



**NEW ZEALAND INSTITUTE FOR THE STUDY
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E-Commerce and its effect upon the Retail Industry and Government Revenue

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Abstract:

We study the literature examining e-Commerce, and by analogy apply our findings to New Zealand. Although lower online prices are a key driver of e-Commerce, the main motivation is increased product range. Nevertheless, the government's current tax policy is distortionary, and negatively affects government revenue and domestic retailers. Although consumers derive substantial welfare from online retailing, the detrimental effects of the current policy are significant. We recommend a downwards revision to the de minimis threshold. If GST was payable on all purchases, offshore online purchases would decline by 45 -60%, whilst purchases at domestic online retailers would rise by 27%.

1. Introduction:

Shane was in a rush. The meeting in Auckland was supposed to finish at 4:30pm, but had continued until 6pm. With his daughter, Harriet's, 21st scheduled to begin at 8pm in Wellington he needed to get to the airport quickly. In his panic, he threw his gear into the waiting taxi – breaking his mobile phone's screen. The next morning he went to the local electronics store. Having spent half an hour with the salesman he settled on his chosen phone. As he went to pay his daughter called him over. Taking advantage of the stores free wifi, Harriet had just discovered that the same phone was being sold by an Australian firm for \$300 - \$200 less than the local store. Shane immediately thanked the salesman, made an excuse, left the store and bought the phone online.

Such a story is not uncommon. With the advent of computers, tablets and smartphones, New Zealand has become increasingly technologically advanced. What was traditionally purchased in stores is now increasingly being bought online. Groceries, flights and consumer goods are all available over the internet. This growth has significant implications throughout society and the economy. In particular, e-commerce's rise threatens to seriously undermine New Zealand's GST regime.

On 1 October 1986, the government introduced a Goods and Services tax (GST) of 10% on all goods and services supplied in New Zealand. By 1 October 2010, this tax had risen to 15%. Designed to apply universally, our GST scheme is "recognised internationally for its simplicity and comprehensiveness – providing few exceptions or exclusions."¹ However, e-Commerce has exposed a substantial loop-hole – threatening to undermine the universality of this tax.

Many goods purchased from foreign websites legitimately avoid paying GST. No taxes or tariff duties are collected on overseas purchases if the total tax payable is less than \$60. For most goods, this translates into a \$400 de minimis limit. However, if the good attracts a tariff, the limit is significantly lower.² To get around this limit foreign websites are increasingly offering free shipping. This allows consumers to costlessly split large purchases into several smaller bundles, thereby avoiding GST.

¹ Alley, C. 2011.

² For example, clothing and footwear which face a 10% tariff have a de minimis limit of \$226.42.

This report evaluates the Government's current policy by reviewing the literature surrounding this issue. The review is divided into three sections. First we ask what is driving the growth in e-Commerce, finding several key drivers. We then assess who benefits from internet retailing and provide several examples from the US context. Finally, we review the literature surrounding tax effects upon online markets, finding that consumers' desire to avoid paying GST results in substantial distortionary effects, creating large inefficiencies.

In 2011, New Zealand consumers spent \$2.68 billion online. This expenditure is expected to grow by 19% to over \$3.19 billion in 2012 (Harker, 2012).³ Such phenomenal growth has been fuelled by a variety of factors. The recent proliferation of internet-capable devices has made consumers far more comfortable when making online purchases, while recent banking innovations such as Visa debit cards and PayPal have allowed children as young as 13 to purchase goods online easily.

However, the two biggest drivers of e-commerce identified by the literature are lower online prices and larger product variety available online. These two reasons are particularly important in the New Zealand context. As a small, geographically isolated country, the internet provides an important portal to the rest of the world, dramatically increasing the selection of products available domestically. Moreover, by purchasing a good online, consumers are assured of its availability. They are no longer required to drive down to their nearest store only to find the good is out-of-stock.

E-Commerce has dramatically reduced locational importance. Retailers are now able to sell their products all over the world. This has the potential to increase their revenue and customer base dramatically. Recent innovations such as e-Books have further enhanced firm welfare by creating new revenue streams from existing products. However, this competition has the potential to overwhelm some conventional retailers leading to substantial business attrition.

Internet retailing has also dramatically enhanced consumer welfare. Instead of following the 'Pareto' principle whereby a small group of products provide the majority of the industry's revenue, internet retailers derive a large proportion of their revenue from niche products. Lower online search costs have enabled consumers to fulfil their preferences more accurately – driving large increases in welfare. For example, one paper estimated that in 2008, consumer welfare in the US increased by \$3.93 – \$5.04 billion from the sale of niche books at Amazon.com.

We also found that online search costs remain non-trivial, with estimates ranging from \$4 to \$6.45. These have not only restricted the growth in consumer welfare, but have also distorted the online retail market. Even when consumers are presented with a list of retailers' prices, they display strong preferences for branded retailers such as Amazon.com or ASOS. As a result, the internet is far from being a perfect market.

The government's taxation policy has had a large impact upon the online retail market. The decision not to collect GST from offshore purchases below the de minimis level appears to undermine the 1985 policy decision to implement an all-inclusive GST regime. In our view, this policy can only be

³ The same report further predicted that between 2012 and 2016, growth would average 14.3% p.a. resulting in a \$5.37bn market by 2016.

supported by strong theoretical arguments or high Customs' enforcement costs. The strongest argument identified by the literature is an infant-industry argument. Although this argument previously had substantial merit, we now believe that the online retail market is sufficiently entrenched, and no longer requires this implicit subsidy.

Studies conducted in the United States clearly indicate strong tax effects. Whilst consumers exhibit strong home biases, they will actively purchase goods out-of-state in order to avoid sales taxes. This is equivalent to New Zealanders purchasing items from foreign retailers. Although there is some contention in the literature, it is likely that consumers are more accepting of price increases caused by changes in sales taxes rather than changes in underlying prices. Nevertheless, consumers display strong tax-price elasticities. If New Zealand were to abolish the de minimis limit, Einav et al's study of eBay data predicts a 45-60% fall in purchases from offshore internet retailers, offset by a 27% increase in demand at domestic internet retailers. Finally, we find that the government's current tax policy may be deterring offshore firms from establishing physical stores within New Zealand.

However, whilst there are many similarities between the New Zealand and US markets, in the absence of any local data, it is impossible to accurately assess whether the effects in New Zealand are equivalent to those found in the US.

2. What is driving the growth of E-commerce?

For a small, geographically isolated country, the internet represents a window to the world. Consumers have access to a vast array of goods from international retailers, often at lower prices than at their local store. With reduced search costs, and recent technological and banking innovations, it is now even easier to purchase goods online.

2.1 Lower prices:

In July 2012, PricewaterhouseCoopers, in conjunction with Frost & Sullivan, released their report on the Australian and New Zealand online retail market. According to this report, 51% of New Zealanders regarded lower online prices as being the most important reason for shopping online. Such a finding appears to be tentatively supported by the academic literature.

As search costs drastically reduce, the online retail market has become increasingly integrated (Brynjolfsson, Dick and Smith., 2010). Search engines such as Google, Yahoo! and Ask.com allow consumers to be directly connected to manufacturers throughout the world. 'Shopbots' such as webjet and pricespy.co.nz automatically search major retailers, allowing consumers to compare prices and other attributes (such as shipping time and product availability) amongst retailers.

