

New Zealand Review of Economics and Finance

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Welcome to the second volume of the New Zealand Review of Economics and Finance. The New Zealand Review of Economics and Finance is a publication run by undergraduate and postgraduate students at Victoria University of Wellington. We aim to publish high quality student work, with the goal of encouraging scholarship and interest in economics and finance. In this issue we feature a wide range of student research.

Tate reviews the insurance industry before and after the Christchurch earthquakes, examining changes in regulation and how the incidents reshaped the industry. Khytko performs an interesting comparison on uniform taxation to various taxation systems in terms of efficiency. Bristow investigates inclusion of the exchange rate channel into monetary policy rules, and looks at how several central banks are currently addressing exchange rates when determining interest rates. Finally Carey presents an inclusive analysis of the economic effects of colonisation of India. We also feature a book review: Suleman reviews Hoti and McAleer's *Modelling the Riskiness in Country Risks Ratings*.

Reserve Bank of New Zealand Best Essay Prize

The Reserve Bank of New Zealand provides a prize for the best essay in the Journal. The prize for this year was awarded to James Tate. We are thankful to our selection panel for the prize:

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An examination into who paid the costs of the Canterbury earthquakes

James TATE

Abstract

Insured losses in the Canterbury earthquakes have been estimated at over \$23bn. The size of these losses pushed the NZ insurance industry and its members to their limits following the quakes, though the losses will ultimately be borne by NZ policy holders in the long term. Insurance industry reform was underway before the quakes but they provided a strong motivator for regulatory change to add further stability. NZ has depleted the EQC earthquake fund and must therefore rely on a strengthened insurance industry to guard against natural disasters in the future.

1 Introduction

When Canterbury experienced a 7.1 magnitude earthquake on September 4th 2010 the New Zealand insurance industry faced the single most expensive event it had ever experienced. Less than six months later this record was surpassed again, with a devastating 6.3 magnitude quake on February 22nd 2011. The economic loss from these quakes, and subsequent aftershocks, has been estimated at \$30bn - over 15% of New Zealand's annual GDP.

This essay explores how the earthquakes and subsequent losses have shaped the NZ insurance industry. I explore who is liable for the substantial financial costs of the quake, and how the liable parties have motivated changes within the insurance industry. I unravel the complex interdependencies between some of the industry's key players, isolating each of their roles in the aftermath of the quakes.

The essay proceeds as follows: Section 2 looks at the state of the NZ insurance market before the Canterbury earthquakes. Section 3 of the essay details the immediate cost of the quakes. Section 4 examines the role of four groups in paying for the quake losses: NZ insurance companies, EQC, international reinsurers and NZ policy holders. Section 5 looks at the regulatory change in the NZ insurance market coinciding with the earthquakes. Section 6 then explores how the insurance market looks today.

2 The NZ Insurance Industry Preceding the Canterbury Earthquakes

Prior to the Canterbury earthquakes the New Zealand insurance market could be summarised as very competitive, with premiums driven relatively low and firms relying on product differentiation to entice customers. The five largest non-life insurance companies were Insurance Australia Group (IAG), Vero Insurance New Zealand, Lumley General Insurance, AMI Insurance and Tower Insurance (Reactions, 2011). All of these firms, with the exception of AMI, had large parent companies in Australia.

As is standard practice in the insurance industry, retail insurers were reliant on international reinsurance firms to take major risks off NZ books. Essentially this is a contract that provides local insurance firms with protection against large scale events. McKenzie (2011) suggests that, when viewed from a reinsurer's perspective, reinsurance is less of an insurance product and more of an international investment product. As such, when the international firms consider NZ reinsurance products they weigh the risk of disaster against the size of the premiums, just as risk is weighed against expected returns for all financial investment decisions.

Since NZ firms had a relatively low rate of claims compared to international firms, including our close neighbours Australia, NZ reinsurance products were generally considered low risk investments. As a result the premiums charged for the reinsurance cover were relatively low. Given the historically small impact New Zealand accounts had on the books of large Australian companies, many of those firms with parents in Australia reportedly leveraged their reinsurance based off their parent company- paying little attention to the underlying fundamentals of NZ policies (McKenzie, 2011).

New Zealand also has a Government run Earthquake Commission (EQC), which acts as a financial back-up for insured residential New Zealanders in the event of a natural disaster. For any retail insurance policy, a small portion of the premiums are forwarded on to EQC in return for natural disaster insurance cover. This premium was 5 cents for every \$100 of insurance cover, up to a maximum of \$69 annually (English, October 2011) The maximum cover provided to the policy holder in a disaster is \$100,000 for homes and \$20,000 for contents, with any shortfall being borne by the retail provider of the insurance policy (EQC, 2011).

The rare nature of natural disasters allowed EQC to build up a substantial "nest-egg" of \$6bn in their Natural Disaster Fund as a result of collecting of premiums without facing any large pay-outs. On top of this, their funds are reinsured by international organisations for any event claims above \$1.5bn, up to a maximum of \$4bn, and they are guaranteed by the NZ Government

should they face a situation where their obligations exceed their access to capital.

