2013



Source: Bank of International Settlement (2014)

What is often not appreciated is that many countries experienced the same phenomenon. Figure 9 shows that in other Anglophone countries, the pattern of house price movements has been similar to Australia even if the timing and amplitude of price movements differs to a degree. Also of note is that the recent tick up in national house prices in Australia has been general across the Anglosphere.

Perhaps the key lesson from Figure 9 is that international factors are important in house price movements and local factors should not be overweighted. For example, New Zealand and Canada's recent introduction of prudential tools appears to have had little effect when viewed with price movements in similar countries. With the benefit of recently developed long term international finance data sets, it now seems probable that the sudden increase in the use of mortgage backed financial products in the mid 1990's was a key factor in the sharp rise in house prices (Jorda et al 2014).

The following section will explore the dynamics of house price movements as a measure of locational value in these countries in order to draw out some principles that may apply to the Australian context. Each country is introduced with a discussion of the changes to the value and direction of their international trade followed by an analysis of regional house price movement.

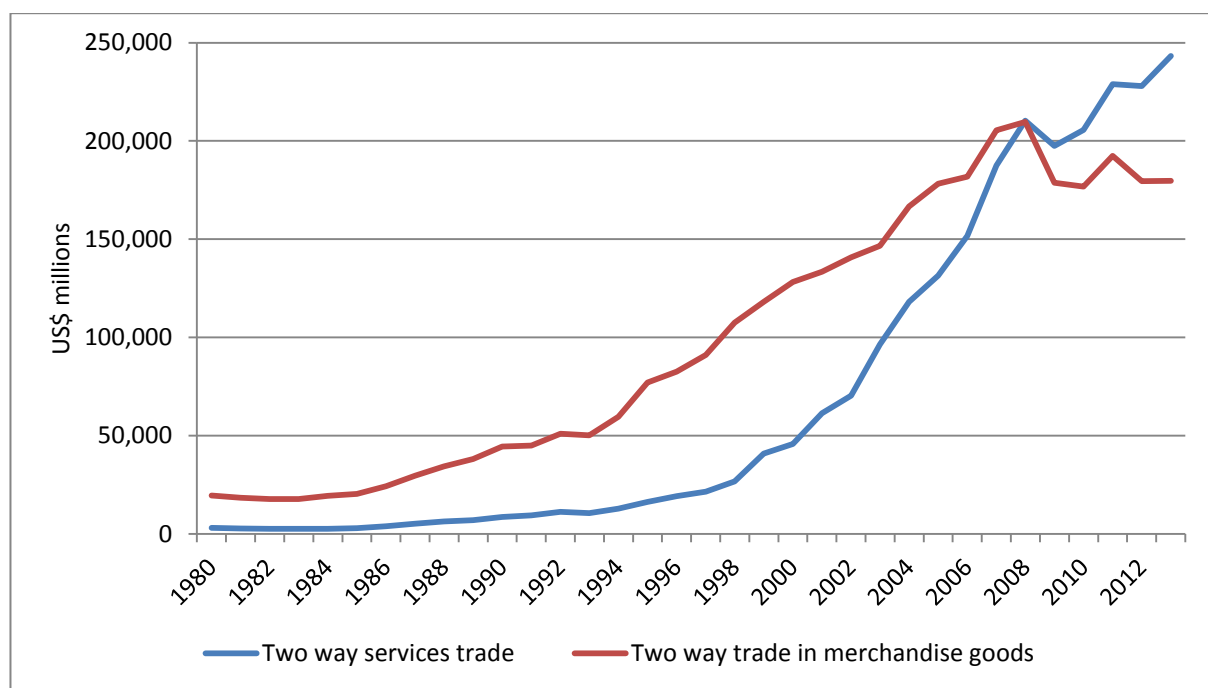
Section 2: International trade and changes in locational values in countries comparable to Australia

Ireland (Republic)

International trade

Ireland is heavily dependent on global trade with the latest World Bank data estimating international trade as 85 per cent of GDP and rising compared to Australia's 34 per cent and falling (World Bank 2014).

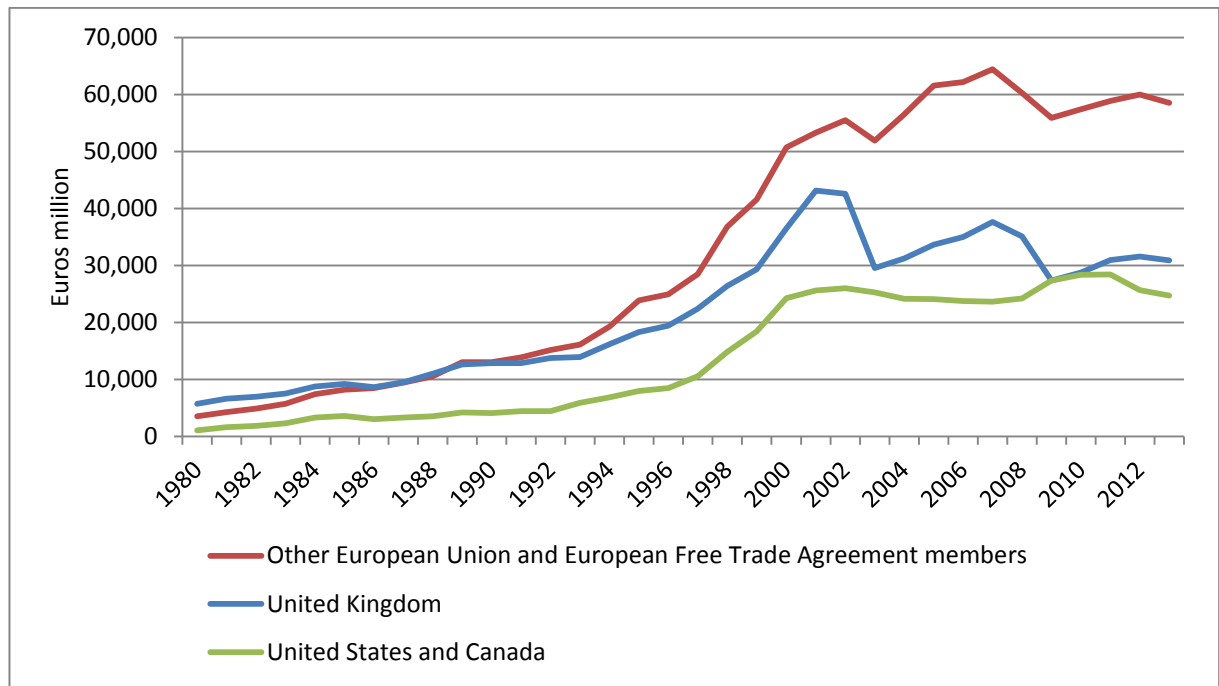
Figure 10: Ireland's two way trade in merchandise goods and services 1980-2013



Source: UNCTAD 2014

Figure 10 shows the flow of trade in merchandise goods and the trade in services since 1980. Compared to most developed countries, Ireland was late to world trade but once it started, trade in goods and especially services, developed with astonishing speed. While trade in merchandise goods faltered after the Global Financial Crisis, the trade in services barely paused its upward trend. Indeed, on the most recent figures, Ireland's international services trade is more than twice as high as Australia's even though it has a less than a quarter of the population (World Bank 2014).

Figure 11: Direction of Irish two way merchandise trade 1980-2013



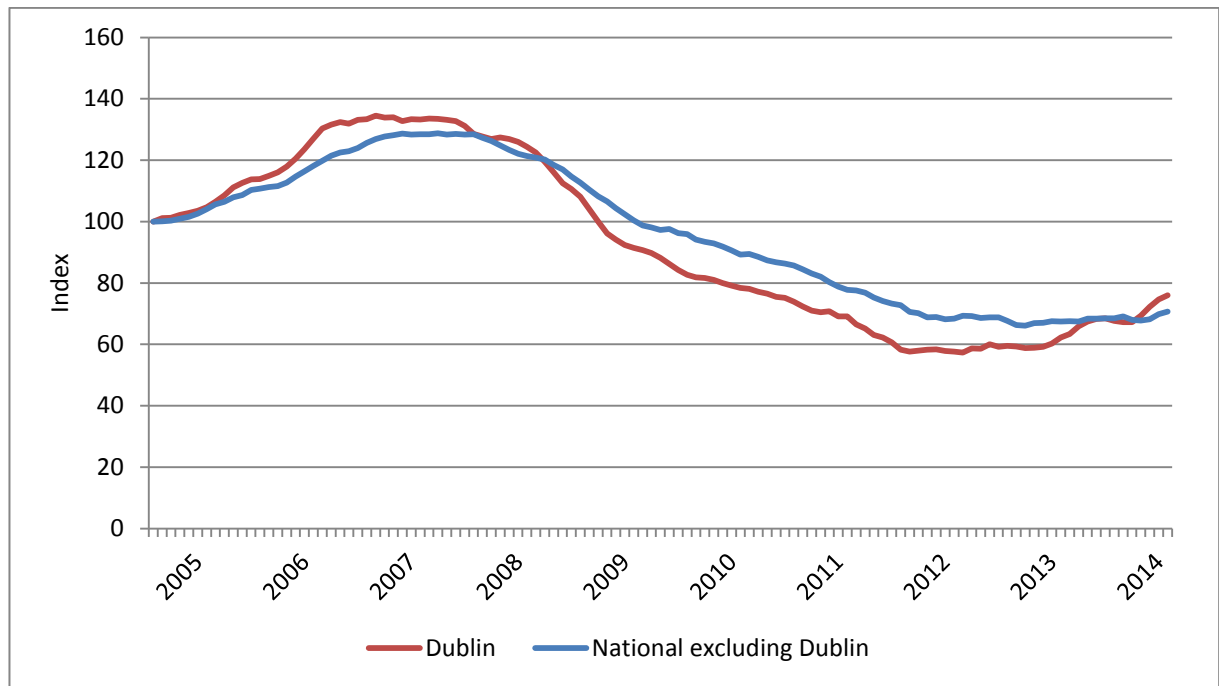
Source: Central Statistical Office 2014a

Figure 11 shows the direction of merchandise goods trade between Ireland and its main trading partners. One of the most noteworthy aspects of the graph is the rise of trade with the rest of the European Union. Trade with the United Kingdom has fallen more than a quarter since its peak in 2001 and trade to North America appears to be in a holding pattern. The increasing trade with the rest of the European Union may reflect the lower friction of trading within the single currency Euro zone (Terborgh 2003).

Relative house price movements

Irish house prices came to global prominence in the Global Financial Crisis when values fell sharply. They were to nearly halve between 2008 and 2012 (Figure 12). The Irish Government’s decision to guarantee its banks, highly leveraged to the Irish property market and themselves heavily indebted to German banks, did much to spread the contagion of the US mortgage backed security crisis to Europe (Ciro 2012). It is worth noting in passing that house prices followed a similar pattern north of the border despite the jurisdictional differences (Lloyds/Halifax 2014). Ireland’s population growth on both sides of the border is the highest in the OECD and is almost all natural increase (OECD 2014). Consequently, there is a strong underlying demand for houses and prices will always be sensitive to regional shortages.

Figure 12: Dublin's and Ireland's average house prices 2005-2014



Source: Central Statistical Office 2014b

Figure 12 shows the path of house prices in Dublin and ex Dublin since the start of 2005. Given the recent Irish tendency for a reversion to the more extensive pre-Famine settlement patterns (Spiller 2012), it is particularly difficult to say where Dublin begins and ends but it is estimated to have a population of around 1.2 million, about a quarter of the country's population of 4.5 million (about the same as New Zealand's) (Central Statistics Office 2014c). In nominal terms, Dublin's median house price has increased by nearly 25 per cent in the last 12 months while most other counties are not increasing or even continuing to decline (Keena 2014).

With the information presented here, it is possible to make the first assessment in this paper of the relationship between locational value and changing patterns of international trade.

Ireland is an island. Except for trade north of the border, every gram of merchandise trade from the Republic has to travel by sea or by air. If the majority of a country's GDP is international trade then the port city that is orientated towards its major trading partners will necessarily have an advantage over those not pointed that way.

Similarly, since service trade is transacted on city to city basis rather than country to country, it has to be anchored by a place where there is a critical mass of Advanced Producer Services (finance, insurance, marketing, legal, advertising etc.) (Derudder et al 2013)⁴. The trade in services also needs a major international airport since a significant proportion of it is conducted face to face. The Port of Dublin is orientated to the EU, the city has a major international airport (Shannon) and it has a critical mass of Advanced Producer Services. Nowhere else in Ireland enjoys these advantages.

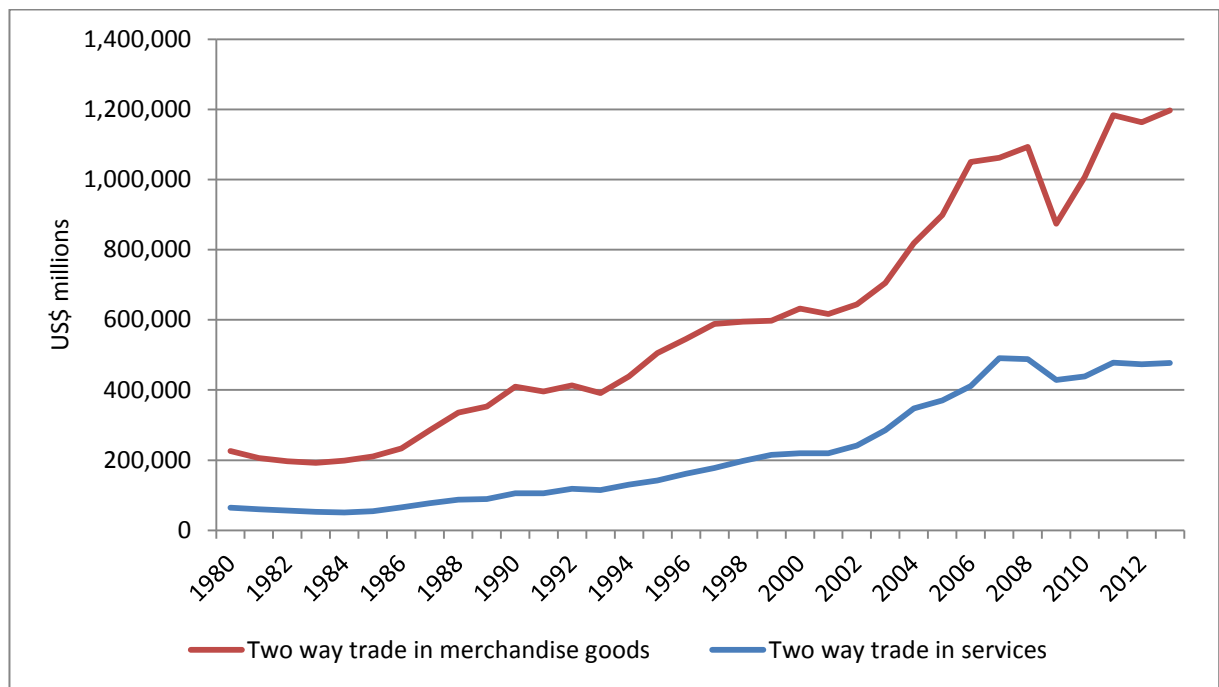
Thus, if trade is an increasing part of the country's GDP, it should be expected that the place where the value flows through should be the place whose locational value, reflected in house prices, increases faster than those that do not have these characteristics. It is the contention of this paper that this is exactly what is happening in Ireland and the other countries examined below.

⁴ The conceptualisation of the international trade network being a network of cities is called 'Cosmopolis' and there is an extensive literature 'ranking' cities in the network. Among the best known are the Global Economic Power Index (Martin Prosperity Index), the Global City Competitiveness Index (The Economist), the Global Cities Index (AT Kearney), the Global Financial Centres Index (Z/Yen Group) and Global City GDP 2025 (McKinsey Global Institute).

Britain

International trade

Figure 13: United Kingdom's two way trade in merchandise goods and services 1980-2013



Source: UNCTAD 2014

The United Kingdom is estimated to be the sixth largest trading nation in the world and international trade in Britain makes up 46.7 per cent of GDP (World Trade Organisation 2014). Interestingly, despite the United Kingdom's position as one of the world's major financial centres, Figure 13 shows that merchandise goods have increasingly dominated over services. The data behind this figure however, shows that the country generally runs a deficit in merchandise goods while the trade in services is in surplus.

The seeming paradox between the United Kingdom's position as a major trader and the relatively small percentage of trade in its GDP reflects the lower value add of Britain's products. In other words, its goods exports tend to be relatively import intensive (Lees 2012). The British motorcycle industry is an example of this. Britain is again a major motorcycle exporter after the previous industry collapsed in 1977. However, whereas in the 1970s almost every single component on British motorcycles was made in Britain, the current machines contain many imported parts. The suspension on current British motorcycles, for example, may be Japanese branded but substantially produced in China. Thus, the current machines have a larger import component i.e. they are more import intensive than those of forty years ago. Consequently, the value add, called VAX, for each new motorcycle loaded on a boat for foreign ports is less because it took more imports to make it.