One would anticipate that these reduced search costs would result in a near perfect market whereby consumers would always select the cheapest price for homogenous goods such as books and CD's. However, over a range of studies, this theory has proved to be only partially correct. Several findings can be extracted from the literature. Whilst online prices are on average lower and change more frequently than at comparable brick and mortar retailers, internet prices remain dispersed.

Moreover, consumers frequently do not choose the lowest priced good, reflecting the continued importance of retailer branding.

In a year-long study comparing the prices charged by the four largest internet and conventional retailers for selected books and CD's, Brynjolfsson and Smith (2000) found online prices were on average 9 – 16% lower than conventional brick and mortar stores. Furthermore, they found that internet retailers made smaller and more frequent price changes than their conventional counterparts, reflecting their lower menu costs. Indeed, Ellison and Ellison (2009b) found that computer parts retailers often actively monitor shopbot websites, frequently changing their price in response to competitors' actions. These price changes were often small and simply designed to maintain their position in the shopbot rankings. Such findings are unsurprising given consumers' reduced search costs and firms' minimal menu costs.

What is surprising, however, are the “substantial and systematic differences in prices across retailers on the Internet.”⁴ Brynjolfsson and Smith (2000) found the difference between the highest and lowest priced books across internet retailers averaged 33%, whilst CD prices differed by an average of 25%. Such price dispersion is typical of the online retail market. The difference between the mean and lowest prices for the top 100 US bestselling books sold online over the course of a year averaged 28% (Smith and Brynjolfsson, 2001). These results are consistent with Ellison and Ellison's (2009b) findings in the computer memory market. This systematic dispersion amongst internet retailers suggests that whilst “the underlying good is homogenous, the final product, including the bundled retailer services, is perceived as a differentiated product by the consumer” (Brynjolfsson, Dick and Smith., 2010).

Bakos (2001) suggested that in the face of competition driven by low search costs and shopbots, producers of standardised products must seek to differentiate themselves. It appears that online retailers have been at least partially successful. Whilst consumers remain sensitive to prices, branding remains an important aspect of online retailing (Brynjolfsson, Dick and Smith., 2010).

In a 2001 study of the US online book market, Smith and Brynjolfsson (2001) found that a majority of shopbot consumers *do not* choose the lowest priced offer – even though such offers are ranked according to price. Whilst customers remain price-sensitive, those who did not select the cheapest offer paid an average premium of 24.1%. This discrepancy can be explained by consumers' strong predilection for offers from the big 3 retailers (Amazon, Barnes & Noble and Borders) who were found to have a \$1.72 price advantage over generic retailers. This advantage was most apparent in Amazon which benefited from a \$2.40 price advantage over generic retailers, *and* a \$1.20 advantage over Borders and Barnes & Noble (Smith and Brynjolfsson, 2001). As can be seen from these results, consumers appear to use store branding as a proxy for credibility.

Although this study was conducted in 1999, its results were confirmed in a year-long study of consumer reactions at an internet shopbot for the top 100 US bestselling books (Brynjolfsson, Dick and Smith., 2010). Once again, consumers strongly preferred offers from the big 3 retailers, with only 49% selecting the lowest priced offer. Indeed, consumers who are concerned with the accuracy

⁴ Brynjolfsson, E. & Smith, M. D. 2000.

of delivery times are 4 times more sensitive to the presence of a branded retailer, than those consumers who sort by price – further reinforcing the importance of store branding (Smith and Brynjolfsson, 2001).

Such results are striking for two reasons. First, they were both constructed from shopbot consumers. The whole purpose of a shopbot is to rank internet retailers in a manner that allows consumers to select the cheapest offer easily. Accordingly, one would expect that these consumers would be extraordinarily price sensitive. The fact that they then show a strong predilection for branded products would appear to undermine the rationale for using a shopbot significantly. Secondly, these studies were conducted using a homogenous product. Books with the same ISBN are identical, regardless of which retailer they were purchased from. This would suggest that less homogenous goods such as clothes and shoes will display even larger brand preferences and variations in prices. However, consumers may simply be using a shopbot to compare prices at the ‘big three’ – biasing the results accordingly.

Nevertheless, price remains extremely important, as can be seen in the table below. Price elasticity is a measure of how demand reacts to a change in the good’s price. Thus, if a good has a price elasticity of -2 , every 1% increase in that goods price results in a 2% reduction in demand. The more elastic the good (i.e. the higher the elasticity) the more demand reacts to a change in price.

Table 1 - Price Elasticities

Paper	Data Source	Price-elasticity estimate
Chevalier and Goolsbee, <i>Measuring Prices and Price Competition Online</i> (2003)	Sample of over 20,000 books on Amazon.com and Barnes & Noble.com over 3 weeks in 2001	-0.45 to -3.5
Brynjolfsson Hu and Smith, <i>Consumer Surplus in the Digital Economy</i> (2003)	Data from a publisher, allowing them to work out Amazon sales patterns over 3 weeks in 2001	-1.56 to -1.79
Ellison and Ellison, <i>Search, Obfuscation, and Price Elasticities on the Internet</i> (2009a)	Pricewatch.com data from May 2000 to May 2001 for the US Computer Memory Market, plus sales data from two retailers	-17.4 to -33.1
Ellison and Ellison, <i>Tax Sensitivity and Home State Preferences in Internet Purchasing</i> (2009b)	Pricewatch.com data from May 2000 to May 2001 for the US Computer Memory Market, plus sales data from two retailers	-35 to -50
Brynjolfsson, Dick and Smith, <i>A Nearly Perfect Market?</i> (2010)	Top 100 bestselling books on DealTime.com from September 2000 to September 2001	-6.75 to -9.77

Unfortunately, with estimates ranging between -0.45 to -50 , these studies are not easily compatible. Nevertheless, it is possible to partially reconcile these divergent results.

The computer memory market can quite clearly be distinguished from the book industry. Technological progress in the memory market is astonishing. What was top-of-the-line rapidly becomes obsolete in the course of a few years. For example, the average price of a 128MB PC100 memory chip fell from over \$120 in September 2000 to just \$20 by September 2001. In such an environment, one would expect to observe the extreme price elasticities found by Ellison and Ellison

(2009a; b). Unless a firm reduces its price, consumers are content to wait for the next round of technological progress before purchasing a new memory chip.

In contrast, the book industry does not exhibit such progress. In general, books are not rendered obsolete with the passage of time. Nevertheless, consumers realise that bestselling books are likely to be sold at a temporary premium. As a book's popularity wanes, its price is likely to fall. In such circumstances, Brynjolfsson, Dick and Smith's (2010) relatively high price elasticities are to be expected. Unless the retailer discounts a new book, consumers are content to wait until the book leaves the bestseller shelves. At some point however, a book's price is likely to plateau. This is the situation described by Brynjolfsson et al. (2003) and Chevalier and Goolsbee (2003). At this point, customers are more price-inelastic – realising that the book is unlikely to be discounted further. Accordingly, they are less likely to 'shop-around' – reacting less to changes in price.