New Zealand historically maintained one of the most unregulated insurance industries of all our trading partners. Following a Government review of the Regulation of Non-Bank Financial Products and Providers in 2005, development of a regulatory structure for the industry began (Dean, 2010). Commentators agreed that a degree of regulation and monitoring would ensure improved stability in an increasingly important market. The Reserve Bank of New Zealand (RBNZ) was the obvious choice as the market ‘watch dog’ due to their experience in regulating and supervising banking activities.

Though the proposal for insurance market supervision was issued as early as 2005, there is no doubt the global financial crisis encouraged its timely development. When the world witnessed how the potential collapse of insurer AIG threatened to throw the entire US economy into a deep recession, the importance of insurance companies in the global economy became apparent. New Zealand shared the concerns of many nations around the world, in reference to a loosely regulated industry having such significant influence over the national economy. It was in this setting that the Insurance (Prudential Supervision) Act 2010 was drafted, in a bid to add transparency and stability in the insurance market, and hence the NZ economy as a whole.

3 The Cost of the Quakes

In the early hours of the 4th of September 2010, a 7.1 magnitude earthquake hit 40km west of Christchurch. There was widespread damage to infrastructure, as well as residential properties and some historic buildings. Despite two people suffering serious injuries, there were no deaths directly attributed to the earthquake- a fact credited to the early hour at which the quake struck.

Following the quake, the citizens of Christchurch remained very aware of the earthquake risks, and were frequently reminded of these risks by on-going aftershocks. This provided some motivation toward part of the central city, and some particularly unstable buildings, being cordoned off to prevent public access (CCC, 2010). These actions added substantially to the on-going costs of the quake due to the disruption caused to local businesses.

The total financial cost of the quake was substantial for the relatively small economy of New Zealand. Building owners faced expensive rebuilds, businesses lost substantial revenues and the repairs required to infrastructure were extensive. For those who were insured, the costs were passed on to the insurance companies, and the estimated insured loss was approximately \$6bn according to major reinsurer Swiss Re (The Nelson Mail, 2012). This made the September Earthquake in Christchurch the world's second largest natural disaster in 2010 in terms of the insured value of the losses (Swiss Re, 2011). The cost of the 2010 Earthquake was dwarfed when the 6.3 magnitude quake hit in February 2011. Despite the magnitude of the quake being significantly smaller than in September, it was centred at a depth of only 5km, leading to substantial damage to Christchurch city and the surrounding areas. Also, the timing of the quake in the middle of the day meant the losses were substantially higher, in terms of both property and human life.

Already crippled infrastructure sustained further damage. Entire suburbs were without water or power, and roads were cracked and covered with liquefaction. Many buildings in central Christchurch were damaged beyond repair and their instability resulted in large parts of the CBD being cordoned off. Business in Christchurch was essentially closed down for months. The quake also had a more significant affect on residential properties than the 2010 quake. An estimated 100,000 homes suffered quake damage, including some 10,000 that required complete demolition (Tait, 2011)

Swiss Re estimates the insured loss of the February quake to be \$14.5bn dollars (2011). This represents only 80% of economic losses, which were estimated at \$18bn. These figures place the quake as the third most expensive in history in terms of insured losses, due to a combination of the

extensive damage and the high level of insurance holdings by New Zealanders.

Aftershocks of varying strengths have continued to plague the city since the major quakes, some creating further damage to the regions crippled infrastructure. Among these aftershocks, a 6.4 magnitude quake on June 13th created further damage to the city. The marginal insured loss was \$2.5bn, and the economic loss was \$3.5bn. This brings the total insured loss for the Canterbury earthquakes to \$23bn, and the economic loss to almost \$30bn. The liability for these losses is spread across several parties.

4 Paying the Cost of the Quakes

4.1 Insurance Companies

Given the large number of parties affected by the Canterbury earthquakes, insurance companies were immediately swamped with claims. Beyond the obvious logistical difficulties that arise from such an influx of claims, there were more serious concerns about the ability of insurance companies to meet their financial obligations.

As discussed earlier, EQC provides limited support to residential policy holders in the event of a natural disaster. While the insurance companies received some pay-outs from EQC, the amount they were able to receive was capped at \$100,000 for each policy, and an estimated 30,000 houses sustained damage beyond this level (Reactions, August 2011). The shortfall between the claim and EQC pay-out represents the liability of the insurance company.

Reinsurance was essential for the companies to meet their net residential obligations, as well as their commercial obligations which were not covered by EQC. The reinsurance pay-out they received was obviously dependent on the level of cover they had obtained prior to the quakes. Given that no

insurer was fully covered, all of the major insurance companies in NZ incurred significant losses. The companies with a deep pocketed parent company in Australia were at a definite advantage and were able to absorb the substantial losses presented by the earthquakes.

AMI Insurance was the exception, with the combination of their insufficient reinsurance cover and the lack of an international parent leading to their inability to absorb the losses driven by their Canterbury clients. AMI faced an estimated \$1.8bn in Christchurch earthquake claims, but only had \$1.3bn in reinsurance, leaving a \$500m shortfall (Steeman, 2011). The shortfall represented a serious risk to the stability of the New Zealand market, and the 85,000 Cantabrians who held policies with them (English, April 2011). When their precarious financial position became apparent after the February quake, they began to work with the Government toward a solution.