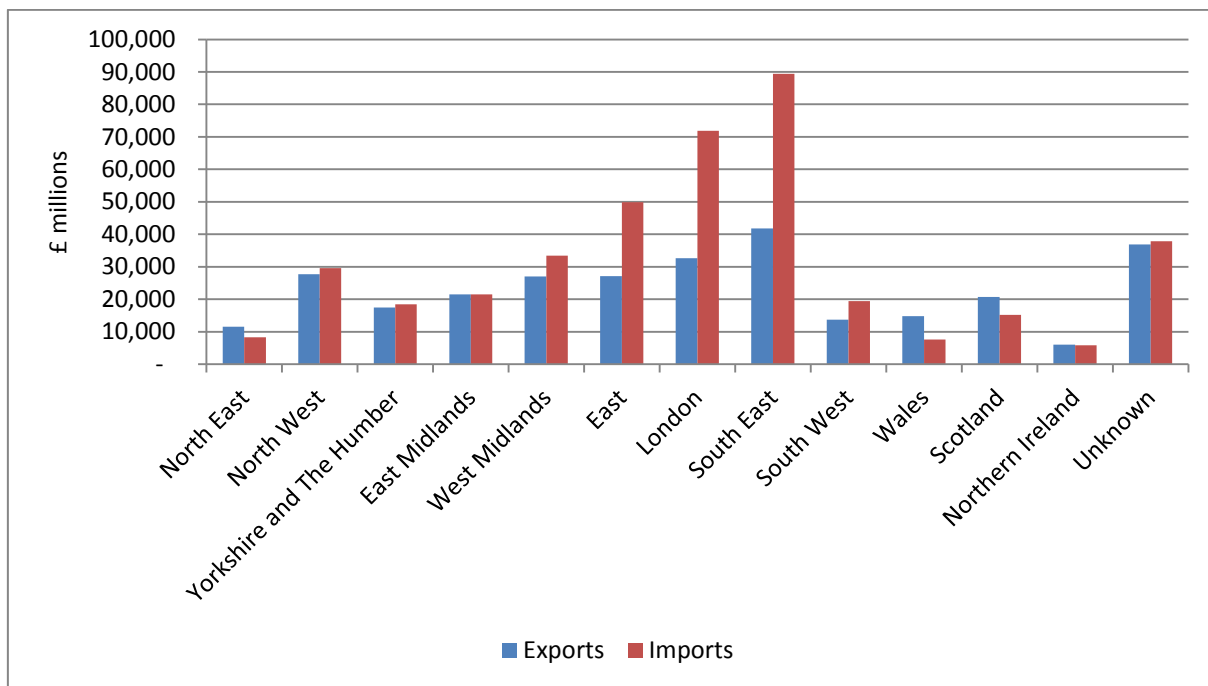
The World Shipping Council ranks Britain as the world's eighteenth largest exporter of containers measured by Twenty Foot Equivalent Units (TEUs) and the seventh largest importer. Felixstowe on the north arm of the Thames estuary is the thirty sixth largest container port in the world and the Port of Southampton 120kms south of London is ranked 87 (Map1). By way of comparison, Melbourne and Sydney are ranked 53 and 65 respectively (Containerisation International 2014).

Map 1: The British Isles showing capitals and major container ports



Most tellingly for British economic geography, is that there is no British port outside the south east in the top global 100. While Liverpool is still an important port for non-containerised trade, it is long way from handling an estimated 40 per cent of total world trade as it did at the start of the nineteenth century (City of Liverpool 2014).

Figure 14: United Kingdom exports and imports by region



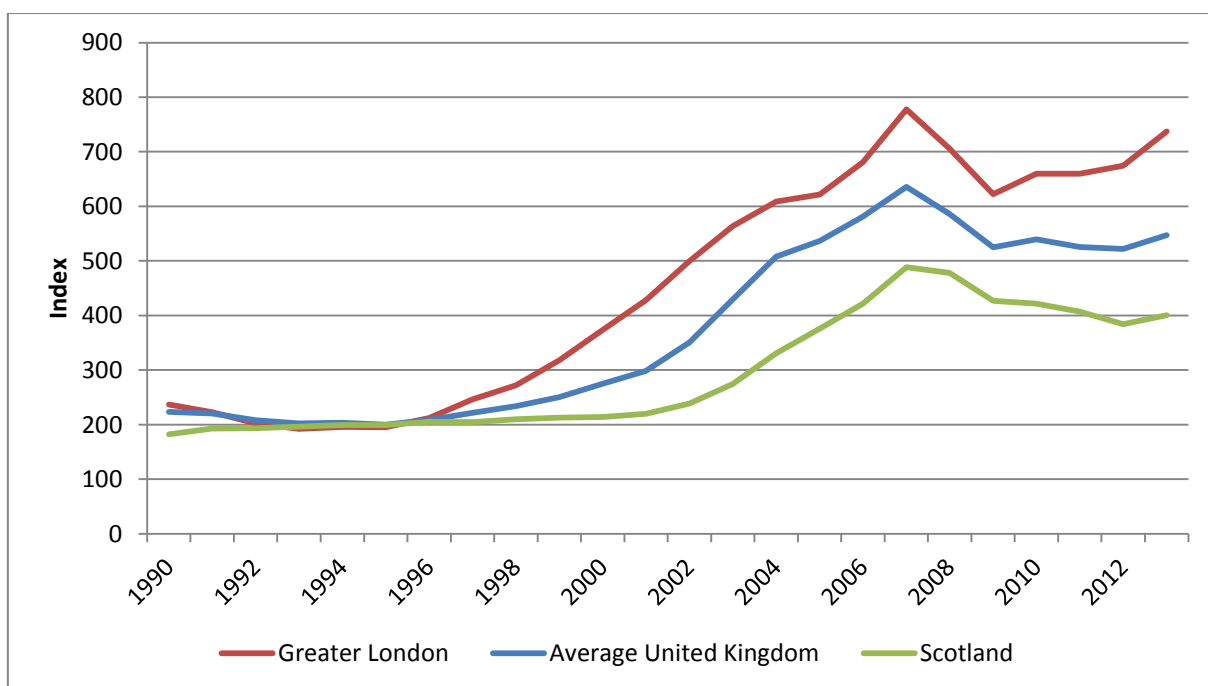
Source: HM Revenue and Customs 2014 (Regions defined by HM Revenue and Customs)

Figure 14 shows that ranked by value, the south-east dominates UK trade and as trade increases, all things being equal, this dominance will also increase, particularly if containerised trade with Asia becomes a larger part of the country’s merchandise trade.

The United Kingdom is the third highest ranked exporter of services in the world with a particularly large finance sector based in ‘The City’ in London (World Trade Organisation 2014). Greater London is also the site of Heathrow, the largest airport in the world measured by international passengers (Airports Council International 2014).

Relative house price movements

Figure 15: Greater London, Scotland and United Kingdom average house prices 1980-2014



Source: Lloyds/Halifax 2014

Figure 15, an index of house prices created by the commercial firm Halifax, shows the widening gap between Greater London and the rest of the country. In particular, it shows the gap has widened further since the Global Financial Crisis. As with Ireland, values in the principal city are recovering strongly while in the rest of the country, growth in house prices remains subdued.

This indicates that like Dublin, Greater London is 'harvesting' the increased GDP due to the rising trade in goods and services and it is unsurprising that this increase in value is reflected by an increase in the entry price in housing people are prepared to pay to access that value.

Canada

International trade

Canada experienced a resource boom at the same time as Australia particularly in gas and non-conventional oil. Much of this is being exported into the north-west United States. Canada's trade with Asia is increasing rapidly at the same time as its economy becomes steadily more intertwined with its southern neighbour. Nearly two thirds of Canada's international trade is with the United States. As well as ship bound trade on the west coast, sea borne trade is also carried across the Great Lakes and the St Lawrence Seaway. Canada also shares a 5,000 km land border with its main trading partner and this is criss-crossed with roads, railway lines and pipelines. Consequently, trade flows on many paths and a concentration on sea ports would be misleading. Therefore trade is discussed at the level of province in this section rather than ports.

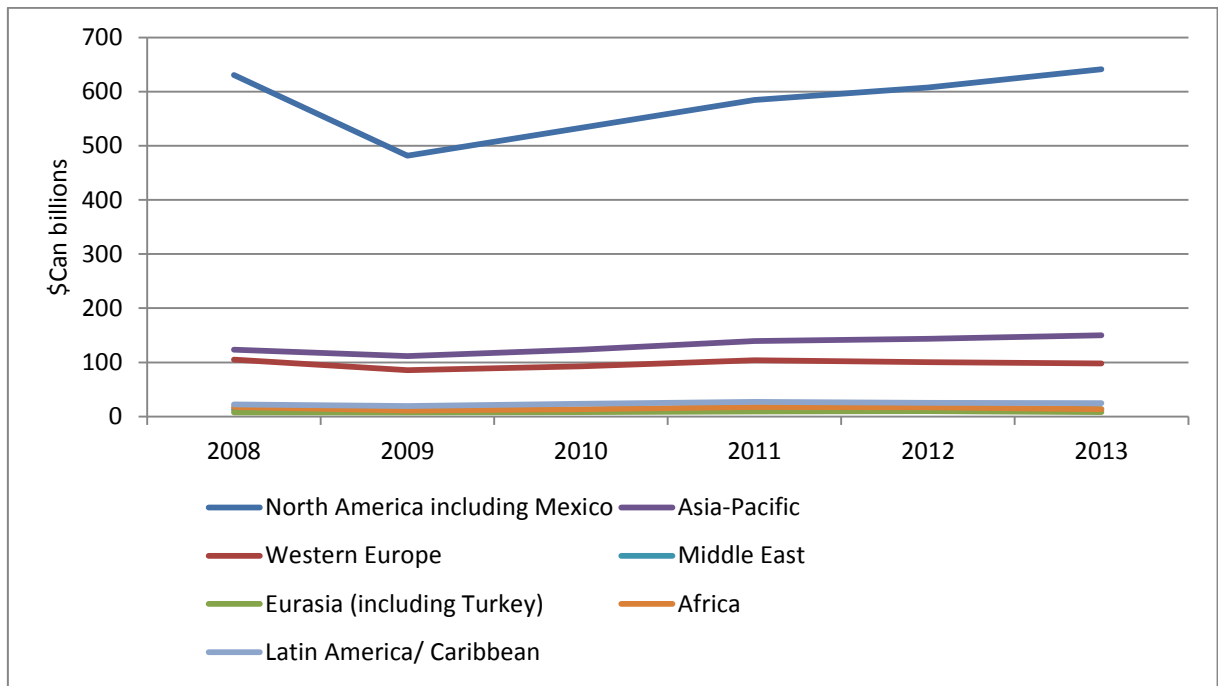
Figure 16: Canada's two way trade in merchandise goods and services 1980-2013



Source: UNCTAD 2014

Perhaps reflecting the presence of this southern neighbour, international trade makes up slightly over half of Canada's GDP (World Trade Organisation 2014). Figure 16 shows that the country's international trade profile is dominated by merchandise goods to an unusual degree for a developed country. It also shows that there has been very rapid growth in this merchandise trade especially from 2002 to 2008.

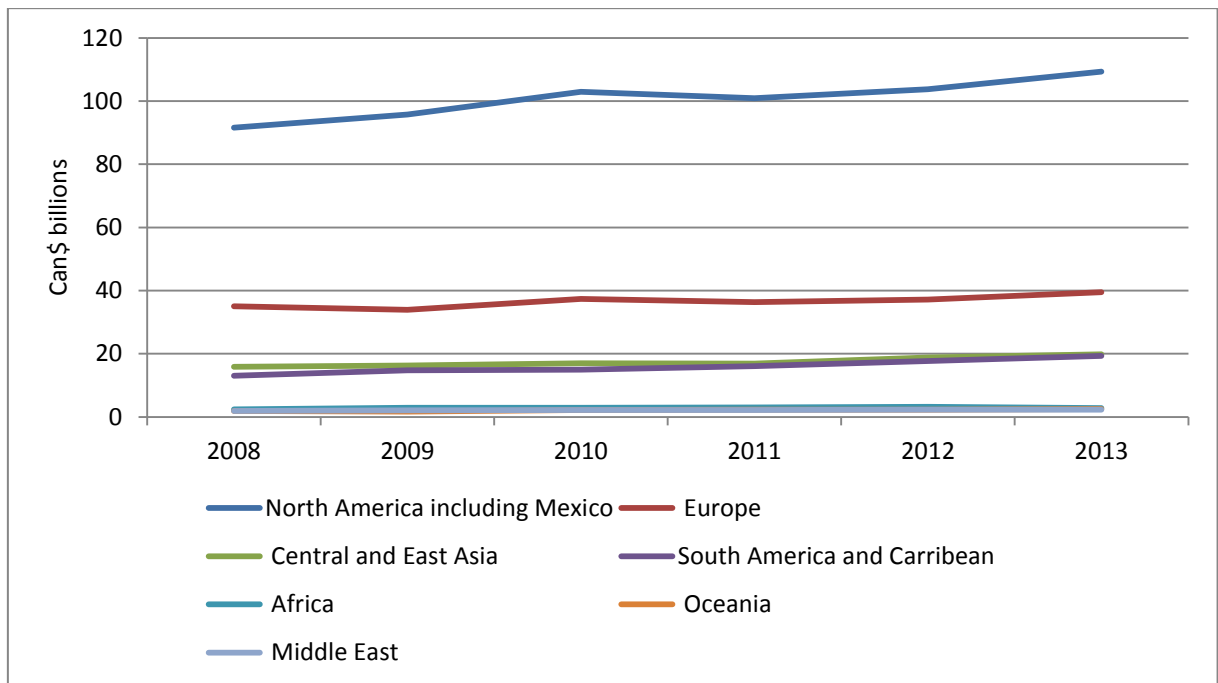
Figure 17: Direction of Canada's two way trade in merchandise goods 2008-2013



Source: Statistics Canada 2014a

Figure 17 shows the dominance of North American Free Trade Agreement (NAFTA) countries in Canada's two way merchandise goods trade. In 2013, nearly two thirds of Canada's trade was with the United States and Mexico. The next largest and the most rapidly growing proportion, is the Asia Pacific.

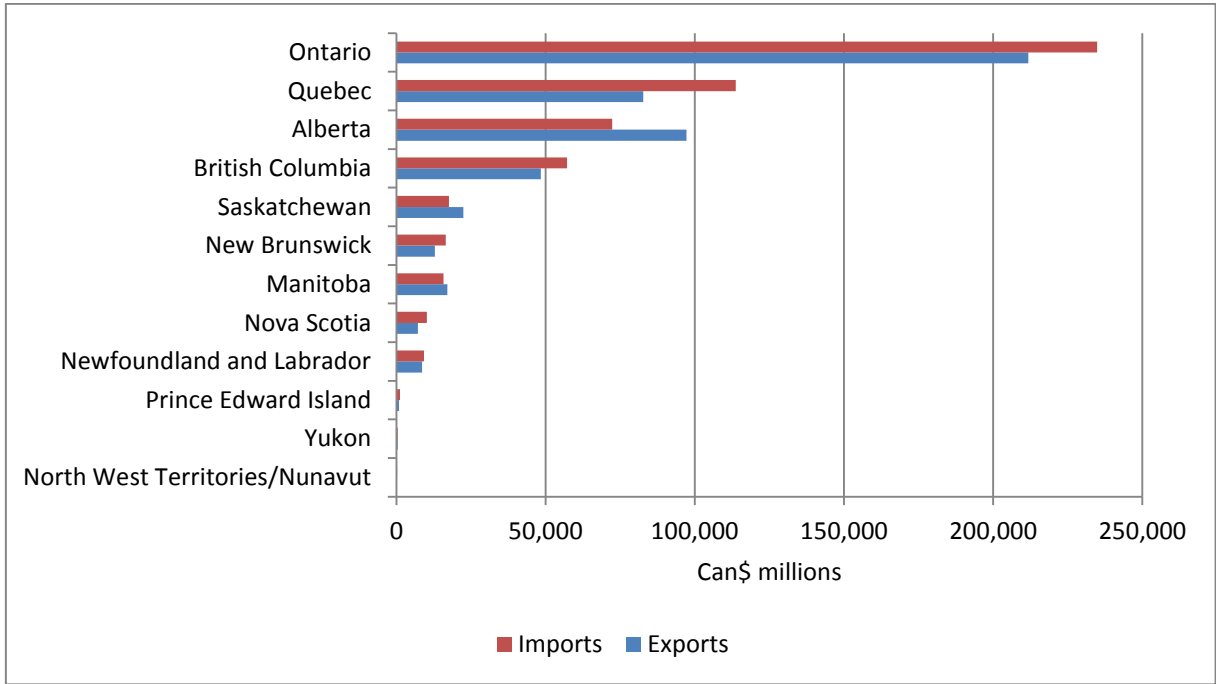
Figure 18: Direction of Canada's two way trade in services 2008-2013



Source: Statistics Canada 2014a

The services trade is not quite so dominated by the United States with trade with Europe making up a little over 20 per cent of the total in 2013 (Figure 18).