As can be seen, there are several issues with this data. Even when broken down by industry, the price estimates remain widely divergent. For example, the elasticity of 'normal books' is between one half and a 20th of bestsellers' elasticity. Moreover, all of the articles consider data from 2001 or earlier. Given the radical changes over the past decade, this data is unlikely to be representative of the current position. Accordingly, we simply note that price elasticities differ both across and within industries depending upon customer's predictions of future price changes. We regard the literature surrounding tax-price elasticities to be more accurate and up-to-date.⁵

2.2 Increased product range online:

The ability to locate and purchase a vast array of goods previously unavailable at conventional retailers arguably provides a greater motivation for the rise of e-Commerce than lower prices (Brynjolfsson et al., 2003).

Whilst conventional inventories are limited by shelf and storage constraints, internet retailers face no such issues. Centralised warehouses and drop-shipping arrangements with distributors, allow internet retailers to maintain an almost unlimited 'virtual inventory'. Moreover, "the enhanced search features and personalised recommendation tools offered by internet retailers"⁶ drastically increase product awareness – exposing consumers to a wider variety of products than was previously feasible at a conventional retailer.

Brynjolfsson et al. (2003) attempted to quantify the consumer welfare gain arising from the enlarged product variety made available over Amazon.com. In 2000, Amazon offered over 2.3 million unique titles for sale on its website – more than 23 times the size of an average Barnes & Noble superstore. Applying a conservative methodology and assuming that all US consumers live in close proximity to a Barnes and Noble superstore⁷, the authors estimated that, in 2000 alone, consumer welfare

⁵ See section 4.2.

⁶ Brynjolfsson, E., Hu, Y. & Smith, M. D. 2003.

⁷ This was a very conservative assumption. Barnes and Noble only have a limited number of superstores. Moreover, it is increasingly unlikely that consumers could visit 5 small independent stores and be exposed to around 100,000 unique titles. Looking at this in isolation therefore would suggest that the consumer surplus was in fact much larger.

increased by between \$731 million and \$1.03 billion. This gain was approximately 7.3 – 10.0 times larger than the gain in consumer welfare from increased competition and lower prices on the internet. However, due to flawed assumptions made by the authors, this estimate probably overstated the gain in consumer welfare. As a result, the authors (using an updated methodology) re-estimated the 2008 consumer welfare gain from sales of obscure books on Amazon – finding that consumer welfare had increased almost five-fold to between \$3.93 - \$5.04 billion (Brynjolfsson, Hu and Smith., 2010).⁸

In February 2011, the Association of American Publishers reported that eBook sales surpassed the sales of all other book formats (Sporkin, 2011). Given the importance of this new channel, Smith, Telang and Zhang (2012) sought to estimate the producer and consumer surplus that could be created by bringing all of the world's 2.7 million out-of-print titles back into print as eBooks. They found that consumer welfare would increase by approximately \$860 million in the first year alone if all out-of-print books were released as e-books.

The dramatic increase in consumer welfare found in these studies illustrates the importance that consumers place upon product variety. Given New Zealand's geographic isolation, one would hypothesise that New Zealand consumers would place increased value upon product variety than their US counterparts. This would suggest that New Zealand's consumer welfare gain would be proportionately larger than that found in the United States.

2.3 Product availability:

Consumers are also motivated by product *availability*. Gallino and Moreno (2012) analysed the consequences for a major US homeware retailer of implementing a buy-online-pick-up-in-store (BOPS) system. BOPS allows consumers to search stores' inventory online. If a nearby store has the product in stock, customers have the option of picking up the good from that store within two hours of purchasing it online. Given that consumers save on shipping costs and are able to pick the good up at their convenience, one would expect online sales to increase. However, the opposite occurred. Although online *traffic* increased, online *sales* within a 50 mile radius of a store *fell* relative to areas unaffected by the change.⁹ However, this decrease was more than offset by an increase in store traffic and sales.

These results are easily explained via information verifiability. Although stores listed their inventory online prior to the BOPS implementation, consumers realised that stores had no incentive to provide accurate information and accordingly disregarded it. Instead of driving to the store relying on unverifiable information, consumers preferred to purchase goods online, where their availability was guaranteed. In contrast, the obligation to provide the good within 2 hours of purchase requires stores to maintain accurate inventory records. The rise in foot traffic following BOPS' implementation shows that consumers prefer to view the good first-hand before purchasing, but will

⁸ This is very large given that revenues in the US book market in 2008 totalled 37.3bn. Growth of consumer welfare was therefore equivalent to between 10.5% – 13.5% of the size of the industry.

⁹ The study assumed that only customers within 50 miles of the nearest store would be affected by the implementation of the BOPS system on the basis that most customers would be unwilling to drive more than 50 miles to view a product before purchasing.

only do so if they believe the product will be available. Nevertheless, the effect of a BOPS may not be nearly as significant for standardised products such as books or DVD's where the need to see the good first-hand is significantly diminished (Gallino and Moreno, 2012).

As can be seen above, the availability of obscure titles on the internet has a significant impact upon consumer welfare, providing significant incentives for e-Commerce's growth. This motivation occurs in two distinct ways. First, the internet allows retailers to stock an enlarged range of products. Secondly, consumers experience frustration when they look for an item at a conventional bricks and mortar store, only to find it is out of stock. In the absence of reliable inventory information, consumers are driven online to ensure product availability. Such results would appear to be supported by the Frost & Sullivan/PWC report.¹⁰

2.4 Other drivers of online retail activity:

With the advent of e-Commerce, the traditional view that a high exchange rate benefits domestic retailers has been discredited (Infometrics, 2012). As the dollar appreciates, domestic retailers are forced to compete against international retailers whose prices become increasingly attractive. With the NZD sitting at record levels against the USD, this competition has become more intense, squeezing domestic retailer's margins in an already stagnant economy.

Recent technological and banking innovations have further facilitated the growth of e-Commerce. With the advent of Visa debit cards, children as young as 13 and consumers who are averse to credit cards now have the ability to purchase goods online or over the phone. More significantly however, is the recent proliferation of internet capable devices, such as smartphones, tablets and computers. With the rapid rise in internet connectivity, consumers are likely to become more comfortable with online purchases (Infometrics, 2012).

Finally, New Zealand operates a relatively high de minimis threshold for the collection of GST and tariff duties on overseas purchases. For goods that do not attract a tariff, no GST will be charged on purchases below \$400. Alternatively, for goods that attract a 10% tariff, such as clothing and footwear, the de minimis threshold falls to \$226.42. Given that many foreign retailers such as the Book Depository and ASOS (clothes retailer) provide free shipping, purchases that would initially overshoot the de minimis threshold can be easily split allowing consumers to legitimately evade import tariffs and GST.¹¹ From anecdotal evidence, it would also appear that online retailers' practice of (illegally) devaluing purchase amounts to enable GST and duties to be evaded is widespread.

¹⁰ 11% of New Zealander's surveyed said that the most important reason for shopping online was a more comprehensive product range, whilst another 11% stated that it was easier to locate the product online than in a store.

¹¹ The Book Depository's ability to provide free shipping may reflect the fact that New Zealanders are charged the VAT inclusive price. The Book Depository then recoups its shipping costs by claiming the VAT back from the U.K. government.