On April 7th, the Government announced they would provide AMI with financial support should it be requested. The deal came in the form of \$500m of convertible preference shares which the Crown could purchase at any stage in return for full control of the company. Further, if the losses extended below this point the Crown guaranteed all policies would be honoured (English, April 2011).

The \$500m back-up offer was not redeemed by AMI and a year later they finalised the market solution which they had been seeking; with the sale of AMI to Australian insurance company IAG. The \$380m sale came with a provision that all Canterbury earthquake related claims were to remain the responsibility of the Crown. Once the proceeds of the sale were used to cover part of the earthquake claim shortfall, the Crown estimates its support of AMI will cost them \$100m. (English, April 2012)

4.2 The Earthquake Commission (EQC)

The estimated value of claims to EQC following the September quake was \$3bn. Despite their books looking sound after this quake, the subsequent earthquakes have brought their estimated liability for losses to \$12bn. As discussed earlier, EQC obtained international reinsurance for events with losses above \$1.5bn, up to a maximum of \$4bn. In other words, for an event which generates claims above \$4bn, approximately \$2.5bn was covered by reinsurance. Accounting for this reinsurance cover, EQC's direct liability for the Canterbury earthquake claims is approximately \$7bn, which includes the costs of reinsurance excesses in the three largest quakes and the losses beyond \$4bn which occurred during the February quake.

At the end of the 2010 financial year, the Natural Disaster Fund had a balance of approximately \$6bn. There is an obvious shortfall of over \$1bn between this fund and EQC's direct liability. To help meet this shortfall Finance Minister Bill English announced a rise in EQC levies for 2012, tripling the premium to 15 cents for every \$100 of insurance cover, up to a maximum of \$207 (English, October 2011). The Government is liable for the shortfall, which is expected to halve as a results of these changes to just under \$500m.

4.3 Reinsurance Companies

Reinsurance companies were indirectly liable for the majority of the Canterbury earthquakes' \$24bn of insured losses. As large international institutions, these companies were facing pressures from a record breaking number of natural disasters in 2011. The Japan earthquake and Thailand floods were alongside the Canterbury earthquakes in contributing toward a total of \$140bn insured losses from natural catastrophes and man-made disasters (Swiss Re, 2011). Despite a year of expensive disasters, the reinsurance companies escaped in relatively good shape, presumably due to

their well-diversified nature. The average loss as a percentage of annual premiums written, as reported by the Reinsurance Association of America, was just over 5% (2012). Considering the substantial capital reserves the companies are able to build up in more settled periods, this amount is relatively insignificant.

The Canterbury earthquakes, in conjunction with the earthquake in Japan (which is also situated on the “Pacific Ring of Fire”), have meant that NZ is no longer considered a low risk economy for reinsurers. To encourage reinsurers to invest in the NZ market and to compensate them for the extra (perceived) risk they are required to hold following the Canterbury earthquake, reinsurers are commanding a higher rate of return- driving up reinsurance premiums.

New Zealand Minister Gerry Brownlee flew to London in late 2011 to talk to reinsurers about the Christchurch economy. He assured them the Government was assessing reconstruction zones and building requirements closely in order to ensure the resulting losses from any future quakes will be minimal (Reactions, August 2011). This was a brazen move to decrease the risk perception of New Zealand reinsurance investments, in an attempt to limit price increases.

Access to reinsurance remains available to NZ insurance companies, though, despite Mr Brownlee’s efforts, the reinsurance premiums have more than doubled since the earthquakes and in many cases a higher retention also applies (AM Best Newswire, 2011). The affect is large increases in costs for the insurance companies, which are ultimately passed on to their clients in the form of higher premiums.

4.4 NZ Insurance Policy Holders

It is the NZ insurance policy holders that will be paying for the losses in Christchurch in the long run. The local insurance companies do not have the ability or incentive to absorb the recent hikes in reinsurance costs, meaning

they pass them on to their policy holders. Likewise, the individual policy holders are the ones who end up paying for the rise in the EQC levy, which equates to an increase of up to \$169 annually. These drivers are behind the increases in insurance premiums for households, the average of which has been estimated at as high as 30% (Dickinson, 2012). Particularly affected areas are Christchurch and Wellington, where natural disaster premiums have been increased most substantially.

These policy holders, along with the NZ public as a whole, are also paying for the financial contributions made by the Government using tax-payers' money. The anticipated \$500m support of EQC, and the \$100m cost of handling the claims of AMI's customers are significant transactions in the Government's book. The Government are also victim to the rising insurance costs, which exceeded their budget forecasts by hundreds of millions of dollars in the financial year following the quakes.

Further, the Government have pledged large capital investment for the rebuilding of Christchurch city. In the 2012 Government Budget, they made \$5.5bn in provisions for the rebuild effort, including planning, management and implementation of the build (Booker, 2012). Christchurch Mayor Bob Parker has also indicated he expects further contributions for assistance in the development of the City Council's infrastructure and project development. Add to this the accumulating costs of 'minor' aftershocks and the Government's books are firmly in the red with regard to Christchurch. The cost of this lies with the public.

5 Regulatory Change

The Insurance (Prudential Supervision) Act 2010 received assent on the 7th of September 2010, coincidentally three days after the first of the Canterbury earthquakes. The Act requires the Reserve Bank to promote maintenance of a sound and efficient insurance sector, and promote public confidence in the sector (Dean, 2010). RBNZ takes a relatively light-handed approach to the implementation of the Act, balancing their three 'pillars' of Self Discipline,

Market Discipline and Regulatory Discipline. This method emphasises the small weighting RBNZ puts on regulation as a risk management tool; it appears to be a safety net which should have little effect on a firm exercising prudential management.