Figure 19: Canada's trade in merchandise goods by province in 2012 (Map 2)



Source: Statistics Canada 2014b

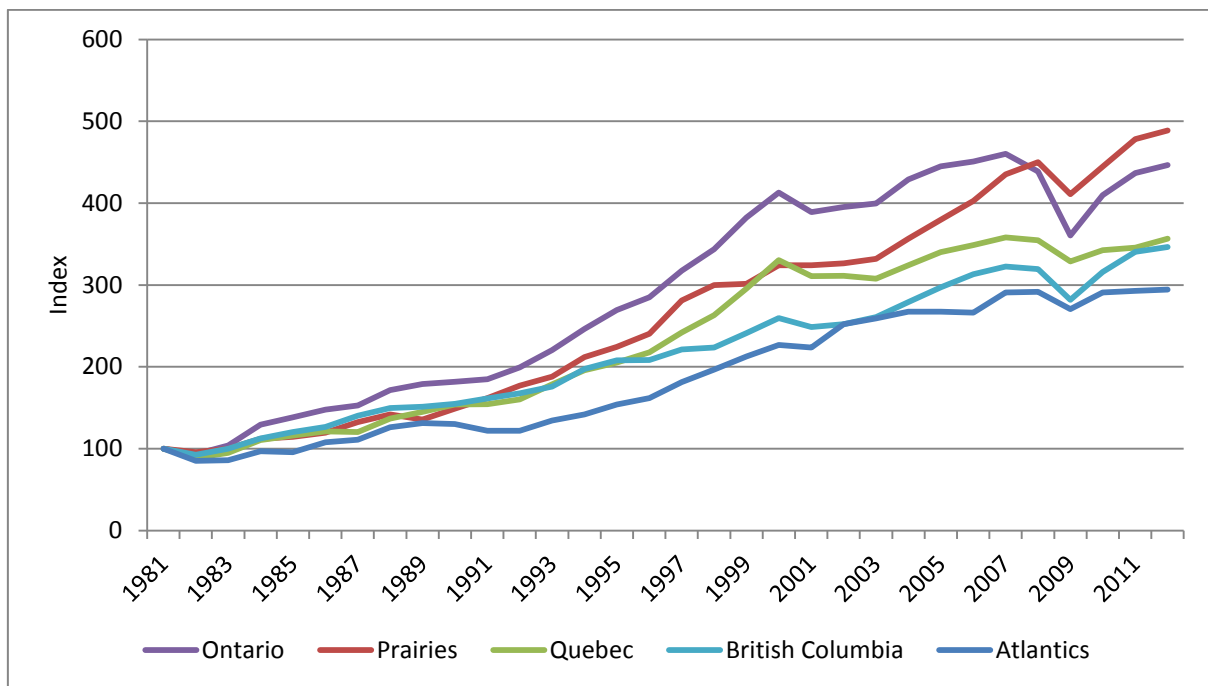
Disaggregating trade by province, Figure 19 shows that while the traditional economic powerhouses of Canada; Ontario and Quebec, are still important, the western provinces are also large trading regions and are mostly running trade surpluses.

Map 2: Canadian provinces and major cities



Esri, DeLorme, GEBCO, NOAA NGDC, and other contributors

Figure 20: Canada's two way trade by province 1981-2012 expressed as an index

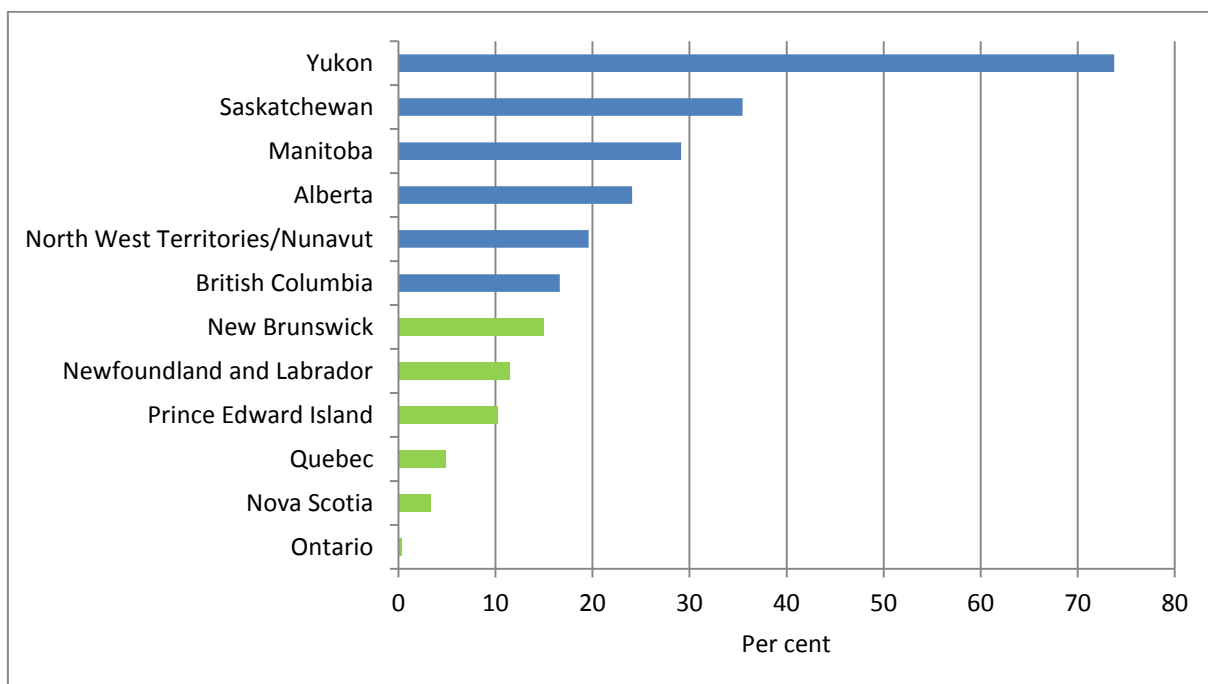


Source: Statistics Canada 2014b

This growth in international trade in western Canada is shown as an index in Figure 20. To more clearly illustrate the change, the Atlantic or Maritime provinces; Prince Edward Island, New Brunswick, Newfoundland and Nova Scotia have been averaged as have the Prairie provinces of Alberta, Saskatchewan and Manitoba.

Noteworthy in the figure, is the contrast between the slow growth in two way international trade in Ontario and Quebec since 2000 and the rapid growth in trade of the Prairies being spearheaded by Alberta over almost the entire three decades of the graph. British Columbia's growth has also been strong since 2000 and its trade, mainly to Asia, has recovered quickly from the Global Financial Crisis while the Atlantic's trade growth has been modest. Indeed, if not for New Brunswick, their curve would have been much flatter.

Figure 21: Percentage growth in two way trade by province and territory 1981-2012

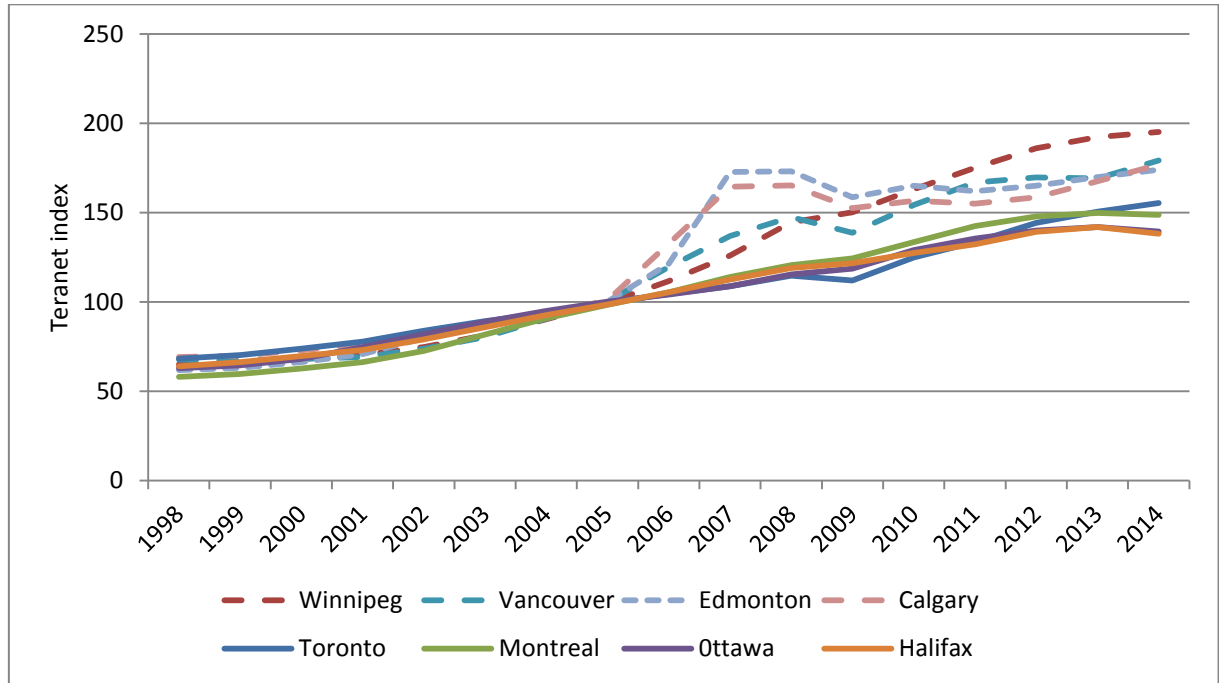


Source: Statistics Canada 2014

Figure 21, showing the percentage of trade growth for all provinces and territories between 2005 and 2012, illustrates that the western provinces (blue bars) are growing more quickly than those in the east (green bars).

Relative house price movements

Figure 22: House prices in major Canadian cities 1998-2014



Source: Terranet/National Bank of Canada 2014

Figure 22 shows that house prices in major Canadian cities tracked together closely until around mid-2005. Indeed, the longer data series (that contains fewer cities) shows that this was the case until at least as far back as 1990. After June 2005, when the index was set at 100, house prices separate into a high growth group and a low growth rate group. The important thing to note is that the high growth cities are all in western Canada (the dashed lines) where the growth in international trade has been the highest and the low growth group (the solid lines) are all in the east where trade has mostly been subdued supporting the proposition that international trade is changing global economic geography.

United States

International trade

Any visitor to the United States is immediately struck by its size and diversity. Thus, when painting a picture of the major changes in its economic geography in the context of a paper such as this it is necessary to paint with a broad brush.

Figure 23: United States two way trade in merchandise goods and services 1980-2013



Source: UNCTAD 2014

Figure 23 shows the trajectory of United States trade in goods and services. Perhaps the most striking aspect of this graph is the sheer size of the international trade as indicated by the scale of the vertical axis especially considering international trade makes up just 24 per cent of the country’s GDP (World Trade Organisation 2014). In raw dollar terms, the graph shows trade in goods is pulling away from services. However, it is worth looking more closely at this.

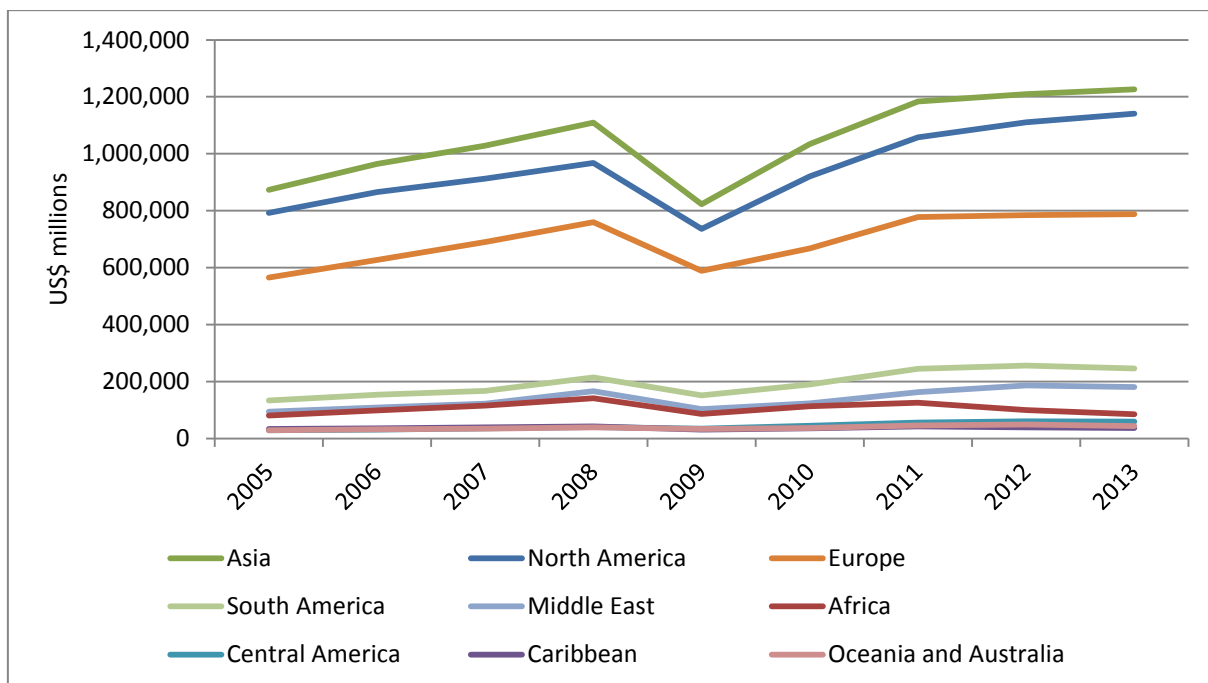
Figure 24: United States imports and exports of goods and services 1980-2013



Source: UNCTAD 2014

Figure 24 shows a widening negative balance for goods trade and also a widening positive balance for services. Given the higher value add for services, the United States trade deficit may be more nuanced than is sometimes presented.

Figure 25: Direction of United States two way trade in merchandise goods 2005-2013



Source: International Trade Administration 2014

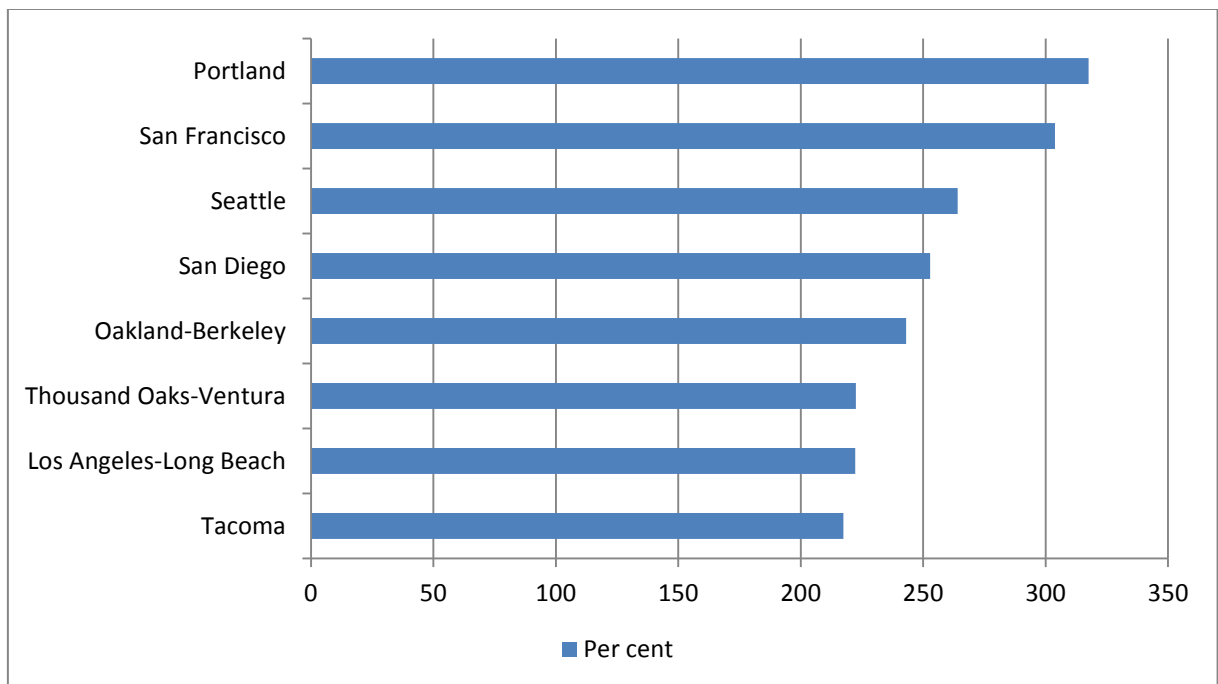
Figure 25 shows US international trade, although still subdued, is slowly recovering from the Global Financial Crisis. The widening gap in United States trade with North America and Asia and that of its other trading partners, particularly Europe, post the crisis is the main feature. The data underlying the graph indicates that for North America, the increase in trade is mainly due to electronic equipment going one way and Canadian oil and gas coming back the other. Both of these activities are concentrated in the west of the United States, particularly the north-west.