2.5 Summary:

In a relatively stagnant economy, the phenomenal growth of e-Commerce is astounding. A vast array of goods and services are now available online, 24 hours a day. Although technological advances and banking innovations have made it easier for people to transact online, the primary motivators of e-Commerce remain lower prices and increased product ranges. The government's decision to operate a high de minimis threshold provides an additional incentive for consumers to purchase goods from overseas retailers.

3. Who benefits from the rise in e-Commerce?

Internet retailing provides opportunities for both consumers and producers. Consumers largely gain from reduced search costs allowing them to take advantage of increased product ranges and lower prices. By the same token, the reduction of consumer search costs provides additional opportunities for retailers to expand their customer base through the internet.

3.1 Effect on consumers:

The rise of e-Commerce has had an enormous impact upon consumer behaviour. Reduced search costs and increased product varieties have changed consumer demand and increased consumer welfare. This has resulted in the rejection of the 'Pareto' principle of sales concentration as sales of niche products become significantly more important in online markets.

Traditionally, a small range of products have accounted for the lion's share of industry sales. New York Times bestsellers (books), top 40 billboard charts (CD's) and new releases (video rentals) have typically dominated industry sales in what is known as the 'Pareto' principle. This states that a small proportion of products in the market (e.g. 20%) often generate a large proportion of industry sales (e.g. 80%). However, it would appear that this principle is inapplicable to internet commerce. Using data provided by a direct sales retailer, Brynjolfsson, Hu and Simester (2011) found that internet purchases contain a significantly higher proportion of niche products than similar catalogue orders. Such a result can only be explained by reduced consumer search costs. Although prices, product descriptions and photographs were identical across both channels, internet customers can take advantage of recommender and search tools that are not available in catalogues. By allowing customers to more easily search, and find, their desired product consumer welfare is dramatically enhanced.

However, Brynjolfsson et al did not take into account the fact that a large proportion of online niche sales may simply be a reflection of the type of consumer who decides to purchase online, rather than changing consumption/demand patterns. Nevertheless, even after controlling for consumer variations, Zentner, Smith and Kaya (2012) concluded that the Pareto principle remains inapplicable to online sales. They analysed the differing consumption patterns of US consumers at a nationwide DVD rental store operating both physical and online rental services. Rentals of 'superstar' titles online were significantly less than at physical stores, whilst rentals of niche DVDs comprise a significantly higher proportion of rentals online than in-store. Such a result can be explained by lower search costs online, and increased product variety (Zentner et al., 2012).

This increase in consumer welfare resulting from internet retailers' longer tail has been quantified in several different studies of the US book industry. As noted earlier, it was estimated that Amazon's sales of niche books unavailable in bricks-and-mortar stores resulted in a consumer surplus of between \$3.93 to \$5.04 billion in 2008 (Brynjolfsson, Hu and Smith., 2010). This updated Brynjolfsson et al's 2003 study which found that Amazon's sales of niche books increased consumer welfare in 2000 by \$731 million – \$1.03 billion. Given that the 2003 study overstated the consumer welfare gain, one can easily see that over the course of 8 years, consumer welfare has increased more than 5-fold.

Moreover, Smith et al. (2012) estimated that if the world's 2.7 million out-of-print books were published as eBooks on Amazon, this would result in an increase in consumer welfare of \$860 million in the first year after publication. Such results indicate the importance of providing niche products that are easily accessible over the internet.

Nevertheless, the presence of search costs on the internet has prevented consumer welfare reaching its potential. Traditionally, the key driver of consumer search costs were travel costs and time incurred searching retailers for the best deal. Internet shopbots and search engines have made it far easier to compare both product offerings and prices. However, search costs remain significant. Brynjolfsson, Dick and Smith (2010) estimated that consumers face maximum search costs of approximately \$6.45 when using an internet shopbot to search for books online. Although comparing offers on a shopbot takes only a very short amount of time, consumers have more to consider (e.g. shipping cost and delivery times, taxes and reliability) – resulting in relatively high search costs.

Whilst this result appears surprising, the existence of non-trivial search costs has been confirmed in later studies. Pozzi (2012) estimated that consumers at a large US supermarket faced search costs of \$4 when purchasing cereal online. Given that most consumers would have pre-set preferences, the existence of such high costs clearly shows the drawbacks of e-Commerce. What makes this result even more significant is the fact that the average box of cereal only cost \$3.55 (Pozzi, 2012). The presence of such costs inhibit consumer welfare gains by reducing their proclivity to 'shop-around.'

Thus, although increased product variety and competition over the internet have led to large increases in consumer welfare, the presence of non-trivial search costs has reduced the size of the potential gain and prevented the internet from becoming a perfect market.

3.2 Effect on Firms:

Reduced search costs mean firms are more easily connected to customers, whilst recommender engines allow firms to display a vast array of goods that may have previously been unavailable in-store. Moreover, as the importance of location falls, firms are no longer geographically restricted, unlocking a vast array of previously inaccessible customers.

The increase in firm welfare/revenue from internet sales was quantified by Smith et al. (2012) in a study of the potential US market for out-of-print eBooks. Given large fixed costs, publishers will only

re-print books if the expected residual demand after the first print run exceeds 500 – 1000 copies. Spread over the entire industry, publishers neglect an enormous amount of revenue. However, with the advent of eBooks, the fixed costs of publication fall dramatically – enabling publishers to meet this previously unfulfilled demand.¹² Smith et al. (2012) found that even after deducting Amazon’s commission, publishers would receive an additional \$460 million in the first year after publication if they released all of their out-of-print titles as Kindle eBooks. For an industry with total revenue of \$37.3 billion in 2008 this represents a substantial future revenue stream.

However, as the online retail market remains exceptionally clustered, these benefits do not accrue to all companies, nor to all countries. For example, Amazon controls approximately 60% of the ebook market, while Barnes and Noble’s Nook eReader accounts for approximately 25% (Auletta, 2012). This has important consequences in relation to the enforcement of GST online. As New Zealand online retailers already charge GST, the enforcement of a lower de minimis level would only affect offshore retailers directly. As their prices rise by 15%, sales and producer surpluses would correspondingly fall. As these benefits accrue outside New Zealand, the loss of their producer surpluses should be of no concern to the government. Moreover, as domestic retailer’s prices would remain unchanged, some consumers would redirect their spending, increasing domestic sales and producer surpluses.

The rise of online retail has also had significant consequences for some brick and mortar retailers. Where in-store service is not vital, such as when goods are homogenous, many conventional retailers are unable to withstand the intense price competition leading to substantial business attrition. The recent exit of Marbecks from the CD retail market provides a pertinent example. There is increasing evidence that many bookstores have bowed to commercial pressure and have had to close.¹³ Given that most of this competition lies offshore, and a large proportion of offshore retail purchases will fall under the de minimis level, the decline of the NZ retailing industry has the potential to undermine a significant proportion of the tax base (via losses of corporate, PAYE and GST taxes).