Further, in November 2011, the Reserve Bank created the Prudential Supervision Department. This department, among other things, is responsible for the “microprudential regulation” and supervision of insurance companies (Fiennes & O’Conner-Close, 2012). This indicates the increasing role of the Reserve Bank in exercising their duty as supervisor, and is a sign they are keeping a close eye on the NZ markets. This move is likely due to the increasing volatility of the markets through the global financial crisis, as well as the added instability caused by the Canterbury earthquakes.

When proposing regulation, it is important to give significant consideration to the risk of moral hazard. The Government’s eagerness to protect consumers by guaranteeing their insurance policies, also results in a decreased incentive for insurance companies to act prudently. This risk increased substantially with the Government’s underwriting of AMI, which was effectively an admission to the market they would offer a bailout if necessary. In a market with no prudential requirements or supervision, it is dangerous to suggest firms will be given Government protection during a crisis due to the skewed incentives it creates. However, by implementing minimum requirements in the Insurance (Prudential Supervision) Act 2010, RBNZ attempts to minimize the strength of this moral hazard and align insurance companies’ incentives with those of their customers.

Also of importance is the Reserve Bank’s implementation of Basel III, which is currently scheduled for January 2015 (Vaughan, 2012). The regulation requires banks to hold more liquid assets and more closely match their lending and funding terms. Although the scope of the regulation does not directly include insurance companies, it may restrict their access to bank capital for financing risky investment. More careful lending by banks requires a more thorough risk assessment of the insurance companies, placing a further check on their liquidity and encouraging prudent lending in the market as a whole.

6 The Current NZ Insurance Industry

It is not possible to say the NZ insurance industry has fully recovered from the Canterbury earthquakes, only that the market has stabilised. Thousands of claims are still being processed by both private insurance companies and EQC, and the overall cost of the quakes is still unconfirmed.

EQC have received over 450,000 claims to date, and have paid out over \$3bn (EQC, 2012). The increases in levies is expected to help breach the shortfall in cash once all claims are processed and the Government anticipates they will need to contribute about \$500m. The existence of EQC has certainly cushioned the financial impact of the earthquakes on the Government's books, and on the New Zealand economy as a whole. An immediate concern is the depletion of the Natural Disaster Fund, which leaves the nation exposed to substantial losses in the event of subsequent earthquakes or other natural disasters.

Since their purchase of AMI, IAG now control approximately 60% of New Zealand's home and contents, and car insurance markets. The sale was approved by the Overseas Investment Office, the Commerce Commission and the Reserve Bank, though there was public outcry surrounding the loss of competition in the market (Tarrant, 2012). It is difficult to suggest decreased competition has driven any part of the recent premium increases, though the inherent risks in the NZ insurance industry mean it will certainly be a market under close scrutiny moving into the future.

Such scrutiny will be encouraged by the Insurance (Prudential Supervision) Act, which gives governing bodies greater transparency into the insurance industry as a whole. Despite the NZ insurance industry remaining one of the most gently regulated internationally, this Act carefully balances the stability of the market as a whole with the freedom of individual firms. This should help the NZ market maintain a level of stability in the future, and make anticipation of market turbulence a lot easier.

Insurance holders around the country are faced with conflicting effects of the earthquake. The visible destruction of so many homes provides individuals

with a constant reminder of the need for insurance, though the increasing costs act as a deterrent. It is not difficult to imagine insurance companies releasing a greater variety of policies for natural disasters. These may include capped or conditional payoffs in order to make at least some degree of coverage affordable to struggling households.

7 Conclusion

The Canterbury earthquake has challenged the entire insurance sector in New Zealand. The scale of the loss was unprecedented, and strained our existing industry. Some insurance companies, like AMI, learnt harsh lessons about covering their risk and maintaining a diversified portfolio. Meanwhile, EQC proved to be a vital resource for the country, and it has certainly solidified its place in the future of the NZ market. In practically every avenue, New Zealand policy holders are the ones who will be paying for the losses in the long term.

The industry has been refined. Virtually all of the major insurance providers in NZ now have Australian parent companies, providing a strong link between our markets, the significance of which should not be underestimated. RBNZ's role in exercising prudential supervision is a step forward in encouraging stability in the markets, and offers a level of transparency valuable for the planning of future events.

It is difficult to say whether New Zealand's insurance industry is better prepared for a natural disaster now compared to two years ago. The depletion of capital stocks from the natural disaster fund and local insurance firms' balance sheets represents a serious concern. However, the natural disaster reinsurance cover by local insurance companies is no doubt strengthened, and the linking of the firms to their Australian parents adds further robustness. The RBNZ can also play a more significant role in ensuring these firms are acting prudently. As for policy holders, the increases in premiums are already stretching budgets and any further increases may simply be unaffordable.