Relative house price movements

Map 3: Continental United States showing major sea ports



Figure 26: House price change in United States Pacific port cities 1991-2014

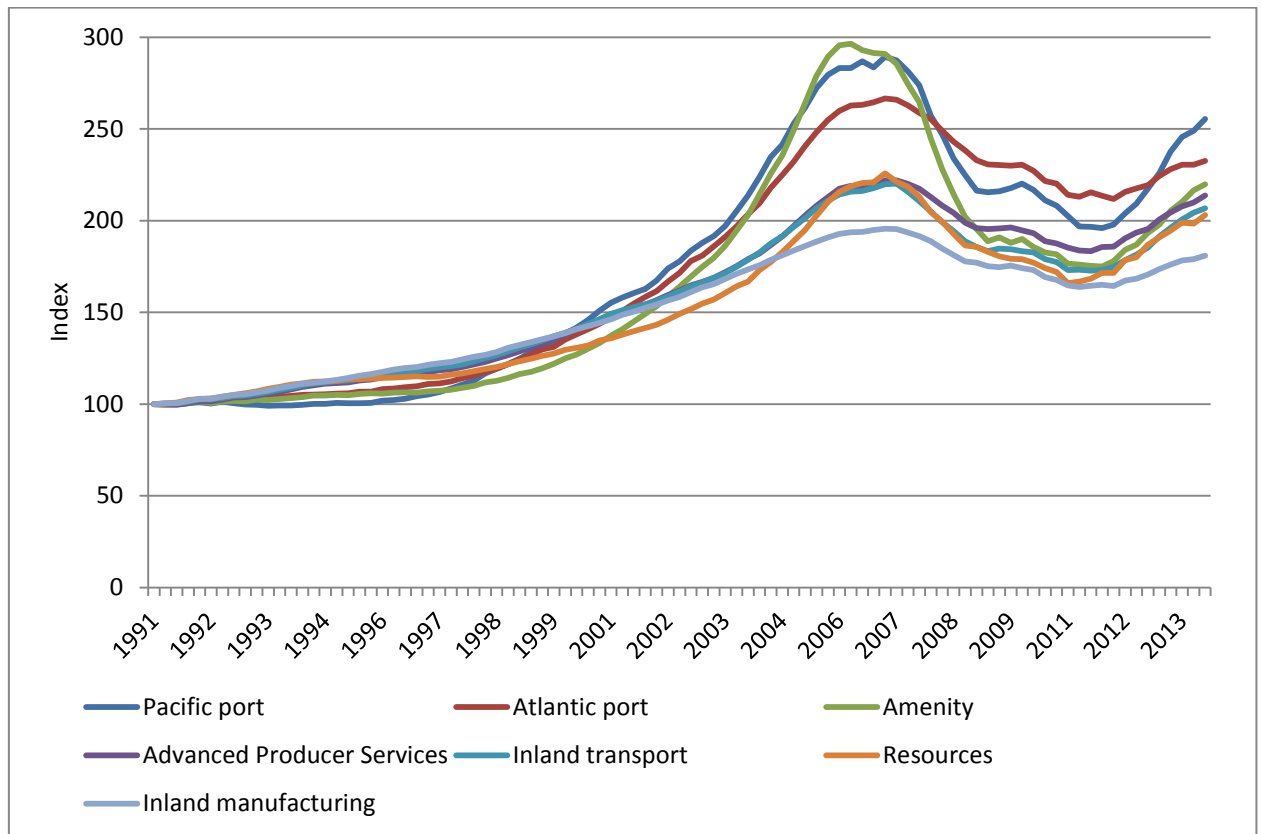


Source: Federal Housing Finance Agency 2014

Reflecting this, values in west coast cities (Map 3) have tended to grow fastest in the north and more slowly as one moves south with the notable exception of Tacoma⁵.

The rise in Asian trade is mainly the increasing amounts of merchandise goods from China where the United States is running an annual deficit of more than US\$ 300 billion (US Census Bureau 2014). Ports on the west coast that are orientated toward the fast growing Asian economies have an inherent geographic advantage over those on the east coast facing slower growing European economies and consequently it would be expected that their locational value would be increasing more rapidly.

Figure 27: United States house prices by city category 1991-2014



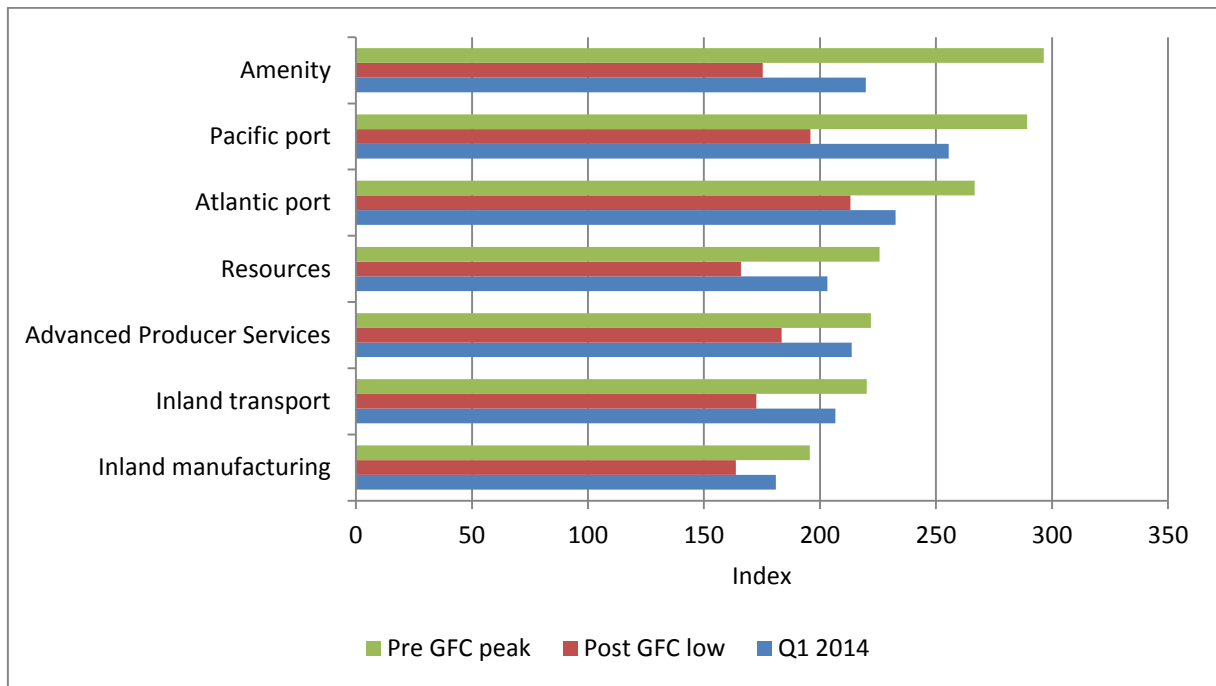
Source: Federal Housing Finance Agency 2014

Figure 27 is an index graph showing the movement of house prices in the largest 100 US cities from 1991, the index year, until June 2014. To better illustrate this movement, the cities have been divided into the seven groups shown on the figure. No city falls completely within any category and cities were classified accordingly to where they mostly fitted. Fine tuning was carried out by plotting each city with its group. Any major aberrations in the plot were placed in a group with a similar pattern.

Immediately noteworthy is that like Canada and the United Kingdom and also like Australia discussed below, the period around 2002-03 marks a major parting of ways for United States house prices. West and East coast port cities began to pull away from the rest as did amenity based cities located mainly in Florida. All categories fell back during the Global Financial Crisis and those that rose the fastest also fell the fastest.

⁵ The dynamics of the Puget Sound ports of Seattle and Tacoma are complex. Draft constraints have been an issue throughout their history as has changing catchment demand brought about by changing product mixes and interstate highway construction. It is by no means certain that the current relatively lower values in Tacoma are permanent.

Figure 28: The effect of the Global Financial Crisis on US house prices by city category



Source: Federal Housing Finance Agency 2014

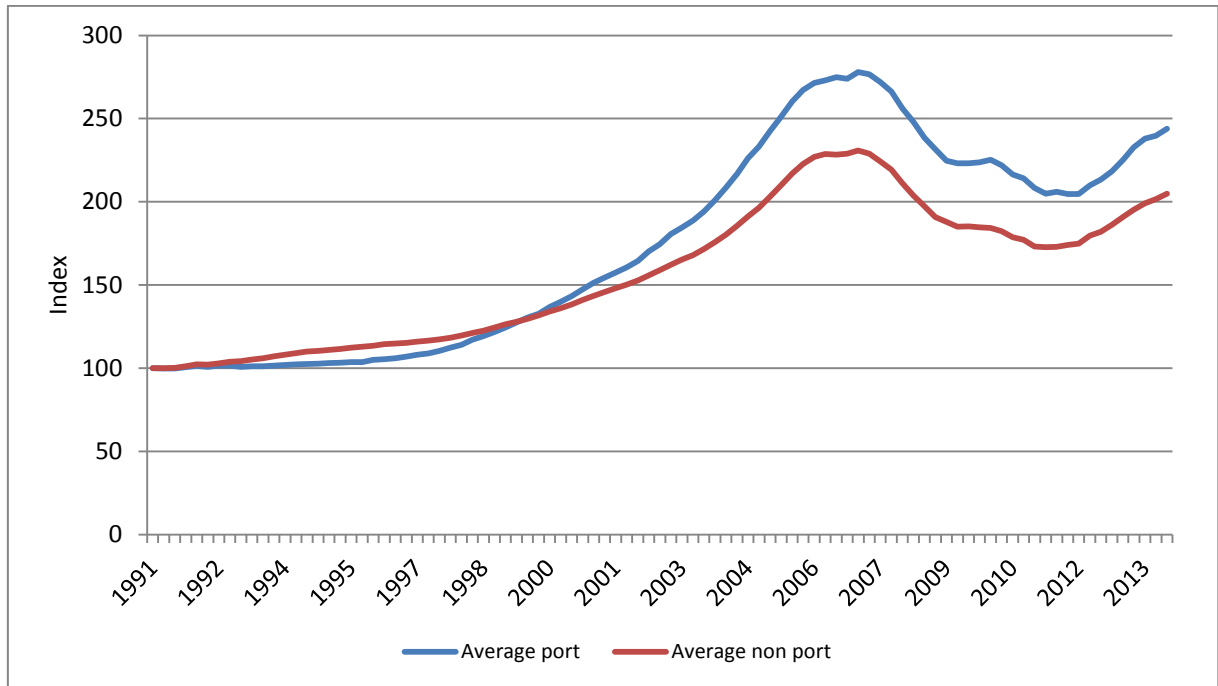
This is shown graphically in Figure 28.

There are a number of points of interest in what has happened to United States house prices after the Global Financial Crisis. As an overall comment, recovery in the United States has been subdued by comparison with other English speaking countries (Figure 9). The manufacturing cities' situation has been well publicised but what is often not realised is that resource based cities and those critical to inland transport have also had modest recoveries to date.

Perhaps the most surprising aspect of Figure 27 and one that may say the most about the 21st century city is the flatness of price growth in the Advanced Producer Services cities. Many of these cities are based around major educational institutions and/or are key research centres particularly in electronics and materials. Some are important centres of public and private administration. According to a major strand of urban theory these cities should be growing strongly (Florida 2002). Their rather lacklustre performance compared to the port cities suggests that international trade may be a more important indicator of locational value changes than the concentration of Advanced Producer Services.

Before leaving this graph, the trajectory of the amenity group is of interest. Many cities in this group are in Florida where the virtual eradication of yellow fever (Gordon 2004) and the availability of cost effective air conditioning (Arsenault 1984) in the 1950s made these cities attractive to holiday makers and retirees in a phenomenon known as 'sun-belt' growth. Others however, are the so called 'collar' cities around Chicago that offer high amenity within commuting distance of the city and similar cities around Long Island, New York. Like many such cities around the world, including in Australia, the pre Global Financial Crisis growth was as spectacular as the fall afterwards. However, they appear to be recovering strongly, suggesting that amenity may loom larger in the economic value of locations as it becomes scarcer.

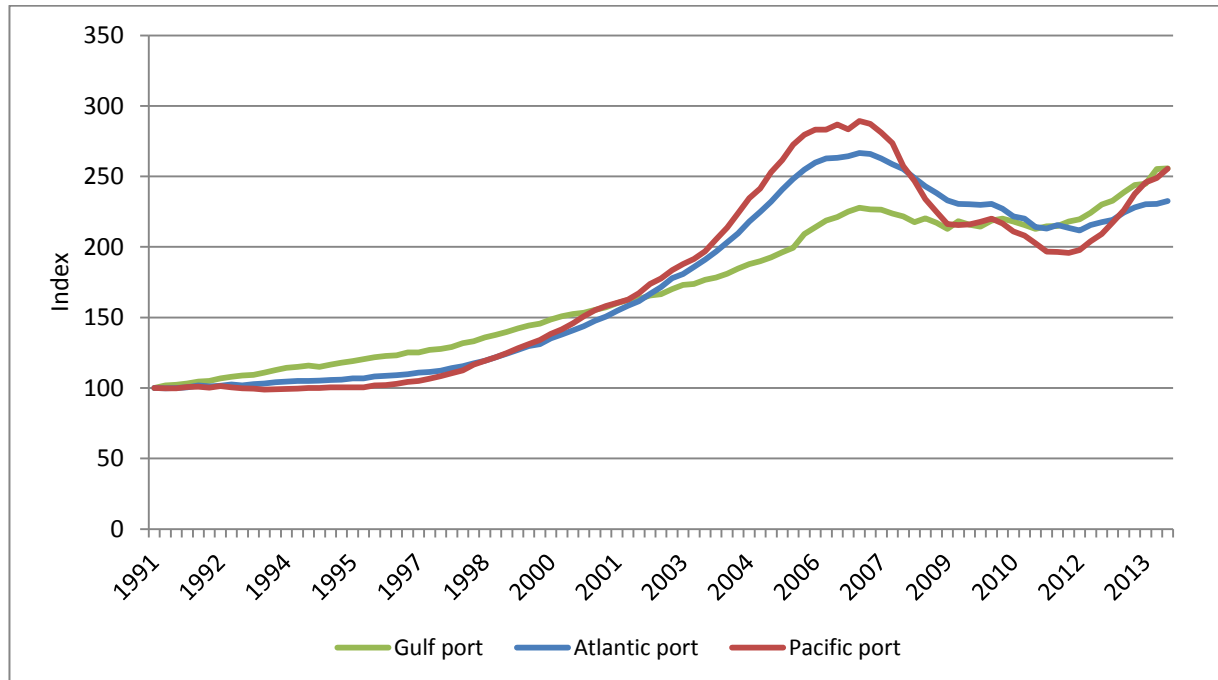
Figure 29: Average house prices for United States port cities and non-port cities 1991-2014



Source: Federal Housing Finance Agency 2014

Figure 29 shows that the locational values of US cities with ocean ports are increasing faster than those without from 2000 to the Global Financial Crisis. The difference in values has been largely maintained since.

Figure 30: Average house prices in Atlantic, Pacific and Gulf port cities 1991-2014



Source: Federal Housing Agency Finance Agency 2014

Before the Global Financial Crisis, the prices in the west coast port cities were growing more quickly than those on the east coast, due in part to a real estate bubble in Californian cities. However, as shown by Figure 30, post 2008, the port cities on the Pacific coast are pulling away from the Atlantic port cities again, this time decisively, reflecting the increase in the value of trade with Canada and Asia compared to that of Europe. The Gulf ports, Houston and New Orleans, have also benefited from the changing geography of US trading patterns. Their short distance from the Panama Canal means they can trade cost effectively across

both Atlantic and the Pacific Oceans as well as benefiting from a favourable orientation to the increasing trade with South America.

New Zealand

International trade

New Zealand has been quietly undergoing a major restructure of its international trade over the last decade that is having a major impact on its economic geography.

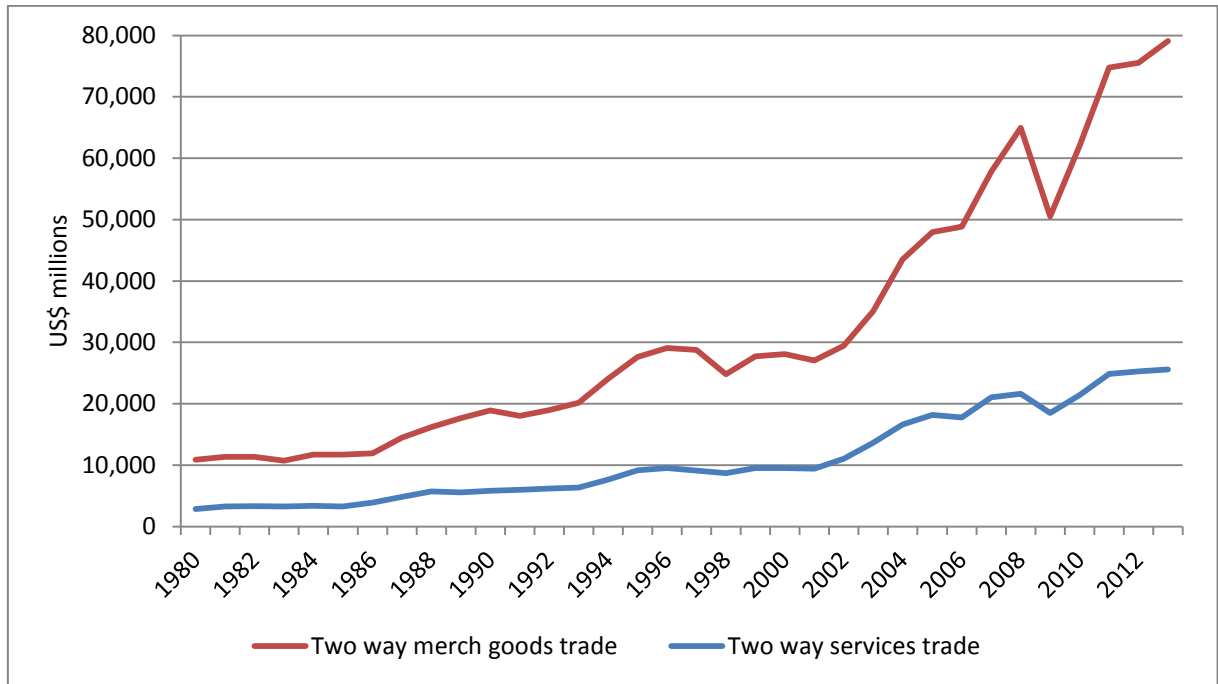
Figure 31: New Zealand two way trade in merchandise goods 1841-2014



Source: Statistics New Zealand 2014a, 2013 and 2014 years Table: HOTP

Figure 31 shows the transformation of New Zealand’s international trade from the mid nineteen seventies. Aside from the occasional reverse, the rise has been relentless and shows little sign of tapering off.