4. Online Retailing and fiscal Policy:

For clarity, this report considers the arguments surrounding the de minimis level for offshore purchases in isolation. As many of these arguments were raised during the late 1990’s and early 2000’s, the report then focuses upon the subsequent literature addressing the validity of these arguments. Finally, the report examines the literature addressing the consequential effects of active enforcement of a lower de minimis threshold upon retailer behaviour and incentives.

¹² The cost of scanning a book to be placed on Amazon.com is approximately \$10, sourced from <http://www.opencontentalliance.org/2009/03/22/economics-of-book-digitization/>

¹³ This is evident in Booksellers New Zealand’s membership. Between 31 March 2000 and 30 January 2013, membership fell from 458 to 395 Booksellers. However, it must be noted that 10 members are still operating (former airport stores owned by Whitcoulls now owned by Relay who are not members).

4.1 Arguments for and against the imposition of GST upon online sales:

“To justify lower tax rates for e-commerce requires some positive externality or some especially high cost of compliance.”¹⁴

There is an extensive body of literature considering the effects that the US tax system has had upon both the distribution and size of online retail markets across states. For the most part, this is directly applicable to New Zealand.

The United States operates a two-tiered tax system. Although taxes are levied at both the federal and state level, sales taxes are only imposed by individual states. In 1977, state revenues were dealt a substantial blow by the Supreme Court decision in *Complete Auto Transit Inc. v. Brady* (430 U.S. 274). This held that states could only compel companies to collect sales tax if they had a physical presence or nexus within the state. Although physical presence/nexus was defined widely to include warehouses, retail stores and corporate headquarters, it remains relatively easy for consumers to avoid paying sales taxes. For example, if a Texan bought a pair of jeans online from a clothes retailer based in California, the State of Texas cannot force the Californian retailer to add Texas sales tax to the purchase. If, however, the retailer operated a store in Dallas, sales taxes would be payable. The operation of the de minimis rule in New Zealand is equivalent. Foreign retailers are not required to collect GST on behalf of the New Zealand government, and consumers are not required to pay GST unless the value of the consignment exceeds the de minimis threshold. As a result, most of the literature studying the US accurately describes the present situation in New Zealand.

The arguments supporting the enforcement of sales taxes on offshore (or in the US out-of-state) internet purchases are relatively simple and are not extensively covered in the literature. They can be summarised as follows.

First, imposing a sales tax or GST on out-of-state purchases is simply an enforcement of an existing tax. Under the Goods and Services Tax Act, all goods (with few exceptions) purchased for consumption in NZ are subject to GST of 15%.¹⁵ New Zealand’s decision to operate a relatively high de minimis threshold for offshore purchases reflects an exceptionally “accommodative taxation policy” providing an incentive for NZ-based consumers to purchase goods online from offshore retailers (Infometrics, 2012). This has the potential to significantly weaken the government’s tax revenue.

As Newman (1995) vividly remarked, “state and local government finances are becoming road kill on the information superhighway”. Although such a statement may overstate the problem, the fear is more real in New Zealand than it is in the US. In the US, state sales taxes simply provide an incentive to engage in out-of-state purchases. Whilst the state misses out on sales tax revenue, the purchase remains in the US and is accordingly subject to a myriad of corporate and income taxes. In contrast, the incentive in New Zealand is to purchase goods overseas. As consumption is diverted from

¹⁴ Goolsbee, A. & Zittrain, J. 1999.

¹⁵ Section 8(1) of the Goods and Services Act 1985.

domestic to offshore retailers, domestic employment and retail profits fall. This translates into reduced PAYE and company taxes – further compounding the government’s loss of GST revenue.

Finally, as noted by Goolsbee and Zittrain (1999), the failure to tax internet purchases has undesirable distributional effects. Online purchasers have traditionally been disproportionately younger and more technologically savvy (Goolsbee, 2000a). As a result, the government’s current policy provides an indirect transfer to those consumers who choose to purchase goods offshore, whilst the computer illiterate and elderly are placed at a significant disadvantage. Nevertheless, such an argument is becoming less pronounced over time (Goolsbee and Zittrain, 1999). As an increasing proportion of the population becomes technologically literate, the distributional effects appear to reduce significantly.

Groups such as Booksellers New Zealand and the Retail Association are advocating for a level playing field. From their perspective, the active enforcement of a lower *de minimis* threshold would not only support local businesses, but would also unlock a large stream of previously untaxed expenditure. Any adverse changes in consumer welfare resulting from the enforcement of GST on offshore internet purchases should simply be regarded as an unfortunate by-product of the 1985 policy decision to implement an all-inclusive GST regime.

On the other hand, the arguments *against* the enforcement of sales taxes on internet purchases were extensively covered during the late 1990’s and early 2000’s following the US government’s introduction of the Internet Tax Freedom Act in 1998. This Act temporarily prevented the imposition of any new taxes upon internet commerce for 3 years¹⁶, but *did not* prevent the enforcement of existing sales taxes upon online purchases.

One of the largest issues faced by the United States is the significant administrative costs incurred by US companies in collecting and processing sales taxes (Goolsbee and Zittrain, 1999). With over 6,400 US sales taxes, companies face the herculean task of identifying customer locations, and then remitting the sales tax back to the various local and state authorities. This task is further complicated by the vast array of exceptions unique to each state. Such an argument is inapplicable to New Zealand due to our exceptionally simple GST regime. Sales are taxed at 15%, and are only collected by the central government. GST administrative costs for NZ companies are negligible compared to the sales tax costs in the United States.

Two main arguments have been raised against lowering the *de minimis* level. First, as Goolsbee and Zittrain (1999) note, taxing internet commerce will inevitably lead to social under-provision. Secondly, the government faces significant enforcement costs due to the (present) need to manually inspect all packages entering the country.

The strongest theoretical argument against sales tax enforcement is an ‘infant industry’ argument. Essentially, the government should attempt to encourage e-Commerce’s development, rather than prematurely stifling its growth in an attempt to boost flagging tax revenues. Imposing a sales tax upon online purchases may lead to social under-provision due to information problems and a loss of

¹⁶ This Act has been extended several times and is now up for renewal in 2014.

network benefits (Goolsbee and Zittrain, 1999). Such under-provision has the potential to drastically lower consumer welfare throughout the economy.

The internet offers a prime example of network effects. As the number of users and websites grow, the value of the internet to each user grows. By taxing e-Commerce before these network effects have been created, the government risks stifling internet growth – thereby drastically reducing its benefit to both current and future internet users (Goolsbee and Zittrain, 1999). Secondly, under-provision may occur due to information problems (Goolsbee and Zittrain, 1999). The internet inherently suffers from information problems. Consumers are initially reluctant to enter their credit card details on a website. However, as more people engage in online shopping and discover that their credit card security has not been compromised, internet commerce will rise to a socially desirable level. By removing one of the motivations for purchasing online, the government will further slow the growth of the internet. Nevertheless, as Goolsbee and Zittrain noted in 1999, these are “strictly short-run justification[s]”. Given the proliferation of internet capable devices and the vast reliance that most individuals nowadays place upon the internet, it would appear that the internet has grown beyond the need for such protection.