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Perfecting New Zealand's Consumption Tax System

Olena KHYTKO

Abstract

This essay weighs up the efficiency of different forms of consumption taxes, and balances the positives and negatives to find the best approach for New Zealand. It considers the ease of use and low administrative cost of the current uniform consumption tax in New Zealand (GST). Conversely, the regressive nature and the effect it has on low income earners shows that it is not a perfect system. Possible improvements are put forward, such as imposing a zero tax on necessities, or compensating the poor with benefits. The conclusion reached is that GST is the most efficient system of consumption tax.

1 Introduction

The consumption tax system in New Zealand varies to that of other countries, and could be considered quite efficient on the world scale. New Zealand has probably the broadest GST base in the OECD, which restricts tax evasion and facilitates the collection of more tax by the government. This uniform tax was imposed in New Zealand in 1986 at a rate of 10%. Goods and services tax (GST) is a tax on most goods and services in New Zealand, most imported goods, and certain imported services. It is added to the price of taxable goods and services, currently at a rate of 15%.¹ In terms of the GST, there is consideration as to whether certain goods and services should be taxed at lower, or zero rates. Meanwhile, a higher tax could be imposed on other goods and services. The converse issue is whether a uniform tax would be more economically efficient than varying taxes.

2 Goods and Services Tax

In any society, tax is an important mechanism for redistributing wealth and financing public services. In order to establish a 'good' tax system, the requirements set by Adam Smith should be satisfied. These include efficiency, equity, simplicity and low administrative cost. In this case, the biggest issue is that taxes can cause problems of inefficiency. They can restrict the incentive for workers to work, for producers to produce, and for consumers to consume.² GST, in general, is an efficient form of tax, as it does not interfere with production efficiency by taxing intermediate consumption.³ It taxes the end good. This avoids the problem of double-taxing, and is less restrictive on producer's incentive to produce. Simplicity and low administrative cost is most effectively achieved with a wide tax base. Varied tax rates can cause problems with compliance, and can be costly to

¹IRD. (21/04/2011). *GST (goods and services tax)*. Retrieved from <http://www.ird.govt.nz/gst/gst-registering/gst-about/>

²Connolly, S., & Munro, A. (1999). *Economics of the Public Sector*. Essex, England: Pearson Education Limited.

³Grimmond, D. (14/04/2009). *Dominion Post Articles There's a hole in my GST, dear Liza*. Retrieved from <http://www.infometrics.co.nz/gst/article.asp?id=4822>

implement and collect. While a wide tax base is efficient, it is not the most equitable option, as will be discussed below.

3 Lowering tax on necessities

GST acts in a regressive manner as a share of income. The average rate of tax on goods and services is higher for those with low income, as they have to allocate a higher proportion of their income to expenditure. Those with higher incomes allocate a smaller portion of income to the same basket of goods and services.⁴ This goes against the principle of vertical equity - that those who are more able to pay should pay relatively more tax. It would appear to be more fair and equitable to make goods and services such as necessities tax-free, or carry a small tax, so that low-income earners are left with more disposable income after purchasing necessities. This would make the goods and services tax system more progressive. The problem with this is that while such a change is directed at helping poor spend less, it would also benefit the rich as they also buy necessities. The rich would probably benefit the most, as they are likely to purchase a larger quantity of goods and services. Income benefits and transfers would be a more efficient and targeted way of helping the poor. This would allow for tax to still be collected on necessities purchased by the rich. An example of a zero-rate tax is Labour's proposal to take GST off fresh fruit and vegetables if they are elected. They argue that this will help low and middle income earners, and will boost the economy as a whole. An important point which is made is that fruit and vegetables should not become a luxury because of their price, but should be encouraged (as a merit good). Cutting GST off the price would certainly encourage more consumption and lead to healthier households. The policy is a good idea; however there would be problems in practice. In reality, fruit and vegetable sellers are likely to increase their prices back to the GST inclusive price over time, to gain more profit. Also, the lost revenue of this policy (\$250 million) will mean that the public will have to pay this tax in

⁴Connolly, S., & Munro, A. (1999). *Economics of the Public Sector*. Essex, England: Pearson Education Limited.

some other way.⁵ While reductions in tax are equitable, there are always practical problems with their effectiveness and implementation.

In comparison to New Zealand, which does not currently exempt necessities from tax, the US has a zero tax rate on food and children's clothing.⁶ Currently New Zealand only exempts the following goods and services from tax:

- ⤴ goods and services supplied by businesses that aren't registered for GST, and
- ⤴ exempt supplies such as:
 - ⤴ letting or renting a dwelling for use as a private home
 - ⤴ interest you receive
 - ⤴ donated goods and services and services sold by a non-profit body, and
 - ⤴ certain financial services.⁷

Another reason to lower taxes is that it may help to limit tax avoidance. If GST makes purchases too expensive for low-income earners, they may find ways, such as through the black market, to evade tax. In the case of black market goods and services, the government raises no revenue from their consumption, as they are sold illegally. This is an inefficient outcome.⁸

4 Benefit of wide Value Added Tax Base

⁵Labour confirms GST-free fruit and vegetable policy. (27/09/2010). Retrieved from <http://www.nbr.co.nz/article/labour-confirms-gst-free-fruit-and-veg-policy-130584>

⁶Connolly, S., & Munro, A. (1999). *Economics of the Public Sector*. Essex, England: Pearson Education Limited.