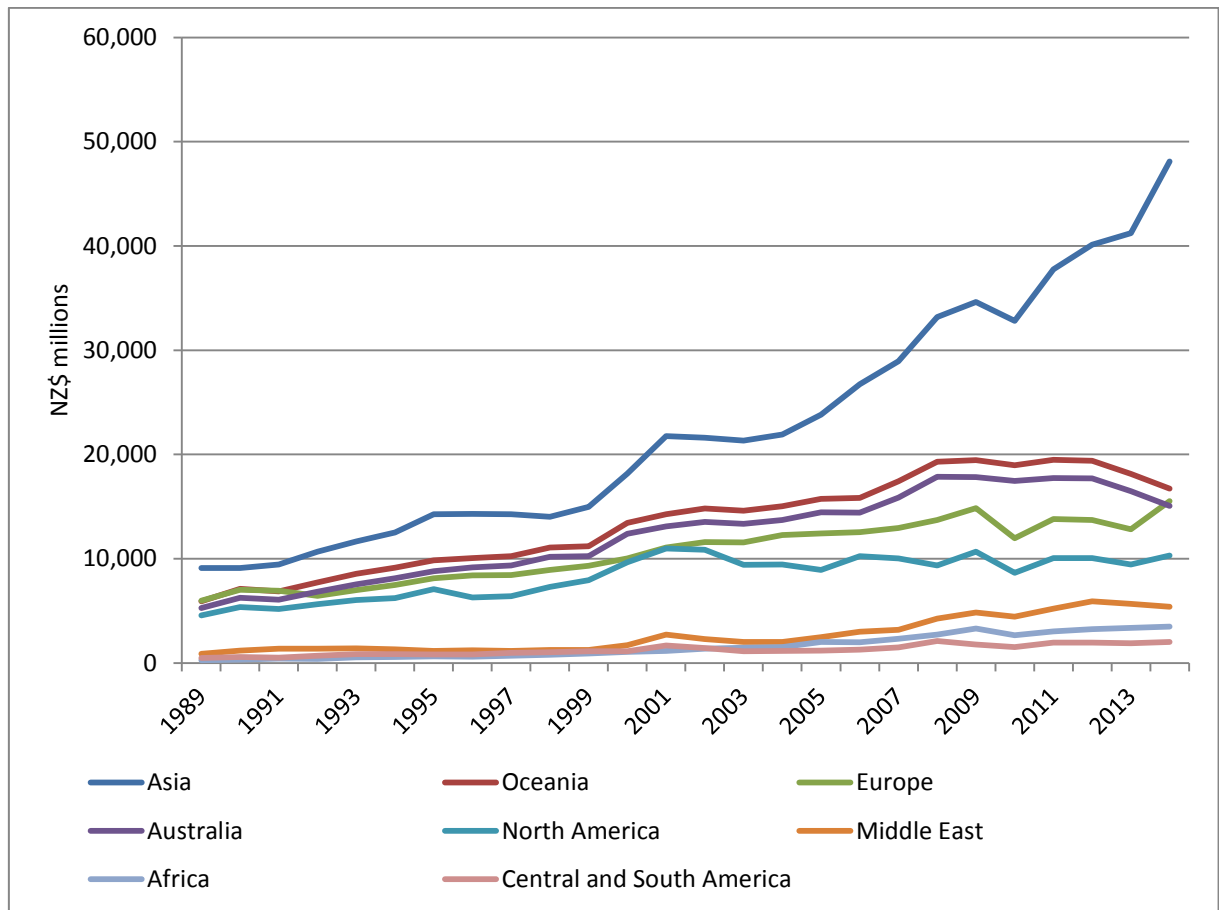
Figure 32: New Zealand two way trade in merchandise goods and services 1980-2013



Source: UNCTAD 2014

Figure 32 shows the trajectory of New Zealand’s trade in merchandise goods and the services trade over the last three decades. Merchandise goods trade has been rising faster than that of services and has recovered strongly from the Global Financial Crisis.

Figure 33: Direction of New Zealand merchandise trade 1989-2014



Source: Statistics New Zealand 2014b

Figure 33 shows there has been a structural shift in the direction of New Zealand’s international trade over the last decade. The data underlying this graph indicates that increased trade with China has been the main dynamic and indeed by some measures China replaced Australia as New Zealand’s most important trading partner in 2013.

Relative house price movements

Map 4: New Zealand showing major cities

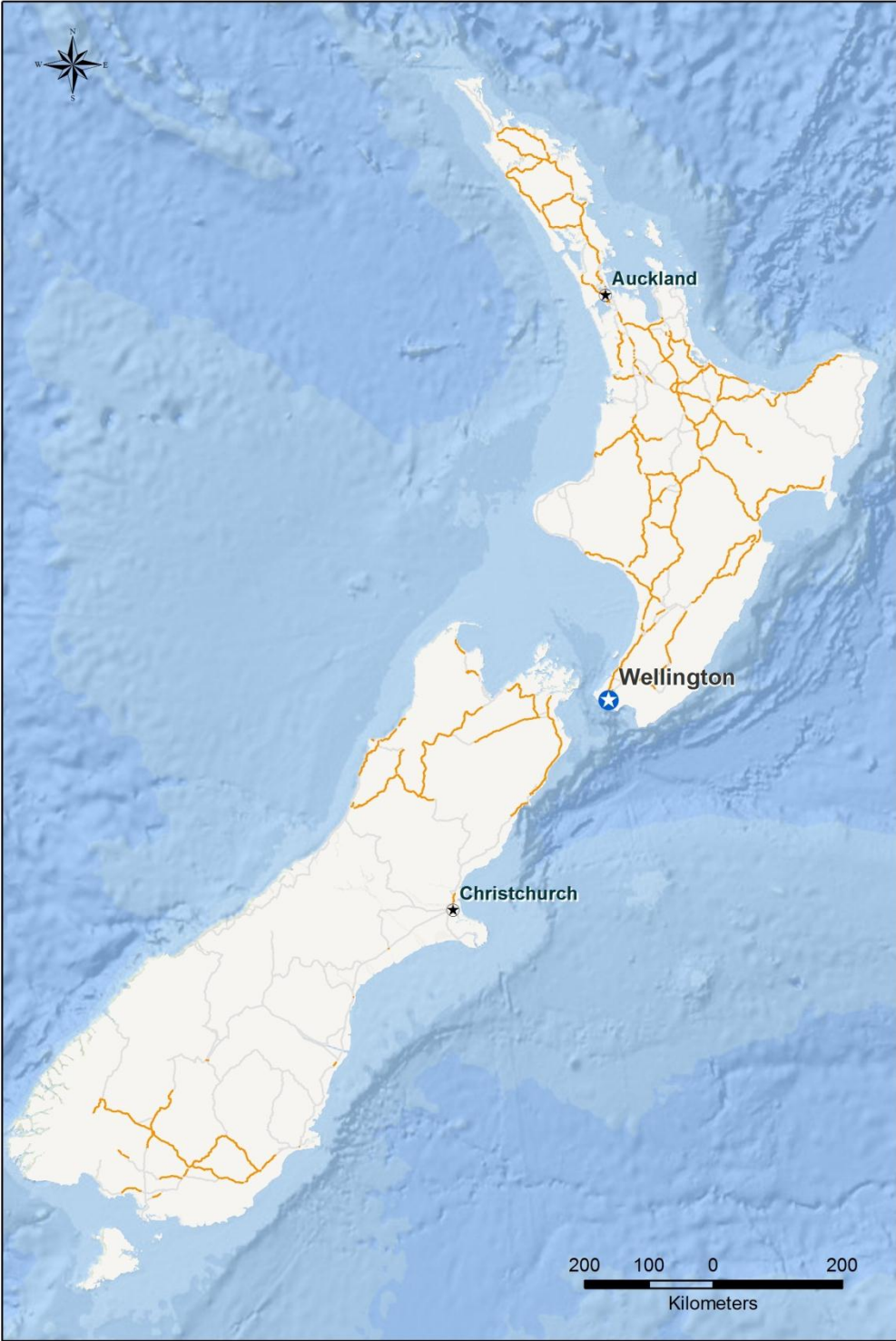
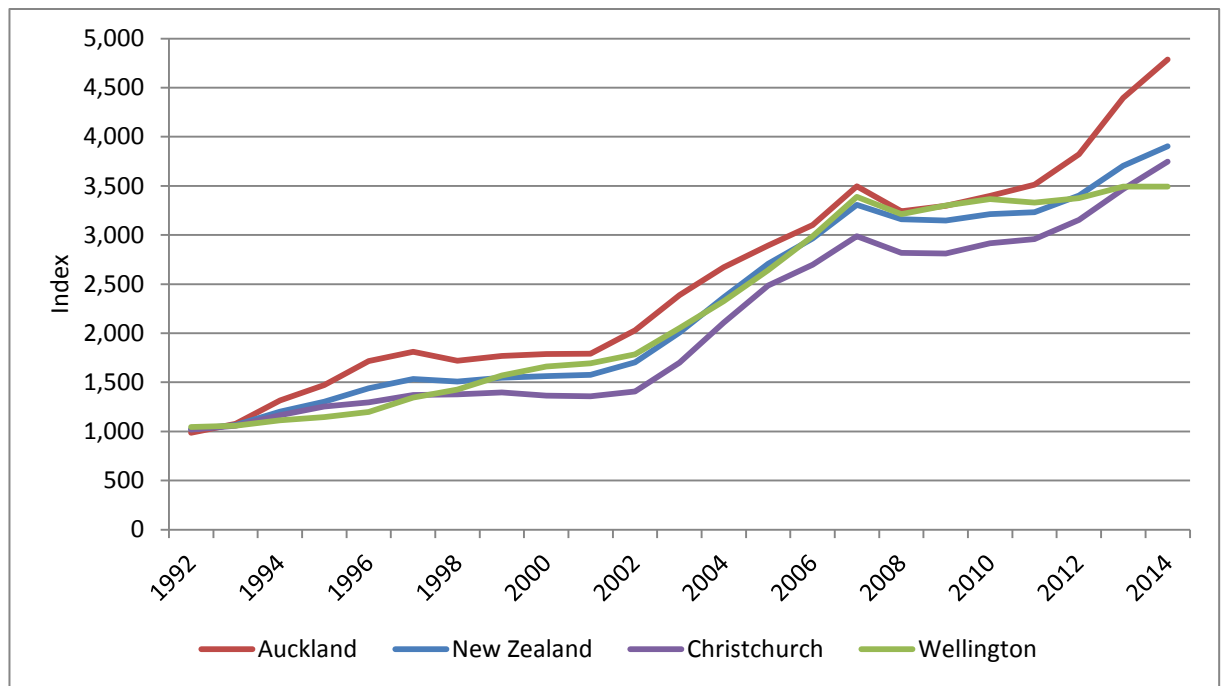


Figure 34: Auckland, Christchurch, Wellington and New Zealand average house prices 1992-2014



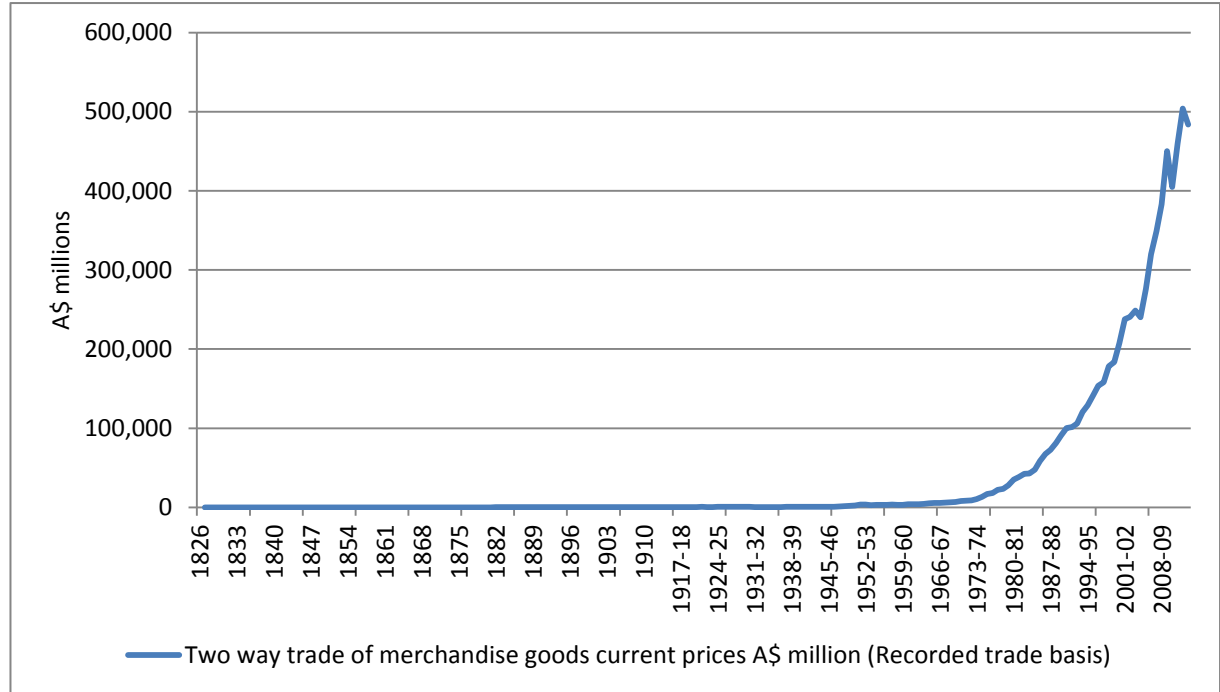
Source: Unpublished data used by kind permission of the Real Estate Institute of New Zealand

Cities with ports servicing the expanding north Asian trade will enjoy an increasing advantage over others, particularly if they also have a critical mass of Advanced Producer Services and a major international airport. For New Zealand, this means Auckland. Figure 34 shows this increasing economic value of the city being reflected in house prices as the city begins to pull away from the rest of New Zealand. The figure underestimates the position somewhat, with average house prices in inner city Auckland reaching levels well above the Auckland average (Auckland Council 2014).

Section 3: Australia's international trade and changes in its economic geography

International Trade

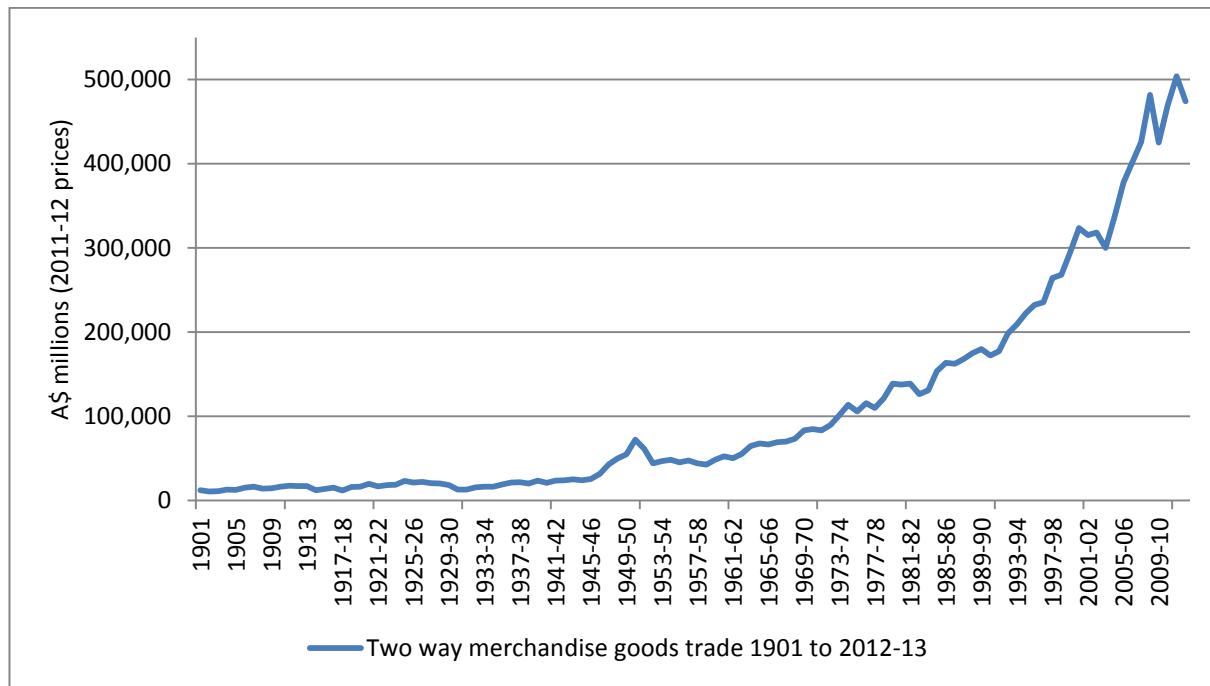
Figure 35: Australian two way trade in merchandise goods 1826 to 2012-13



Source: DFAT 2014a

Figure 35 shows the magnitude of the change in international trade since the mid-1970s that has transformed the Australian economy in the same way it did New Zealand. The figure also goes some way to explain the economic, social and political turmoil in the 1970s and 1980s, since it was by no means clear to people at the time that Australia's economy was internationalising as was much of the rest of the world.

Figure 36: Australia's two way trade in merchandise goods 1901 to 2012-13



Source: DFAT 2014a

Figure 36 shows the trajectory of international trade since 1901, this time adjusted for inflation, tracing an almost exponential curve through the twentieth century.