Finally, the strongest practical argument relates to Customs’ enforcement costs. At some point, the collection costs outweigh the tax revenue from collection. Although this review does not seek to address Customs’ enforcement costs, we recognise that there is a practical need for a de minimis limit. This is the strongest barrier to the enforcement of GST upon all imported purchases.¹⁷

4.2 The effects of the government’s “accommodative taxation policy” upon e-Commerce:

The government’s decision not to levy GST on purchases under the de minimis threshold undoubtedly creates a strong incentive to purchase goods from offshore retailers. The extent of this incentive has been the subject of several US studies. As can be seen in the table below, there is a considerable degree of variation in the observed results. This may be expected given that the studies span a decade of research during which internet use has become increasingly prevalent.

Table 2 - Tax-Price Elasticity Estimates

Paper	Data Source	Tax elasticity estimate
Goolsbee. <i>In a world without Borders</i> (2000)	Forrester Research Survey of 110,000 US Households – December 1997	-3.5
Goolsbee, <i>Internet Commerce, Tax Sensitivity and the Generation Gap</i> (2000)	Forrester Research Survey of 85,000 US Households – December 1998	-2.4
Alm and Melnik, <i>Sales taxes and the decision to purchase online</i> (2005)	Computer Use and Internet Access Supplement to the Current Population Survey – December 2001	-0.52
Ellison and Ellison, <i>Tax Sensitivity and Home State Preferences in Internet Purchasing</i> (2009b)	Pricewatch.com data from May 2000 to May 2001 for the US Computer Memory Market, plus sales data from two retailers	-5.94
Einav et al, <i>Sales Taxes and Internet Commerce</i> (2012)	Complete eBay browsing and purchasing data from 1 January to 31 December 2010	-1.8

¹⁷ See for example Customs’ working paper which stresses the costs of implementing a de minimis threshold.

In a pioneering study, Goolsbee (2000a) assessed tax-price elasticity for online purchases. Using data from Forrester Research's December 1997 survey of 110,000 US households, and controlling for a variety of factors such as metropolitan boundaries, Goolsbee (2000a) assessed the likelihood of individuals purchasing goods online – concluding that the mean tax-price elasticity for online buyers was -3.5. In other words, given the average US state sales tax rate of approximately 6%, the enforcement of sales taxes on online purchases would potentially reduce the number of online buyers by as much as 24%. This tax sensitivity is directly observable in the 1997 data following Goolsbee's categorisation of online purchases. In categories where the consumer was likely to avoid sales taxes, online purchases were significantly higher than categories where sales taxes were unavoidable (Goolsbee, 2000a).

Goolsbee rapidly updated this result, using data from the December 1999 survey, revising his tax-price elasticity estimate down to -2.4 (Goolsbee, 2000b). Interestingly, he also found that whilst new internet users initially had little tax sensitivity, as they gain experience and become aware of sales tax advantages, their tax sensitivity increased dramatically.

Goolsbee's (2000a; b) methodology has been criticised in several articles. Both Ellison and Ellison (2009b) and Alm and Melnik (2005) raise concerns that Goolsbee insufficiently controlled for consumer characteristics across the data – potentially invalidating his result. Controlling for access to the internet and increased consumer variability, Alm and Melnik (2005) analysed tax effects upon the decision to purchase online. Evaluating the US Department of Labour's December 2001 "Computer Use and Internet Access Supplement to the Current Population Survey", the authors concluded that the US consumer's tax elasticity was approximately one quarter of Goolsbee's estimate. This was supported by a later article examining the same data.¹⁸

However, the elasticities provided by Goolsbee (2000a) and Alm and Melnik (2005) are coarse and do not address the issues raised in this report. Both papers use survey data to ask whether consumers would continue to purchase goods online after sales taxes have been introduced. The elasticity that emerges from such data describes consumer's proclivity to purchase goods online – but does not address the quantity of goods demanded. As a result, both Ellison and Ellison (2009b) and Einav et al. (2012) used quantity data from e-retailers to estimate the elasticity of quantity demanded relative to sales tax rates more accurately.

Nonetheless, Ellison and Ellison (2009b) appear to confirm Goolsbee's headline result. Using click-through data from a shopbot, and quantity data from two websites listed on the shopbot, Ellison and Ellison (2009b) examined the effect taxes had upon US sales of computer memory chips over the period May 2000 to May 2001. Although the shopbot did not calculate sales tax payable by the consumer, it listed the retailer's home state so that consumers could take sales tax differences into account. Their results indicated an offline tax price elasticity of 5.94 – for every 1% increase in the offline state sales tax rate, online purchases from within that state are expected to rise by 5.94% as consumers seek to avoid the higher tax rate. This implies that if sales taxes were enforced, online purchases would fall by approximately 30% – more than Goolsbee's initial result.

¹⁸ Scanlan, M. A. 2007.

The benefit of Ellison and Ellison's study comes from their ability to test their result using quantity data provided by two Californian retailers listed on the shopbot. Given that California had a sales tax of 7.25%, one would expect that online purchases made by Californians (subject to sales taxes) would be approximately 35% lower than would otherwise have been predicted. In reality, sales were 67% lower than expected – suggesting that the tax-price elasticity may be even higher than estimated (Ellison and Ellison, 2009b). The large variation between actual and predicted sales clearly indicates that consumers seek to maximise sales tax advantages when purchasing online.

Although the elasticities and analysis contained in the papers above are useful as comparisons, there are several flaws. One of the main issues is that none of the papers studied has quantity data from a dominant retailer. More damning is the date of these studies. All of the data studied dates back to 2001 or earlier. Given the vast increase in internet connectivity and technological progress over the past decade, such data is likely to be misleading and out-dated. These hurdles were significantly overcome in a collaboration between Stanford University and eBay.

Data from eBay is particularly robust for the following reasons. First, the eBay marketplace "is large and diverse, with millions of buyers and a huge array of sellers and product categories."¹⁹ Moreover, annual sales through the eBay marketplace amount to roughly \$30 billion, or approximately 30% of the US \$100 billion retail market. From this enormous sample, Einav et al (2012) restricted their analysis to all items listed with a posted price and at least 10 available units on eBay over the period 1 January to 31 December 2011. Two highly significant results emerged from this study.

First, consumers on eBay have an offline-sales tax price elasticity of around 1.8. Thus, if sales taxes rise by one per cent, one would expect an increase in online purchasing of 1.8%. This contrasts significantly to Goolsbee (2000a) who estimated the elasticity to be 3.5, and is even less compatible with Ellison and Ellison's (2009b) estimate of 5.94. Whilst these results may seem discordant, one must consider that Einav et al's data reflects *actual* rather than *predicted* sales, covers a larger variety of goods, and is much more recent – reflecting increased technological penetration.

Secondly, an increase in state sales tax (or enforcement of sales tax upon in-state online retailers), negatively affects in-state retailers. For every 1% increase in state sales taxes, the volume of sales at in-state online retailers falls by approximately 3 – 4 per cent. Thus, when the state increases their sales tax, consumers increase online purchases by about 1.8%, but lower their demand from in-state online retailers. Applied to New Zealand, if the government removed the de minimis level, purchases from offshore retailers would fall between 45 – 60%. The effect of this reduction would be offset by a 27% increase in demand at domestic online retailers. Moreover, one would expect to find an increase in sales at conventional stores as their price disadvantage becomes less apparent.