⁷IRD. (21/04/2011). *GST (goods and services tax)*. Retrieved from <http://www.ird.govt.nz/gst/gst-registering/gst-about/>

⁸Connolly, S., & Munro, A. (1999). *Economics of the Public Sector*. Essex, England: Pearson Education Limited.

GST is a form of Value Added Tax (“VAT”), which is a tax passed on by the firm to the government on the value added at that stage of production or distribution. New Zealand has a very wide VAT base, and very few goods and services are excluded from it. This is compared to the UK, where not all goods and services fall under the uniform tax; many have a zero rate. Broadening the VAT base is preferred in the Mirrlees Review, as it increases consumer's welfare.⁹

Having a broad VAT base, so having a uniform tax, increases economic efficiency, and also increases consumer's welfare. A wide VAT base allows for administrative costs such as the cost of collecting tax to be lower. It is also simpler for producers to implement a uniform tax on their goods. With a wide VAT base, it is easier compensate those on low incomes through direct tax and benefit reforms. It is also beneficial to consumers, as their consumption choices are not distorted by differentiated taxes on various goods and services. Conversely, it is sometimes necessary to encourage or discourage consumption of certain goods and services To limit distortion of consumer's purchasing decisions, and raise tax efficiently, the Marginal Extra Benefit (MEB) from any tax should be the same. (cite)

5 Increasing certain taxes incentivises workers

GST can also be manipulated to incentivise people to work. The government can tax time-saving goods and services less, and leisure goods and services more. This would encourage people to spend less time relaxing and more time working. An example of this can be seen in the UK in 1978, when luxury goods were taxed at a rate of 12.5%, compared to the 8% on normal goods and 0% on necessities. However, the policy of higher tax on luxuries was dropped in 1979. Taxing luxuries more may increase economic

⁹*Broadening the VAT base.* Retrieved from <http://www.ifs.org.uk/mirrleesreview/design/ch9.pdf>
10. 9

efficiency, however social efficiency may fall as people may not want to spend so much time working. It would also be hard to define a list of luxury goods to be taxed. Overall, it is probably better to limit such distortions on workers.

6 Merit and Demerit Goods

The government can also control what the public should and should not consume. To encourage the consumption of merit goods and services, it can decrease the tax on them. Conversely, to discourage consumption of demerit goods and services, it can raise tax on them. One example of this in New Zealand is increase in tax on tobacco by 24% and on cigarettes by 10% in 2010, with more increases scheduled.

By differentiating tax rates on goods and services, the government could manipulate the amount of tax revenue raised. Raising the tax on goods and services that are inelastic will achieve this, as the consumer will keep purchasing a similar amount of them even at a higher tax. Consumption of necessities such as toilet paper is unlikely to change, for example. Taxing addictive goods and services for their harm to society, such as alcohol and cigarettes, will also raise tax revenue as their consumption will not decrease proportionally to the increase in price. This could, however, become economically inefficient as sales of goods and services in high demand would decrease. If the government was to tax elastic goods and services, their tax revenue would fall. This is because the consumer would choose an alternative good, instead of consuming at a high tax rate. In theory, it would be efficient to tax inelastic goods and services. However, in practice it is hard to measure elasticities accurately. It may also be unfair to tax inelastic goods and services, as consumers may not have cheaper substitutes to turn to.¹⁰

There are some goods and services which should defiantly not see a fall in tax. These include environmental goods and services such as fuel. Dropping

¹⁰*PUBL303-ECON307 Lecture 17 - Tax Policy (21 Sept)*. Retrieved from Blackboard

tax on fuel will encourage its consumption, which in turn will raise CO₂ emissions. This would not be an efficient use of depletable resources.

7 Hypothecated taxes

It may be fairer to hypothecate some taxes. Hypothecated taxes are levied on particular goods or services, and the tax revenue raised is spent only on financing expenditure on that particular good or service. This means that those paying tax on the good are the ones receiving the benefit of the tax revenue.¹¹ This may compromise the simplicity of taxation, and increase the administrative costs of working out, collecting and allocating spending of the tax revenues raised here. It may also be very hard to finance pure public goods and services in this way. Charging for a public good when it is consumed is not always possible, and could be costly.¹² Hypothecated taxes may therefore be an inefficient option.

8 The tourism industry, an example of GST inefficiency

GST in New Zealand works under the 'destination principle'. Goods and services purchased in New Zealand are liable for GST. Typically, it is considered that imports will therefore be liable for GST, but exports will not, as they are purchased overseas. This raises problems for producers who sell their exports in New Zealand, rather than overseas. In the New Zealand tourism industry, tourists pay this tax. However, it is those in the tourism industry who get less income, as the government collects 15% of the sold goods and services. This is compared to exports sold overseas, which are not taxed by the New Zealand government, leaving the revenue for the producer. The result of this GST constraint on the tourism industry is that there is less

¹¹Connolly, S., & Munro, A. (1999). *Economics of the Public Sector*. Essex, England: Pearson Education Limited.