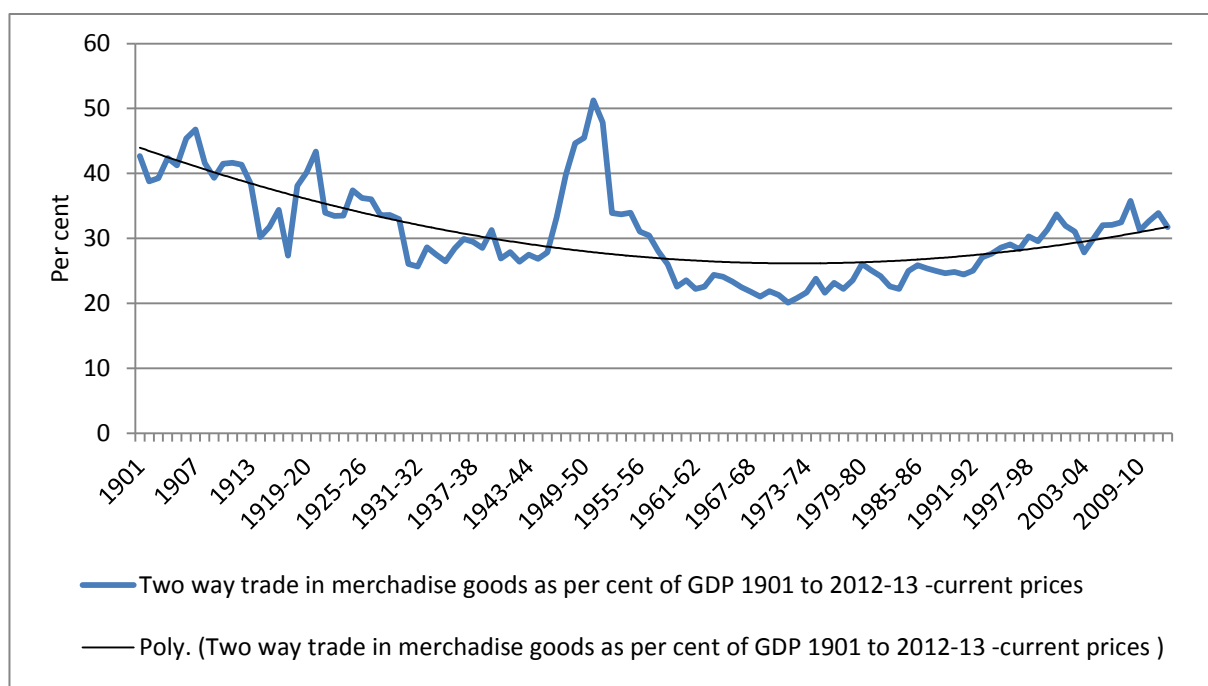
Figure 37: Two way trade in merchandise goods per capita 1901 to 2012-13



Source: DFAT 2014a

Figure 37 shows the same data this time expressed as the value of merchandise trade per capita. In 1901 it was \$3,192 a head. By 2012-13 it had grown more than sixfold to \$20,325.

Figure 38: Two way trade in merchandise goods as a per cent of Australia's GDP 1901 to 2012-13



Source: DFAT 2014a

Figure 38 shows how Globalisation Marks I and II played out in the Australian economy between 1901 and 2012-13. Note the figure plots merchandise trade only. There are three elements of this figure that are particularly noteworthy. The first is that despite the internationalisation of the Australian economy since the 1970s, there is still a long way to go until it recovers the position it had at the start of the twentieth century when in 1907 internationally traded merchandise goods made up 47 per cent of the nation's GDP. At its lowest point, 1968-69, it was down to 21 per cent before slowly rising to 32 per cent in 2012-13.

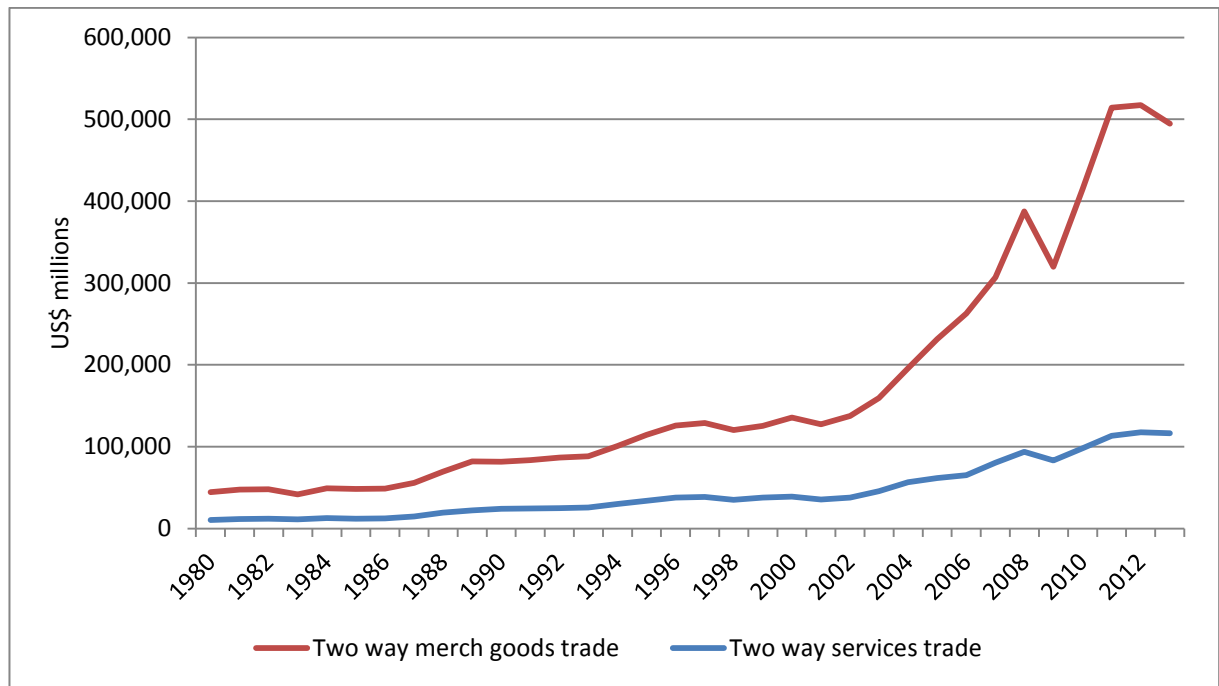
As an aside, knowing this makes it easier to understand why the Australian colonies embarked on a mutually ruinous race using borrowed money to build railways to connect far flung parts to their sea ports and cut off trade flowing to other colonies' ports in the second half of the nineteenth century. Railway building on this scale made sense if trade through ports was nearly half of a colony's Gross State Product or at least it made sense until credit tightened, triggering the 1890s Depression, perhaps the deepest Australia has ever had. The Depression was a major factor in the financially chastened colonies agreeing to form a Commonwealth but the frantic railway building that was the Depression's major cause⁶ also left a legacy of a rail system where much of it was in the wrong place for later patterns of transport demand. Substantial sections were decommissioned in the last quarter of the twentieth century (Quinlan and Newland 2000).

The second noteworthy element of Figure 38 is the magnitude and short duration of international trade booms in the years after both World Wars but particularly the Second, as Australia supplied raw materials, food, fibre and manufactured goods into the recovering economies of Europe. This indicates that Australia had the productive capacity to export much more than it subsequently did. Part of the reason for this was a further rise in protectionism after World War Two. Protectionism was more pervasive in Australia than many of its trading partners and lasted longer (Dyster and Meredith 2012, McLean 2013) which may explain why the next figure shows that Globalism Mark II was later and shallower in Australia when compared to the global context.

The third noteworthy element of the figure is the changes in merchandise goods as a proportion of Australia's GDP seems to track very closely the fall and then the rise of the population in the inner parts of Australia's capital cities. The population of inner Melbourne for example is only now reaching its population of 1891 (Turner 1978, ABS 2012).

⁶ Aside from electorally driven investment in non-productive infrastructure, exposure of highly leveraged financial institutions to an overheated housing sector and falling marginal returns on resourced based investment are usually considered as proximal causes of the 1890s Depression (Sinclair 1976, Kent 2011).

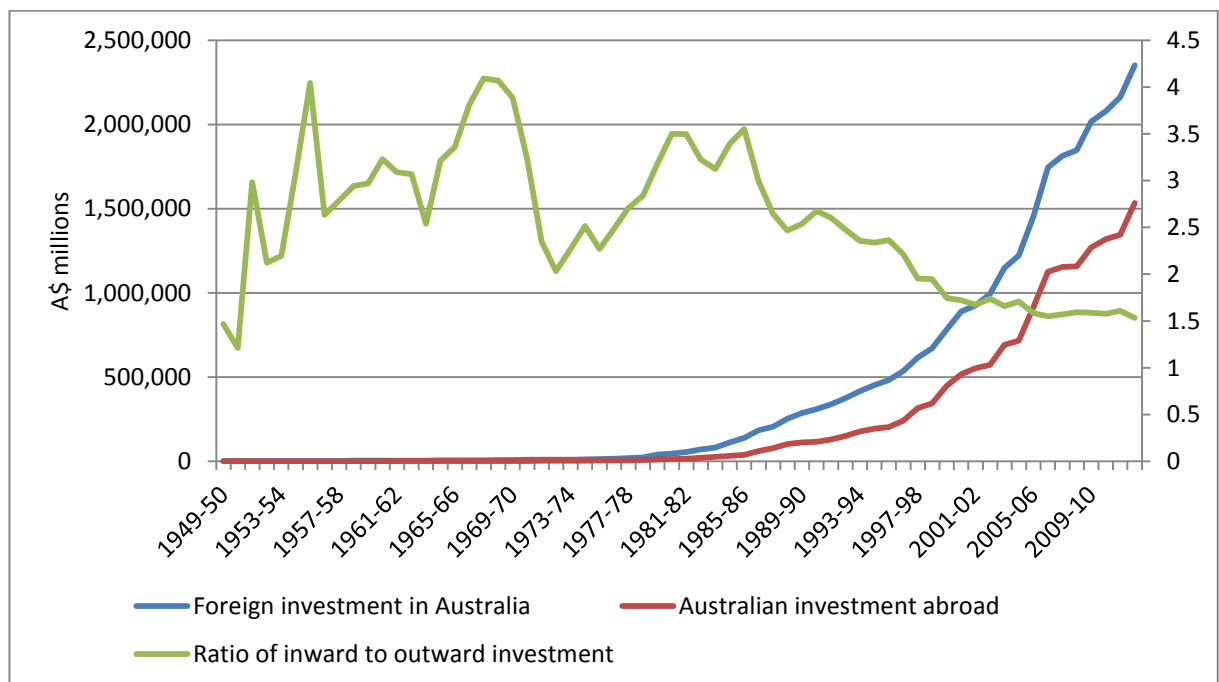
Figure 39: Australia's two way trade in merchandise goods and services 1980 to 2013



Source: UNCTAD 2014

The discussion so far in this section has covered merchandise trade only. Figure 39 shows the two way trade in merchandise goods and in services. While at first glance the growth in the trade in services seems far less impressive than that of goods, it is important to remember that services trade has a much larger value add (VAX) than that of goods (Kelly and La Cava 2014). This will be discussed further in Information Sheet 67.

Figure 40: Two way foreign investment flow, nominal and ratio 1949-50 to 2012-2013

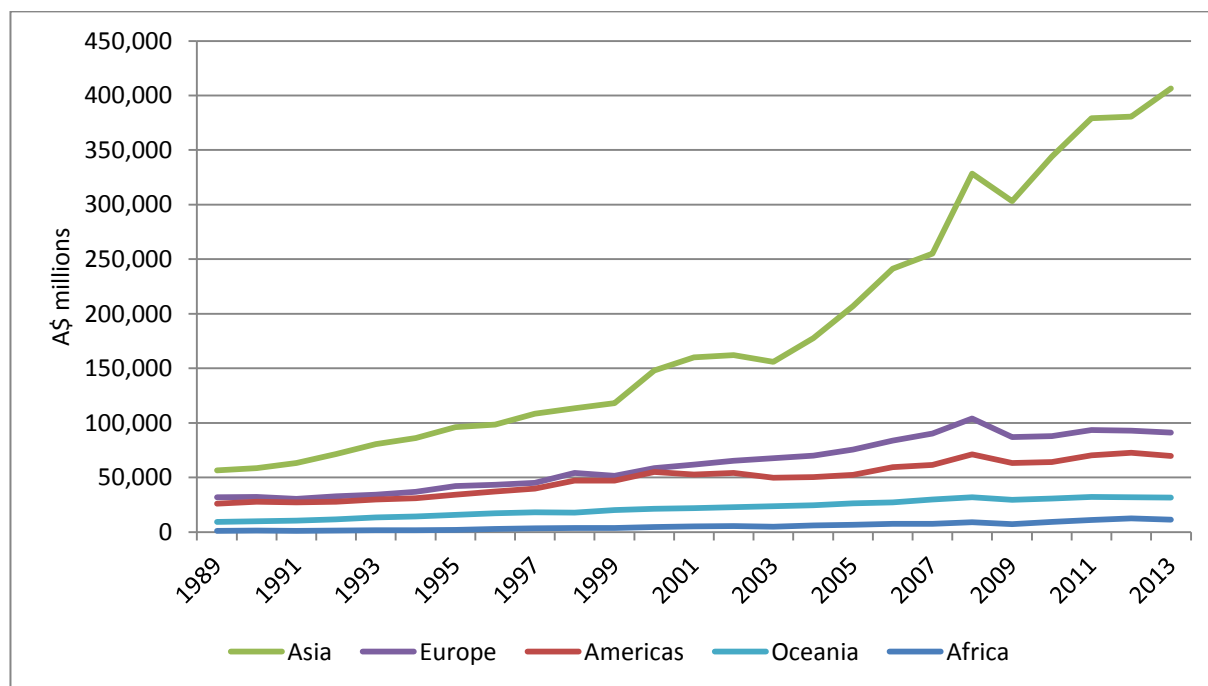


Source: DFAT 2014b

Figure 40 shows the level of foreign investment in Australia and that of Australians abroad demonstrating the internationalisation of the Australian economy over the last 40 years. The dramatic rise in the international trade in goods and services has been accompanied by significantly increased investment flows.

The ratio of inflowing to outflowing investment (the green line on the figure) shows a slow decline and an increasing stability with the trend to more balanced investment flows. In the 1960s, when international trade was relatively low, foreigners invested up to four dollars in Australia for every dollar Australians invested overseas. As international trade increased, the trend has been consistently down until in recent years it has been around a dollar fifty to one. In other words, as trade has increased, the deficit in foreign investment flows has been reduced. It is probable that the growing pool of domestic savings in Australia since the introduction of the compulsory superannuation in 1992 has also played a significant role in the decline of the ratio.

Figure 41: Direction of Australia's merchandise goods trade 1989-2013

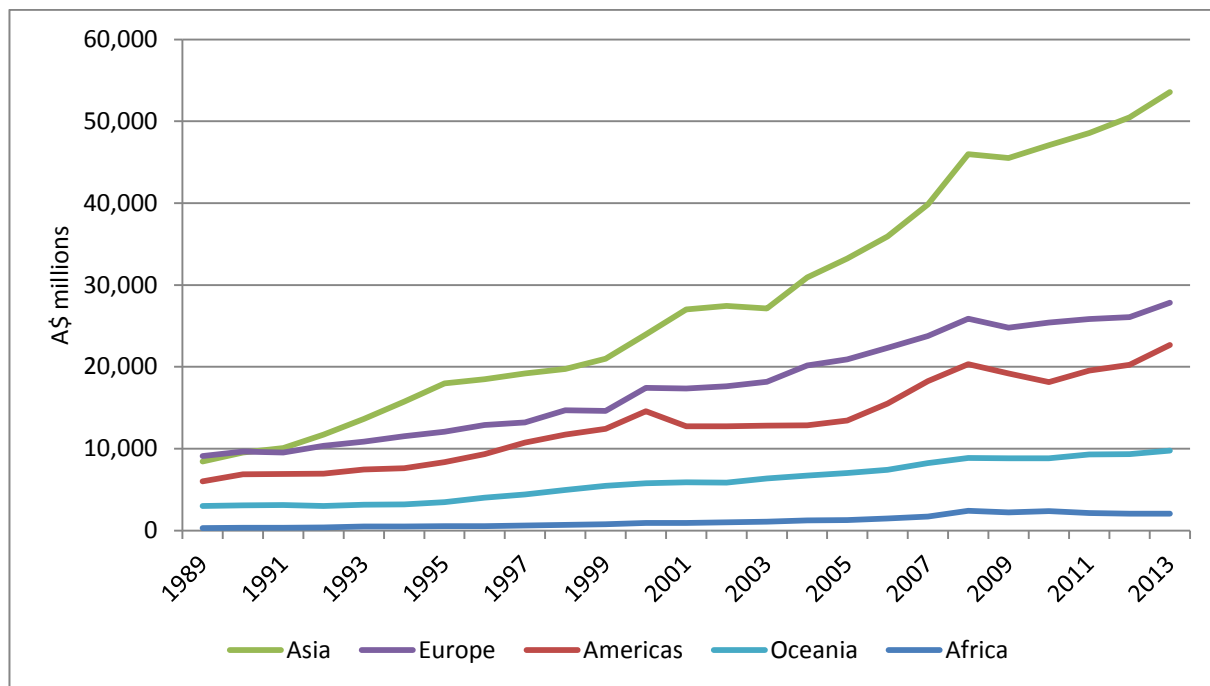


Source: DFAT 2014b

Figure 41 shows the increasing volumes of merchandise good trade with Asia that has augmented trade with other trading partners rather than replaced it. The figures underlying the graph show the increasing importance of China to Australia's trade in goods. In 1989, China accounted for a little over two per cent of Australia's merchandise goods trade, by 2013 it was nearly a quarter, a rate of increase that shows no signs of lessening.