Einav et al's findings appear to be confirmed in an earlier study of the decline in online sales after a multichannel retailer²⁰ opened a store, requiring the retailer to collect sales taxes of between 4 and 6% on all forms of revenue collected in that state (Anderson, Fong, Simester and Tucker., 2010). After controlling for state effects, using a neighbouring state with no sales tax, the authors found

¹⁹ Einav, L., Knoepfle, D., Levin, J. D. & Sundaresan, N. 2012.

²⁰ A multichannel retailer is a retailer that sells its products via catalogue, internet and retail stores.

that internet sales declined by 11.6% following the opening of the retail store. This implies a tax price elasticity of between -1.93 and -2.9 (depending upon the state's sales tax rate – undisclosed by the authors).

A further source of contention surrounds consumer sensitivity to sales tax relative to item price changes. The more sensitive a consumer is to sales taxes relative to producer price changes (e.g. because of material price increases), the larger the decline in online purchasing following the introduction/enforcement of sales taxes on online purchases. Two very influential papers, both using shopbot data from around the same period, but for different goods and different shopbots came up with two contrasting results. Smith and Brynjolfsson (2001) relied on data collected from book customers at EvenBetter.com from 25 August to 1 November 1999. One of the main advantages of EvenBetter.com for consumers is the automatic calculation of the sales tax payable at various retailers. On the other hand, (Ellison and Ellison, 2009b) analysed data obtained by Pricewatch.com over four different computer memory chip modules from May 2000 to May 2001. In contrast to EvenBetter.com (used by Smith and Brynjolfsson), Pricewatch.com *does not* calculate the sales tax payable on any purchase. Instead, it simply provides the home state(s) of the retailer. Consumers must manually assess whether the good is being sold from an in-state or out-of-state retailer.

Given that both products being studied (books and computer memory chips) are homogenous, and are being bought via shopbot websites, one would expect that consumers would exhibit very similar purchasing profiles. However, this is not the case. Smith and Brynjolfsson (2001) found that EvenBetter.com customers were approximately twice as sensitive to sales tax as they were to changes in the underlying book price. Thus, consumers would react more strongly to a \$0.01 increase in sales tax, than a \$0.01 increase in the books price – even though they have the same effect. In contrast, Ellison and Ellison (2009b) found there was a less than one-for-one relationship. That is “consumers do not pay as much attention to differences in taxes as they do to differences in pre-tax prices when choosing between e-retailers” (Ellison and Ellison, 2009b).

Ellison and Ellison's (2009b) study has several strengths. First, Ellison and Ellison's data was larger, and more recent. Smith and Brynjolfsson only sampled 69 days in 1999. Ellison and Ellison on the other hand used data from May 2000 to May 2001. Not only was the time frame larger, but during this period there were significant advances in computer memory, causing the average price of one chip to fall from \$120 to around \$20 over the course of the year. Such a dramatic fall allowed Ellison and Ellison to map the effects of price and sales tax changes more accurately than Smith and Brynjolfsson. Moreover, most overseas purchases made by New Zealand customers are denominated either in foreign currency, or are GST-exclusive prices (e.g. BookDepository.com). Therefore, it would be an accurate assumption that NZ consumers who are purchasing goods online from foreign retailers would have to manually work out the GST component of their purchase. Accordingly, Ellison and Ellison's results are far more applicable in NZ than Smith and Brynjolfsson's. Thus one might expect New Zealanders to react less to changes caused by GST, than by changes in the item price.

However, it must be noted that this US analysis *may not be* directly applicable to New Zealand. There is no de minimis threshold in the US. All out-of-state purchases escape sales taxes – regardless

of the goods price.²¹ In contrast, 'large' purchases from offshore retailers (that is, purchases exceeding the de minimis threshold) are already subject to GST. As a result, luxury goods such as books may have a higher elasticity than those observed in the U.S. On the other hand, offshore purchases under the threshold may be more inelastic as they represent a far smaller proportion of income compared to purchases that exceed the de minimis threshold. In the absence of any data, we believe that Einav et al's (2012) study most accurately reflects the New Zealand market.

4.3 Home bias – can it counter negative tax effects?

The literature paints a relatively dire picture for the government. Increasing GST rates raises offshore internet purchases whilst reducing demand for both online and offline domestic retailers. However, the reality may not be so grim.

Consumers exhibit strong preferences for goods produced 'close to home'. This 'home bias' is a major feature of online commerce. In a study of the 2001 US computer memory market, Ellison and Ellison (2009b), found that in certain circumstances (such as when the chip is worth less than \$100), home state preferences *may* outweigh negative tax effects. However, as their data did not support this result one may question its validity. Nevertheless, several studies have confirmed the existence of geographical effects.

Hortacsu, Martinez-Jerez and Douglas (2009) assessed the effect of geography upon sales through eBay and MercadoLibre²². Given that these sites facilitate a vast array of trade, and have an incentive to reduce any distance effects in order to increase sales, data provided by them is particularly robust. The authors found that as the distance between purchaser and seller doubles, sales on eBay decline by around 10%. Although this appears to support Ellison and Ellison's (2009b) conclusion that for every additional delivery day, sales of computer chips fall by 10%, these results may understate the distance effect. Data from MercadoLibre would suggest that the decline could be as large as 43% (Hortacsu et al., 2009). Given that MercadoLibre facilitates trade across countries, rather than interstate US trade, this result may be more applicable to New Zealand.

Moreover, Hortacsu et al. (2009) further found that US intrastate trade on eBay was around 1.8 to 3 times higher than expected. This finding was reciprocated on MercadoLibre. Importantly, the authors found that consumers same country preferences were six times stronger than their same-province bias.

There are several rationales underlying such results. Given consumer's desire for immediate gratification, and aversion to large delivery costs, one would expect that shipping times and costs would substantially explain consumers' home bias. However, data from eBay provides only limited support for this proposition. Far more important is the availability of recourse. If one party fails to fulfil his side of the bargain, the ease of obtaining recourse is substantially reduced if the other party is located in a different country or state (Hortacsu et al., 2009). Moreover, even if recourse is

²¹ However, it must be noted that customers have an obligation to pay a 'use' tax equivalent to the sales tax. The larger the purchase, the more likely the state will investigate whether a purchase has been made.

²² MercadoLibre is the largest Latin American online auction site – equivalent to eBay in the US and Trademe in New Zealand. Data from eBay February – May 2004; data from MercadoLibre August 2003 – July 2004.

available, return postage costs will be higher the greater the distance between parties. These concerns may provide further explanation for Smith and Brynjolfsson's (2001) finding that consumers display strong preferences for branded stores.

Whilst these results expose significant geographical effects, their findings may not be directly applicable to New Zealand. It is important to be aware that both Hortascu et al's and Ellison and Ellison's studies focus on individual sellers and buyers. One would doubt whether purchases from offshore auction sites such as eBay, or foreign one-man firms would constitute a significant proportion of New Zealand e-Commerce. Instead, we believe that the majority of sales would be at trusted and well known retailers such as Amazon and ASOS. This is not to suggest that New Zealand consumers display no home biases, but that the results may not be directly applicable. On the one hand, the bias may be stronger due to our relative isolation resulting in increased shipping times, costs and increased difficulty in obtaining recourse. Alternatively, given the limited variety of goods in New Zealand, consumers may be more open to purchasing overseas – resulting in a lower bias.