¹²Ibid.

investment and growth in that industry. The allocation of investment is distorted by the GST. This impedes efficiency and affects the whole economy negatively. One way to improve fairness in the system is to tax all exports, and not tax imports. This would get rid of the distortions that affect investment, and decrease the administrative cost of collecting tax.¹³

9 Conclusion

Overall, GST is considered to be an economically efficient form of tax. In New Zealand, GST applies to almost all goods and services. A reduced or zero rate of tax on certain goods, predominantly necessities, would be beneficial to low-income earners. This is because they currently spent a higher portion of their income on necessities than high-income earners. Lowering taxes on certain goods could also reduce tax evasion and black markets, resulting in higher tax revenue. However, the costs of varying taxes appear to outweigh the benefits. New Zealand is already making progress on achieving economic efficiency, as GST is a Value Added Tax. This is especially so as New Zealand has a wide VAT base. A wide base ensures low administrative costs and compliance with the GST system. It also reduces the distortions to consumer spending and to the production process. On the weight of the arguments, it appears that while reduced taxes would certainly benefit consumers, the most efficient outcome is achieved by the current broad uniform tax.

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¹³Grimmond, D. (14/04/2009). *Dominion Post Articles There's a hole in my GST, dear Liza*. Retrieved from <http://www.infometrics.co.New Zealand/article.asp?id=4822>

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The role of the Exchange Rate in Monetary Policy Rule – A Critical Evaluation

Alan BRISTOW

Abstract

In this essay, I examine the issues around the inclusion of the exchange rate channel into monetary policy rules, and look at how several central banks currently address exchange rates when determining interest rates. I then go onto examining the model used by Taylor in his paper, and discuss issues around this approach and make some suggestions of some desirable features for using the exchange rate channel in a policy rule. I then go on to provide an example of a very general policy rule and briefly discuss how it could be used in setting interest rates.

1 Introduction

Many countries choose to have a floating exchange rate for the flexibility that arises from using monetary policy and inflation targeting to manage the economy. The advantages of floating exchange rates over fixed exchange rates are well known and combined with the benefits of simple monetary policy and inflation targeting means many countries operate under the combination of these policies.

There is however a strong debate over how to take exchange rates into account when carrying out monetary policy and how the interest rate should react to movement in the exchange rate. Another issue is around whether exchange rates should affect interest rates directly or should the central bank concentrate on the rate of inflation and output in deciding monetary policy.

2 Central Banks' use of the exchange rate channel in monetary policy rules

Taking stock of the use of the exchange rate channel across several central banks yields a common approach, several Central banks like the Bank of Canada, Reserve Bank of New Zealand and Riksbank (Sweden) do not attempt to affect the underlying trend of exchange rate movements. The usual approach is to model the changes in the exchange rate via uncovered interest parity rules and take into account the effects that movements in exchange rates may have on inflation. They then take the change in inflation into account when setting interest rates. The effect of changes in interest rates on the exchange rate is considered ambiguous, and many central banks don't target specific bands of value for their currency.

Central banks do make occasional forays into currency markets in order to smooth out short term volatility, but no long term strategy of maintaining the exchange rate exists. By maintaining stability of inflation, it is believed to contribute some measure of stability of exchange rates.

3 The role of the exchange rate in monetary policy rules

The paper by **Taylor (2001)** examined the role of the exchange rate in monetary policy rules. He highlights several approaches to the issue in current research: i) put monetary policy rule in a macroeconomic model, ii) solve the model using some numerical solution algorithm, iii) examine the properties of the stochastic behaviour of the variables (inflation and output) and iv) choose a rule which gives the best performance, using a loss function.

In previous research, the exchange rate is usually included as part of an arbitrage equation relating the interest rates in one country to those of another through the expected rate of appreciation of the exchange rate. The assumptions that many models employ in regard to policy evaluation include ex ante interest-rate parity conditions or a reduced form relationship between the real interest rate and the real exchange rate. The exchange rate also affects the terms of trade and the knock-on effects to the flows of exports and imports.

The paper then goes on to examine several possible implementations of exchange rates into a monetary policy rule via the following form:

$$I_t = f\pi_t + gy_t + h_0e_t + h_1e_{t-1}$$

Where I_t is the short term interest rate, π_t is the rate of inflation, y_t is the deviation of real GDP from potential GDP and e_t is the real exchange rate. Taylor reviews the findings of several papers which look at different possible values for h_0 and h_1 and how these represent different ideas on the effect on the exchange rate on monetary policy.

- Setting $h_0 < 0$ and $h_1 = 0$ would imply that higher than expected exchange rates would force a loosening of monetary policy through reduction of the interest rate.
- Setting $h_0 < 0$ and $h_1 > 0$, where $|h_0| > |h_1|$ means that initial interest rate reaction is partially offset in the next period.

- Setting $h_0 < 0$ and $h_1 = -h_0$ implies that interest rates reacts to the change in the exchange rate, not the absolute value.

Each of these interpretations would require an underlying structural model to simulate the rule and find their comparative merits.

The negative sign for h_0 is required as an appreciation of the exchange rate would have a contractionary effect on aggregate demand. Foreign goods become cheaper relative to domestic goods, leading to a reduction in net exports. The cut in interest rates helps mitigate this contraction. The partial interest-rate offset is from the lagged impact of the change in exchange rate on inflation. As the decline in inflation is temporary, it is not appropriate for a central bank to use additional easing as lower than desired inflation would result.