It is important not to lose sight of just how complex the trade in goods and services is in a developed country such as Australia and the reader is referred to the Department of Foreign Affairs and Trade, Trade Import Export Classification (TRIEC) website <https://www.dfat.gov.au/publications/stats-pubs/pivot-tables.html> to get a sense of how intricate the trading networks are. Nevertheless, there has been an overall trend to specialisation in the export of primary products, particularly mining products (Lydon et al 2014: Exhibit 3). This does not necessarily mean that previous industries have been replaced; it is more often the case that new products have been added to the existing trade.

Figure 42: Direction of Australia's trade in services 1989-2013



Source: DFAT 2014b

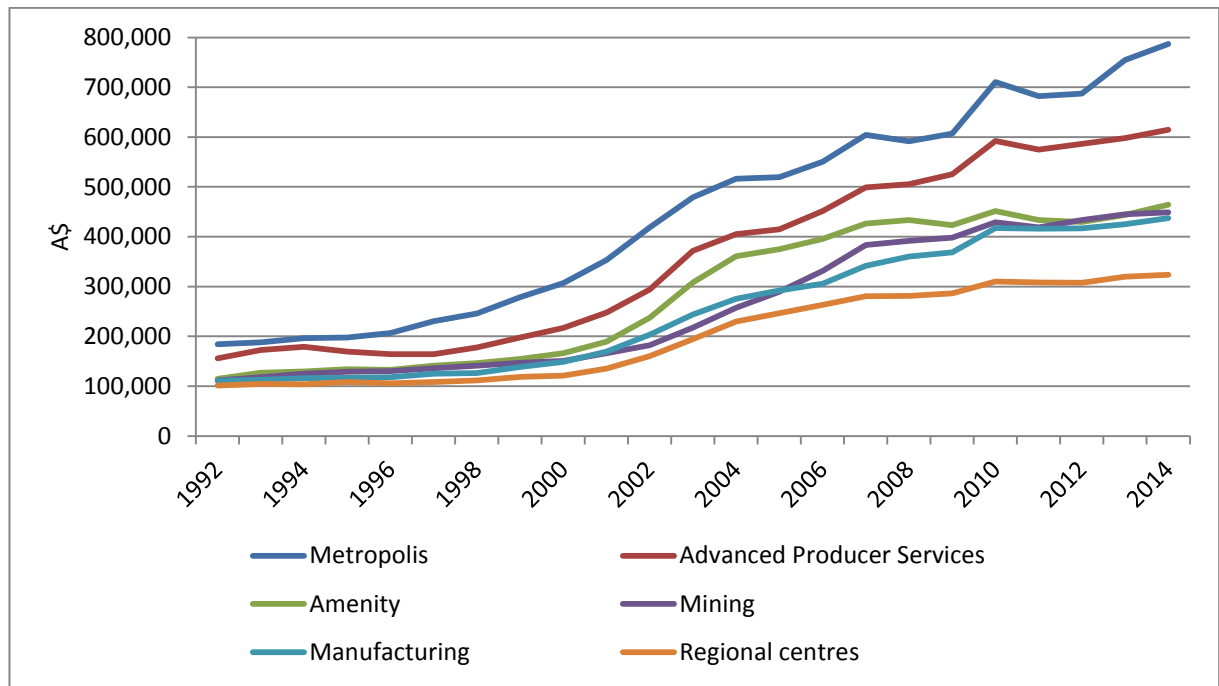
While the United States and Britain remain the first and second largest individual trading partners respectively for the Australian trade in services, Figure 42 shows that the direction of the trade in services is reflecting the trade in merchandise goods which is becoming increasingly focused on Asia.

International trade and relative house price movements in Australia

The following section is an analysis of house prices of the 41 Australian cities with a population above 30,000 at the 2011 Census, supplied by the commercial firm RP Data. More than four fifths of the nation's population lives in these cities and many more commute to work in them or access their services every day.

The reader will recall Figures 8 and 9 above that showed an almost exponential increase in house prices in English speaking countries, including Australia, beginning around 1997. To capture this, the data presented below goes back to 1992, the earliest year for which data is available for all cities.

Figure 43: Nominal house prices in Australia by city group 1992-2014



Source: Unpublished RP Data tables

Figure 43 shows the nominal house price growth for Australian cities categorised according to functional groups (Appendix 1) in a similar way US cities were in Figure 27. Readers' attention is directed in particular to the widening gap between Australia's most trade exposed locations (the metropolises of Sydney and Melbourne) and the rest of the nation particularly over the last four years.

Australia only has one example of a city with a high level of Advanced Producer Services and a low exposure to international trade; Canberra. Although it is directly affected by Australian Government policies, its house price trajectory broadly tracks its US equivalents and Ottawa and Wellington in that it has failed to recover its pre Global Financial Crisis price growth path indicating that its locational value relative to the metropolises is falling.

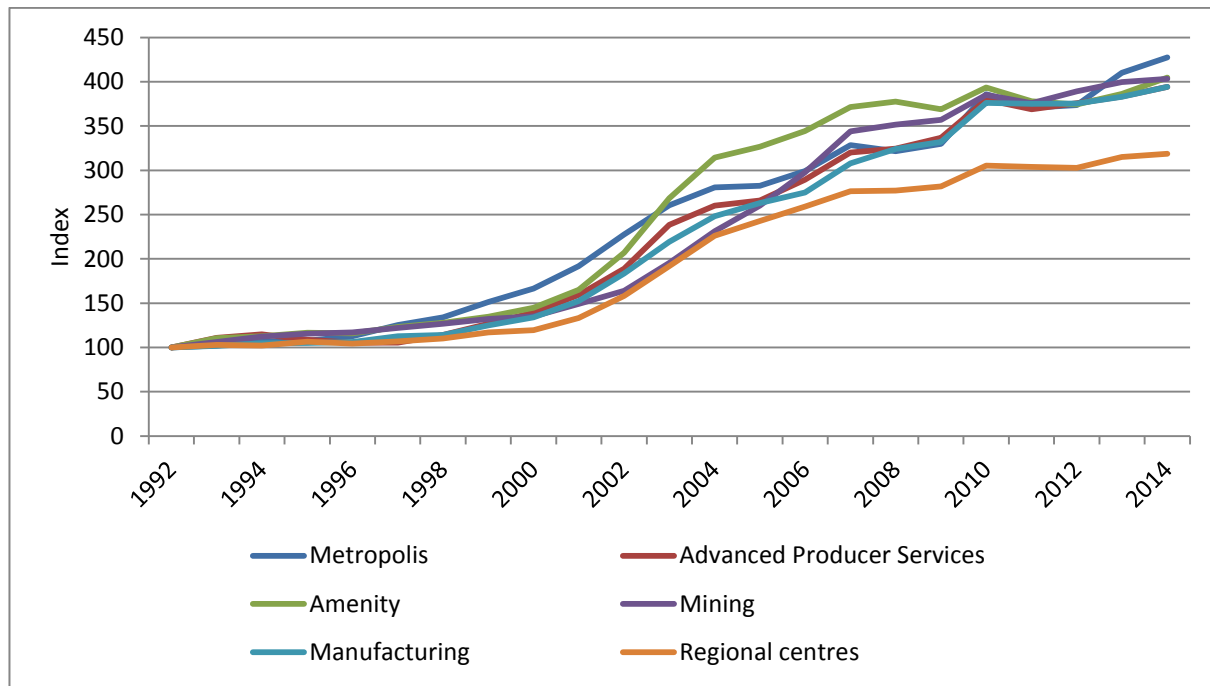
The amenity cities in Australia are on the coast, have an age structure that tends towards young families and a high proportion over 65 and an industry profile dominated by construction, tourism and personal services. They mirrored their US equivalents in their strong growth in the first decade of the century. However, unlike their American cities equivalents, Australian amenity cities have not resumed their pre Global Financial Crisis trajectories. An indication of the price pressure on the amenity city market in Australia is that in mid-2013 more than a third of sales in many of these cities were made at a loss (Lawless 2014).

The growth in house prices in mining cities (those cities that supply mining services) occurred later than amenity cities and continued longer. The recent downturn in thermal and coking coal prices as well as most metals would suggest that the economic value of the mining locations will also fall and the dip in house prices evident through 2013-14 may continue.

Geelong and Adelaide have had a strong presence in manufacturing, particularly vehicle manufacturing, since the Second World War. Their locational values have held up in spite of the current and expected manufacturing job losses in these cities though it is pertinent to note that they are both also significant ports with international trade exposure.

The gap between the locational value of regional centres (those cities that are mostly inland and have a long history of providing services to largely agricultural regions) and other Australian cities has progressively opened up over the course of the series. As every year goes past, the price ratio between regional cities and metropolises slowly increases. In 1992, average metropolitan house prices were 1.8 times higher than regional centres. By 2014, they were 2.4 times higher.

Figure 44: Indexed house prices in Australia by city group 1992-2014

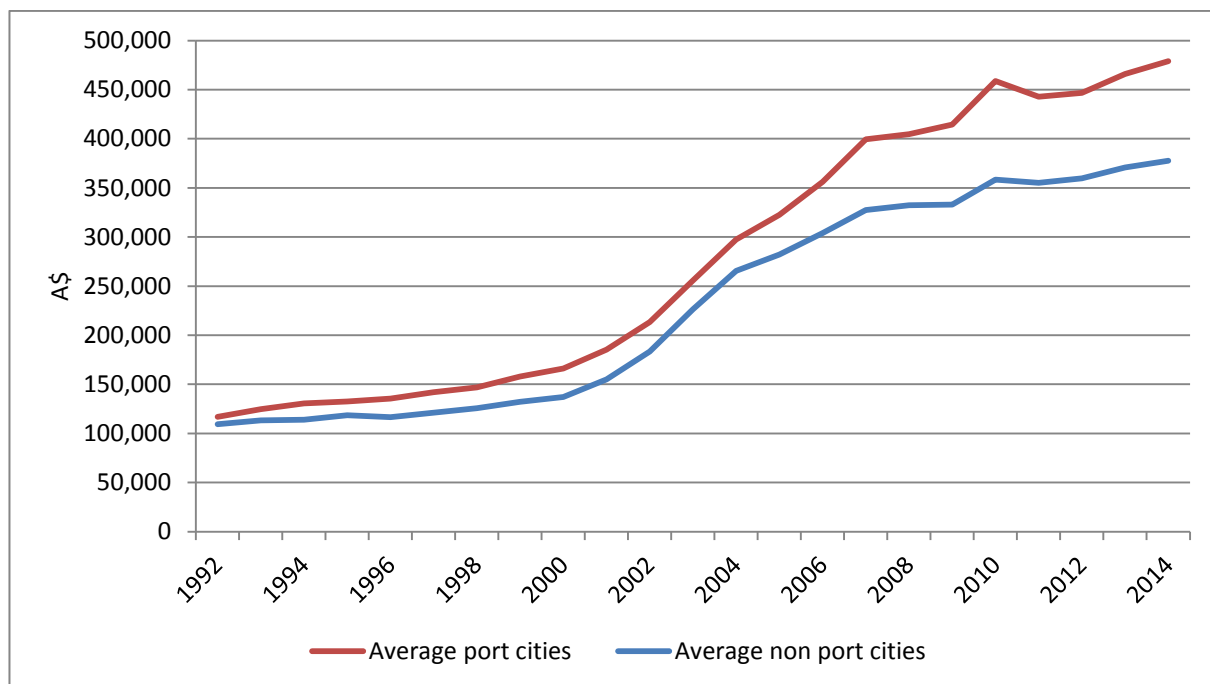


Source: Unpublished RP Data tables

Figure 44 is the same data as Figure 43 expressed as an index graph. To reprise, it is like the average price in each city category was 100 in 1992. Presented this way, the dramatic rise in the locational value of amenity cities in the years between 2000 and 2008 is clearer, as is the later rise in mining city values. The sharp rise in metropolitan values over the last two years is also more evident. The widening gap between the regional centres and other city groups, particularly since 2005, also becomes clearer.

As an aside, it is by no means clear what happened in 2005 but house prices also start to diverge more quickly in the other countries surveyed in this paper.

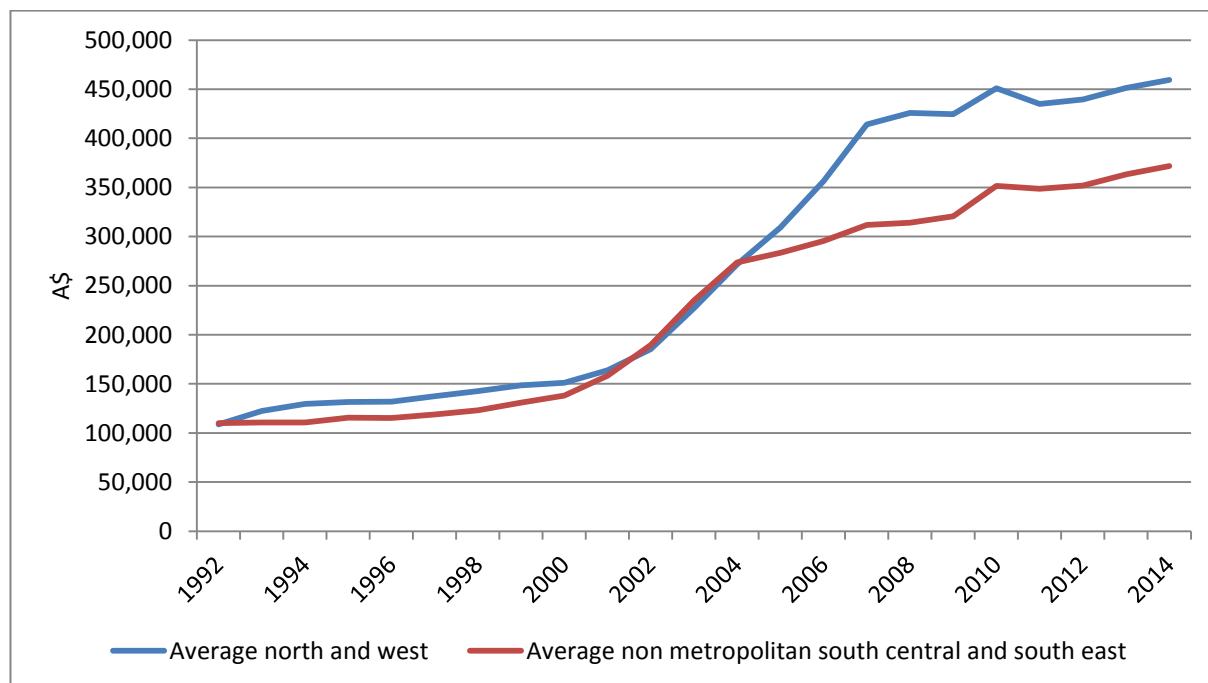
Figure 45: Average nominal house prices in Australian port cities and non-port cities 1992-2014



Source: Unpublished RP Data tables

Figure 45 shows the difference in the trajectories of locational values between cities that are linked into international trade through their ports and those that are not. Once again, 2005 marks a point where the divergence increases. This graph shows a similar pattern to the US non port/port city house prices shown in Figure 29. The main difference is that the divergence begins about five years earlier in the US.

Figure 46: Average nominal city house prices in north and west Australia compared to the south central and south east (excluding metropolitan) 1992-2014

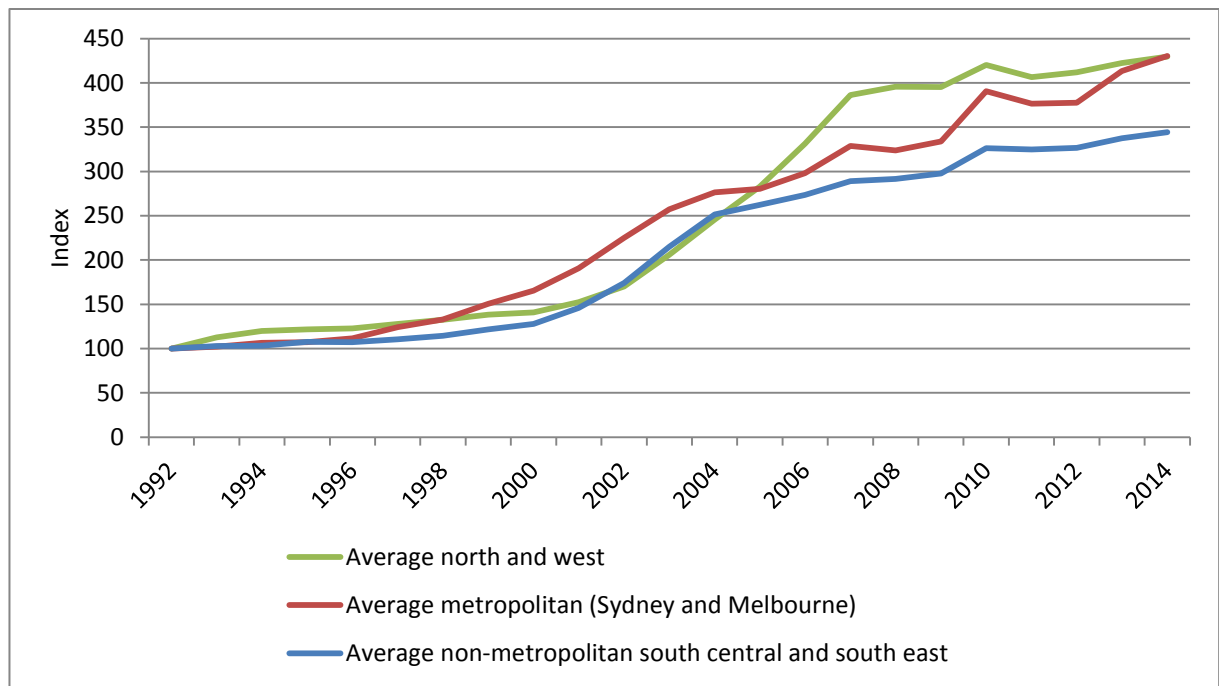


Source: Unpublished RP Data tables

The first part of this section showed that Australia's international trade was increasing and progressively changing direction towards Asia. If Australia followed the pattern of the other countries surveyed above then those areas orientated toward this trade will increase in economic or locational value compared to those that are not. Figure 46 shows that this is indeed the case. In 1992, the difference between the average house price on southern and central Australia outside Sydney and Melbourne and those in the north and west (in cities in Queensland, the Northern Territory and Western Australia) was just over one thousand dollars. Effectively this meant that locational values were the same on all points of the compass. Starting in 2005, the locational values begin to diverge. By 2014, people were prepared to pay an extra \$88,000 to access the economy of north and west Australia above those of the central and south east. If this figure was multiplied by every house, the increase in locational value of north and west Australia compared to the south east would be in the tens of billions of dollars.