In the absence of any data, it is difficult to predict the extent of New Zealand's home bias. Nevertheless, the existence of such biases will reduce the negative tax effects resulting from the enforcement of GST upon offshore purchases. With the removal of tax advantages, one would expect to see a convergence in prices between domestic and foreign online retailers. As the price differences reduce, one might observe an enhanced home bias. For example, if an Australian retailer had an after-tax price advantage of around \$2 over a domestic retailer, one might expect that some consumers would repatriate their purchases. This would suggest that lowering the de minimis threshold could provide an additional boost to domestic retailers – over and above the initial tax effects.

4.4 The effect of sales taxes upon firm location decisions – a US analysis:

In the US, sales taxes not only affect consumer behaviour, but also retailer location decisions. "This presents retailers with a trade-off: Should they forgo the benefits of opening a store to avoid damaging demand in [their internet sales]?"²³ Using data from 2005, Anderson et al (2010) considered this question by analysing 14 retailers with less than 200 stores across the US.

Two important findings emerged from this research. First, the average sales tax rate for retailers deriving 70% or more of their revenue from direct sales was only 2.65% (at the time, the average sales tax across the US was 4.90%). In contrast, retailers who derived most of their revenue from physical stores faced an average sales tax rate of 5.06%. Despite the benefits accruing to firms in high-tax locations, direct sales retailers are unwilling to enter these markets for fear of materially damaging their internet sales.²⁴ Secondly, the authors found that for a 100% direct channel retailer, a 1% increase in the sales tax rate reduces the likelihood of the company opening a store in that state by between 3 – 4% (Anderson et al., 2010).

²³ Anderson, E. T., Fong, N. M., Simester, D. I. & Tucker, C. E. 2010.

²⁴ States with high sales tax rates often have large, prosperous populations – for example California, New York and Texas.

It is important to note that this analysis may not be directly applicable to New Zealand. Any sales made in New Zealand, regardless of the channel, are already subject to GST. However, once a firm opens a retail store within the country, one would expect that consumers would look for a domestic, rather than foreign, domain name. It would be far more difficult for firms to divert consumers to a foreign website in order to avoid GST. As a result, some firms may be discouraged from entering the New Zealand retail market.

5. Conclusion:

In 1920, John Maynard Keynes famously remarked that “[t]he inhabitant of London could order by telephone, sipping his morning tea in bed, the various products of the whole earth, in such quantity as he might see fit, and reasonably expect their early delivery upon his doorstep.” In the past two decades the New Zealand retail market has undergone a rapid transformation. What was traditionally bought in stores is now increasingly being bought online. As with all radical changes, this has had important ramifications throughout the economy. This report presents the findings of over a decade of academic research into the effects e-Commerce has had upon both the retail market and the government’s fiscal policy.

All goods or services sold for consumption within New Zealand are subject to GST at a rate of 15%. As a model of simplicity, our GST regime is admired throughout the world. However, an enormous loop-hole has emerged. Any purchase made at an offshore retailer under the de minimis threshold is currently GST-free. Given the present state of e-Commerce, we believe that this loop-hole is now unjustifiable. In our view, the government’s policy is distortionary, provides adverse incentives and unnecessarily disadvantages domestic retailers to the detriment of society.

One of the key drivers of e-Commerce is lower online prices. This is a partially artificial motivation given the government’s GST policy. At present, foreign retailers have an implicit 15% price advantage over comparable domestic retailers. This appears to go against the original 1985 policy decision to implement an all-inclusive tax regime. By diverting domestic spending offshore, the government not only misses out on GST revenue, but as demand for domestic retailer’s falls, company and PAYE taxes are also reduced. The current policy may also deter businesses contemplating entry in the New Zealand retail market.

Traditionally markets have been governed by the Pareto principle. A small proportion of products (e.g. 20%) provide a large proportion (e.g. 80%) of the industry’s revenue. In contrast, online retailers derive a significantly higher proportion of their revenue from niche products. The changing shape of the internet marketplace reflects the more accurate fulfilment of consumers’ demand. Reduced search costs have allowed consumers to find products matching their preferences more accurately. Given New Zealand’s geographic isolation and smaller marketplace, increased product variety online is a particularly important source of consumer welfare gain.

Inevitably, no study is directly applicable in a different context. However, we believe that Einav et al’s (2012) year-long study of eBay data is broadly applicable in New Zealand. If the government were to remove the de minimis loop-hole, this predicts a 45 – 60% decline in demand for offshore retailers offset by a 27% increase in demand for domestic internet retailers. Not only would

government revenue rise, but domestic retailers would be revitalised, resulting in increased employment and higher company and PAYE taxes. We believe this result provides clear evidence that the government should review its policy.

In our view, the theoretical arguments supporting the government's current policy are no longer valid. The internet is now firmly established. Consumers now derive significant utility from the internet and are no longer afraid of providing credit card details online. Taxing e-Commerce will not destroy the market. Moreover, a lower de minimis threshold may encourage foreign firms to establish a physical presence within New Zealand.

We believe that the government should review its current policy with the view to reducing its current de minimis level drastically. With the increase in company and PAYE taxes, it would be possible for the government to set the new limit below its enforcement costs. Such a change would result in an increased tax take and a revitalised retail sector, offsetting any decline in consumer welfare.

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Glossary:

Consumer Welfare: Also known as consumer surplus. A measure designed to calculate the benefit to consumers of a good/service over and above the purchase price. The higher the consumer welfare gain, the more beneficial the good/service is for the consumer. For example, if consumer X was willing to pay \$15 for a book that sold for \$10, but consumer Y was only willing to pay \$11, then consumer X would have a surplus of \$5 and Y would have a surplus of \$1.

Elasticity: A measure of the responsiveness of demand to a change in a goods price. Mathematically elasticity is defined as:

$$\text{Elasticity} = \frac{\% \text{ change in quantity}}{\% \text{ change in price}}$$

The more inelastic a good/service (the larger the elasticity), the more responsive demand is to changes in price. Thus, if a good has an elasticity of -0.5, a 1% increase in price leads to a 0.5% decrease in demand. If, however, its elasticity was -5, a 1% increase in the good's price leads to a 5% decrease in demand.

Pareto Principle: A rule often used to describe traditional retail industries. A small proportion of products in the market (e.g. 20%) often generate a large proportion of industry sales (e.g. 80%).

Producer/Firm Welfare: Also known as producer surplus. A measure designed to calculate the benefit to a firm over and above the sales price. For example, if a publisher was willing to sell a book for \$7, but the market price was \$10, then the publisher derives a surplus of \$3 for every book sold.

Search Costs: The time, energy and money expended by a consumer researching a good/service. These costs may not necessarily be monetary, e.g. time spent comparing retailer's offers, but they can be quantified.

Shopbot: An online price comparison service which displays prices and other information such as shipping time from online retailers for a particular good or service. For example, webjet.co.nz searches airlines to find cheap airfares, whilst pricespy.co.nz allows consumers to search retail products.