The exceptions to this trend were the metropolises of Sydney and Melbourne. Despite their increasingly unfavourable location in the international trade network (in particular Melbourne) they have been able to maintain or increase the amount of international trade flowing through them suggesting a combination of path dependency and a critical mass of Advanced Producer Services can overcome location. It is an open question as to whether this situation will be sustained over the coming decades.

Figure 47: Average indexed house prices in north and west and central and south east and metropolitan Australia 1992-2014



Source: Unpublished RP Data tables

Figure 47 shows the same data expressed as an index graph with the addition of the metropolises of Sydney and Melbourne. This shows that the growth in values in the north and west of the continent has been greater than the metropolitan growth for much of the 'mining boom'. However, since mid-2013 the locational values have been converging and may cross again in early 2015. The reader's attention is also directed to the flatter growth in the average of the non-metropolitan cities in the south central and south east.

Although it is perhaps too early to say whether the divergence in locational values since 2005 represents an enduring structural change in Australia's economic geography, the fact that similar patterns are happening in other countries would indicate something fundamental is going on. The data presented in this paper suggests that the increase in the amount of international trade and a shift in its direction are the main factors driving changes in locational value. If this is the case then the divergence in locational values is likely to continue. Some of the implications of this are discussed in the next section.

Section 4: Observations on the effects of international trade on Australian cities

1. The rise in international trade, or Globalisation Mark II, is the most profound economic change in the last forty years. It has been the most powerful tool for lifting people out of poverty the world has ever known, with hundreds of millions of people in Asian countries in particular now having a quality house and a good diet for the first time in their lives. Hundreds of millions more have joined the middle class. In Australia's case, it has triggered the longest period of economic growth this country has ever experienced and average real incomes have nearly doubled in twenty years. In hindsight, an understanding that this major economic change would have a profound impact on a nation's economic geography seems obvious, however it was not so at the time.
2. Modern international trade is predominantly between cities rather than nations (McCann and Acs 2009, 2013 SOAC). Consequently, a city's relative locational value is now to a large extent determined by its position in the international trade network. As the gravitational centre of the international trade network moves around, cities' locational values rise and fall. As the centre of the world's trading network moves towards Asia, the positional advantage in Australia moves north and west and this is being reflected in locational value (Figures 48 and 49).
3. One of the corollaries of changing locational value is that the value of the associated infrastructure must also change. Mention has been made earlier that a change in trade directions and volumes meant that a significant portion of Australia's regional rail network acquired a negative value and thousands of kilometres built laboriously with pick and shovel were decommissioned in the 1990's. On the other hand, the increase in the locational value of metropolises have made those rail lines immensely valuable. Currently, the link between locational value and infrastructure value is weak in Australia. since land taxes are only a small portion of the tax base.
4. Metropolises may have extra dynamics above location. Sydney, but more especially Melbourne, are pointed the wrong way in that they are orientated away from the shift of trade to Australia's north but their locational value remains high. There may be two reasons for this. The first is that more than half of the world's international trade has a multinational company at one end of it. These firms are located where there is a critical mass of Advanced Producer Services and that is almost always situated in the centre of large cities. The second is that products are being steadily more invested with symbolic value and it is this symbolic value that is being created in cities (Scott 2012). An example is the trays of watches in a jeweller's window. All of them perform the same fundamental task and it is their symbolic value that largely determines their price. This symbolic value is created by, for example, an association with a particular sport, global travel or a celebrity. The types of industries that produce symbolic value such as advertising, design and publishing are similar to Advanced Producer Services in that they are generally located in the centres of metropolises.
5. Position within the international trade network is the critical factor in locational value but as both Australian and international examples in this paper have shown; amenity is also important. The locational value of amenity cities in the US have grown strongly this century as did their Australian counterparts until 2008. The role of amenity in urban growth has been one of the more intensely debated aspects of urban policy over the last decade. On one hand there is the view that modern cities are now 'urban playgrounds' and that amenity attracts economic generating activities (Glaeser and Gottlieb 2006, Glaeser 2011). On the other hand, there is a view that 'you cannot eat sunshine' (e.g. Niodomysl and Hansen 2010) and that as house prices in amenity cities go up, wages go down. Research done in Canada (Albouy et al 2012) supports the latter view.

6. Much of the popular and academic literature on cities in the last two decades has focused on the role of Advanced Producer Services in urban development. Analysing changes in relative locational value of cities offers some insights into the thesis that Advanced Producer Services are the driver of increased value. Figure 28 plotted the value trajectory of a group of US cities with a high proportion of Advanced Producer Services and a relatively low exposure to international trade. These are cities that specialise in fields such as education, government administration and private administration that is not internationally focused such as the headquarters of local banks. The figure shows that values in these types of cities are growing more slowly than those cities that have Advanced Producer Services *and* a significant international trading function.

In Australia's case Canberra is the exemplar. Figures 43 and 44 show a widening gap in the locational value of Canberra and the Metropolises despite the fact that Canberra has by far the most skilled workforce and the highest workforce participation in the nation (2012 State of Australian Cities). This supports the proposition that future value growth lies in cities that are linked into the international trade network and have a critical mass of Advanced Producer Services. Cities that are linked into trade that do not have the Advanced Producer Services (e.g. Townsville) are largely in the same situation as Canberra and their potential for value growth is lower than if they had both.

Appendix I – Functional grouping of Australian cities with a population over 30,000

<i>Metropolis</i>	<i>Advanced Producer Services</i>	<i>Mining</i>	<i>Amenity</i>	<i>Regional Centre</i>	<i>Manufacturing</i>
Sydney	Canberra	Gladstone	Port Macquarie	Hobart	Adelaide
Melbourne		Perth	Coffs Harbour	Lismore	Geelong
		Darwin	Bunbury	Toowoomba	
		Newcastle	Hervey Bay	Launceston	
		Townsville	Sunshine Coast	Albury-Wodonga	
		Cairns	Gold Coast-Tweed	Ballarat	
		Kalgoorlie-Boulder	Wollongong	Bendigo	
		Bathurst (Cadia)	Nowra-Bomaderry	Burnie-Devonport	
		Orange (Cadia)	Warrnambool	Gippsland	
		Geraldton		Rockhampton	
		Mackay		Wagga Wagga	
		Brisbane		Shepparton	
				Mildura	
				Tamworth	
				Dubbo	

References

Airports Council International 2014, ACI annual world airport traffic report, <http://www.aci.aero/Data-Centre/Monthly-Traffic-Data/International-Passenger-Rankings/Monthly> [Accessed 24 August 2014].

- Albouy, D., Leibovic, F. and Warman, C. 2012, Quality of life, firm productivity and the value of amenities across Canadian cities, National Bureau of Economic Research (NBER) Working Paper 18103
- Auckland Council 2014, 'Auckland's housing market: Spatial trends in dwelling prices and affordability for first home buyers', *Technical report 2014/25*.
http://www.knowledgeauckland.org.nz/home/publications/publications_home.cfm?oID=9B253AAD-14C2-3D2D-B999-A4873D2B68C0 [Accessed 25 September 2014].
- Australian Bureau of Statistics (ABS), 2012, *Regional population growth, Australia, 2010-11* Cat. No. 3218.0, Canberra.
- Arsenault, R 1984. 'The Cooling of the South', *The Wilson Quarterly* 8:150-159.
- Bank of International Settlements 2014, *Residential property prices statistics, detailed data set*, <http://www.bis.org/statistics/pp.htm> [accessed 1 July 2014].
- Central Statistics Office 2014a, *Table TSA05: Value of Merchandise Trade by Area, Year and Statistic*, <http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/saveselections.asp> [Accessed 3 September 2014].
- Central Statistics Office 2014b, *Table HPM01: Residential property price index by month and type of residential property*, <http://www.cso.ie/multiquicktables/quickTables.aspx?id=hpm01> [Accessed 2 August 2014].
- Central Statistical Office 2014c, *Table PEA07: Estimated population by age group, sex, regional authority and year*, <http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/saveselections.asp> [Accessed 2 August 2014].
- Ciro, T. 2012, *The Global Financial Crisis: Triggers, responses and aftermath*, Ashgate, Farnham UK.
- City of Liverpool 2014, *The City of Liverpool, a brief history*, http://www.liverpoolcityportal.co.uk/history/history_index.html [Accessed 23 August 2014].
- Containerisation International 2014, *Top 100 ports 2013*, http://europe.nxtbook.com/nxteu/informa/ci_top100ports2013/index.php?startid=78#/16 [Accessed 22 August 2014].
- Department of Foreign Affairs and Trade (DFAT) 2014a, *Australia's trade and economic indicators*, <http://www.dfat.gov.au/publications/stats-pubs/trade-time-series-data.html> [Accessed 23 July 2014].
- Department of Foreign Affairs and Trade (DFAT), 2014b, *Australia's direction of goods and services trade calendar year (from 1987 to present)*, <http://www.dfat.gov.au/publications/stats-pubs/trade-time-series-data.html> [Accessed 20 August 2014].
- Derudder, B., Hoyler, M. and Taylor, P. 2013, 'The network dimension', in *Global city challenges: Debating a concept, improving the practise*, Acuto, M. and Steele, W (eds), Palgrave MacMillan Basingstoke.
- Dyster, B. and Meredith, D. 2012, *Australia in the global economy: Continuity and change*, Cambridge University Press, Cambridge.
- Federal Housing Finance Agency *Quarterly purchase only index, select metropolitan areas, seasonally adjusted 2014*, <http://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index-Datasets.aspx#qpo> [accessed July 3 2014].
- Florida, R. 2002, *The rise of the creative class: And how its transforming work, leisure, community and everyday life*, Basic Books, New York.
- HM Revenue and Customs 2014 *UK Regional Trade in Goods Statistics Quarter 4 2014 released 4 September 2014*, https://www.gov.uk/government/uploads/system/...data/.../Rts_Q2_2014.xls [Accessed 9 September 2014].
- Glaeser, E. and Gottlieb, J. 2006, 'Urban resurgence and the consumer city', *Urban Studies* 43: 1275-1299.
- Glaeser, E. 2011, *Triumph of the city*, Penguin, New York.
- International Trade Administration 2014, *Exports/imports to regions, all merchandise* <http://tse.export.gov/TSE/ChartDisplay.aspx> [Accessed 10 September 2014].

- Jordà, O, Schularick, M. and Taylor, A. 2014, The great mortgaging: Housing finance, crises, and business cycles, NBER Working Paper No. 20501.
- Keena, C. 2014, 'Dublin house prices up 25 per cent in a year', *Irish Times*, 30 September, 2014.
- Kelly, G. and La Cava, G. 2014, 'International trade costs, global supply chains and value-added trade in Australia', *Reserve Bank of Australia Discussion Paper 2014-07*, Sydney.
- Kent, C. 2011, 'Two depressions, one banking collapse: Lessons from Australia,' *Journal of Financial Stability* 7(3): 126-137.
- Kenwood, A. 2014, *Growth of the international economy 1820-2015*, Routledge, New York.
- Lanz, R., Miroudot, S. and Ragoussis, A. 2009, *Trade in intermediate goods and services*, OECD Trade Policy Working Paper No. 93, Paris.
- Lawless, T. 2014, *Making a profit or a loss from real estate: An overview of RP Data's latest pain and gain report*, <http://blog.rpdata.com/2014/06/pain-gain-overview-rp-datas-latest-profit-loss-report> [Accessed 2 October 2014].
- Lees, C. 2012, *UK trade performance across markets and sectors*, BIS economics paper No. 17, Department of Business Innovation and Skills (BIS).
- Lipsey, R. 2006, *Measuring international trade in services*, National Bureau of Economic Research Working Paper No. 12271, Cambridge MA.
- Lloyds Banking Group, 2014, *Halifax House Price Index*, <http://www.lloydsbankinggroup.com/Media/economic-insight/halifax-house-price-index/> [accessed 2 July 2014].
- Lydon, J. David, D. and Bradley, C. 2014, *Compete to prosper: Improving Australia's global competitiveness*, McKinsey Australia, http://www.mckinsey.com/global_locations/pacific/australia/en/latest_thinking/compete_to_prosper [Accessed 25 July 2014].
- McCann, P. and Acs, Z. 2009, 'Globalisation: Countries, cities and multinationals', *Jenna economic research papers 2009-042*
- McLean, I. 2013 *Why Australia prospered: The shifting sources of economic growth*, Princeton University Press, Princeton NJ.
- Niedomysl, T. and Hansen, H. 2010, 'What matters more for the decision to move: jobs versus amenity', *Environment and planning A*, 42(7):1636-1649.
- Organisation for Economic Co-operation and Development (OECD) 2014, *ALFS Summary tables: Population growth, rate* <http://stats.oecd.org/index.aspx?queryid=27482> [Accessed 4 August 2014].
- Patterson, G. 2004, *The Mosquito Wars: A History of Mosquito Control in Florida*, University Press of Florida, Gainesville.
- Quinlan, H. and Newland, J. 2000, *Australian railway routes 1854-2000*, Australian Railway Historical Society New South Wales Division, Redfern.
- Scott, A. 2012, *A world in emergence: Cities and regions in the 21st century*, Elgar, Northampton MA.
- Sinclair, W. 1976, *The process of economic development in Australia*, Cheshire, Melbourne.
- Spiller, M. 2012, *Measuring and capturing the value from metropolitan planning; lessons from Melbourne and Dublin - SGS Occasional Paper*, <http://www.sgsep.com.au/insights/white-papers/measuring-and-capturing-the-value-from-metropolitan-planning-lessons-from-melbourne-and-dublin-sgs-occasional-paper>, [Accessed 23 August 2014]
- State of Australian Cities (2012 SOAC) 2012, Department of Infrastructure and Regional Development, Canberra.
- State of Australian Cities (2013 SOAC) 2013, Department of Infrastructure and Regional Development, Canberra.

Stapledon, N. 2012, 'Trends and cycles in Sydney and Melbourne house prices 1880-2011', *Australian Economic History Review* 52(3): 294-317.

Statistics Canada 2014a, *Canada's bilateral merchandise trade*, http://w03.international.gc.ca/Commerce_International/Commerce_Country-Pays.aspx?lang=eng [Accessed 23 August].

Statistics Canada 2014b, *Table 384-0038: Gross domestic product, expenditure-based, provincial and territorial*, <http://www5.statcan.gc.ca/cansim/pick-choisir?lang=eng&p2=33&id=3840038> [Accessed 14 September 2014].

Statistics New Zealand 2014a *Long term data series, Tables H1.1 and H2.1*, http://www.stats.govt.nz/browse_for_stats/economic_indicators/NationalAccounts/long-term-data-series/overseas-trade-and-payments.aspx [Accessed 11 September].

Statistics New Zealand 2014b, *Value of imports - by country of origin & groups by present day membership and Value of exports - by country of origin & groups by present day membership*, <http://www.stats.govt.nz/infoshare/ViewTable.aspx?pxID=3c1c2df3-b719-4cfb-82ec-0c53f2736db6> [Accessed 11 September 2014].

Terborgh, A. 2003, *The post war rise of world trade: Does the Bretton Woods system deserve credit?*, *London School of Economics, Working Paper 78/02*.

Terranet/National Bank of Canada 2014, *National Bank House Price Index*, <http://www.housepriceindex.ca/Default.aspx> [accessed 3 July 2014].

Turner, I. 1978, 'The growth of Melbourne', in J.W. McCarty and C.B. Schedvin (eds), *Australian capital cities: historical essays*, Sydney University Press, Sydney, 1978.

The World Bank 2014, *Exports of goods and services (% of GDP)*, <http://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?display=default> [Accessed 28 July 2014].

United Nations Conference on Trade and Development (UNCTAD) 2014a, *Value of merchandise exports and imports, annual, 1948-2013*, <http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=101> [Accessed 27 August 2014].

United Nations Conference on Trade and Development (UNCTAD) 2014b, *Values, shares and growth of exports and imports of total services, annual, 1980-2013*, <http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=17648> [Accessed 27 August 2014].

United States Census Bureau 2014, *Trade in goods with China*, <https://www.census.gov/foreign-trade/balance/c5700.html> [Accessed 14 September 2014].

World Trade Organisation (WTO) 2014, *Statistics database*, [http://i-tip.wto.org/services/\(S\(2b35wyqwxqjhdd31rz153pol\)\)/ChartResults.aspx](http://i-tip.wto.org/services/(S(2b35wyqwxqjhdd31rz153pol))/ChartResults.aspx) [Accessed 28 July].

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