An open economy model with a negative interest rate response ($h_0 < 0$) and a partial interest-rate offset ($h_1 > 0$) leads to better performance than having both 'h' parameters equal zero. Performance is measured by the size of fluctuations of real GDP around potential GDP and the size of fluctuations around the inflation target, both of which are a proxy for peoples' preferences. The result was reducing inflation volatility by 0.1% which is quite small considering the coefficients used for the reaction variables.

Another study used forward looking agents with more explicit micro-foundations led to a reduction in inflation volatility, but also led to an increase in the volatility of output. These results indicate that the possibility of small performance improvements from reacting to the exchange rate, while also causing a reduction in performance.

To explain these results, Taylor considers both the direct reaction of the interest rate to the exchange rate, and the indirect reaction that exists. Due to the indirect effects of movements in the exchange rate on inflation and output, rules which do not specifically react to movements in the exchange rate will react through the changes on the levels of imports, exports and inflation which occur. The indirect effect comes from inertia and rational expectations

and may hold an advantage over the direct effect as fewer fluctuations in the interest rate occur.

4 Methods & Arguments

The conclusion from Taylor's paper is that further research is required to confirm the idea that the indirect effect of exchange rates lowers the level of volatility in interest rates. The first issue is how to include the exchange rate in a model in order to influence the interest rate in a way which is comparable with the data.

If the exchange rate is included as part of a monetary policy rule, there is the possibility that 'double counting' exists if the exchange rate is used to determine current levels of inflation and/or output. If the effects of the exchange rate on output and inflation are not included elsewhere within the model, then this is not an issue. However, if it is explicitly included then it is arguable that it should not be included as part of the monetary policy rule, as the effects could also be felt via the resultant changes in inflation and output and affect the interest rate by a greater magnitude than anticipated.

The paper by **Garcia, Restrepo and Roger (2009)** examined whether including exchange rates explicitly in a central bank's policy reaction function can improve macroeconomic performance. They found that including a variable for exchange rate smoothing is helpful for handling risk premium shocks, as long as the weight assigned to the term is relatively small. They find very little effects on the volatility of output and inflation. This suggests that it's not strictly necessary to include an explicit mechanism of the exchange rate affecting the interest rate inside a macroeconomic model.

Uncovered Interest rate Parity (UIP) is an arbitrage condition used by many models which rules out excess profits in asset markets. When an appreciation is expected (the domestic currency increases in value in relation to the foreign currency), UIP indicates that the interest rate should decrease at the same rate in order to keep parity with the foreign interest rate and if it doesn't then arbitrage profits may be made. Unfortunately UIP is not backed up by

empirical evidence which implies that UIP isn't a robust rule for modelling the effects of exchange rates on interest rates.

The paper by **West & Engel (2005)** explains how asset prices approach a random walk when they are an I(1) process and the discount factor is nearing one. As exchange rates can be considered as asset pricing of currency, this result explains the puzzle that variables like output, inflation, and interest rates do little to predict changes in floating exchange rates. They also show that the empirical data suggests that exchange rates help to predict fundamental variables. They conclude that exchange rates and fundamentals are linked in a way that is consistent with asset-pricing models of the exchange rate. This implies that changing the interest rate to affect the exchange rate is unlikely to succeed but the relationship holds in the other direction.

5 Indirect and direct effects of exchange rates

Considering the indirect effects of the exchange rate on imports and exports, imports become relatively cheaper during an appreciation and increase. Exports are more ambiguous and initially, exports should decrease from an appreciation in the exchange rate, and increase during depreciations. Quotas and tariffs on exported goods imposed by other countries limits the actual changes that occur and it isn't always clear how the net export level will entirely react. Generally, due to the change in imports, the net export level will fall which translates into a fall in output either from the exporting sector or from domestic producers crowded out by cheaper imports. Therefore exchange rate movements can increase volatility in output.

In regard to inflation, during an appreciation, the falling price of imports lowers the impact of inflation from imported goods, lowering the overall rate of inflation for the economy as a whole. This offsets inflation from changes in domestic goods price. Therefore it can be argued that exchange rate movements decrease volatility of inflation.

However, from an appreciation (depreciation), volatility of inflation is falling (rising), but output volatility is rising (falling) and a trade-off between output and inflation exists. This feeds into the preferences of the central bank, depending on whether they believe that inflation or output volatility is more damaging to the economy determines how they will react. This trade-off may be diminished as highlighted by **Adolfson (2001)**, where inflation in import prices does not match a one-to-one change in the exchange rate from the effects of nominal rigidities or price discrimination. This is known as incomplete exchange rate pass-through which may limit the effect on inflation, and consequently limit the response needed by the central bank.

Having a strong currency shields an economy from price rises in imported goods but punishes the export sector. Under a weak currency, the price rises are amplified but the export sector benefits from more competitive pricing. As many central banks lean towards the idea of a 'conservative' central banker, the volatility of inflation is considered more damaging, and this suggests that central banks will be more likely to respond to depreciations than appreciations in the exchange rate, unless a sustained period of strength or weakness of the currency threatens to shift inflation outside of the target band or for output to vary significantly.

This implies that an additional rule could be created for showing the indirect effects of exchange rates and indirectly determining monetary policy, but not within the monetary policy rule itself. It could help determine the relative cost to the economy from the changes in both inflation and output, and the effects of these changes feed into the monetary policy rule. If either inflation or output goes beyond an acceptable threshold then the central bank could step in with an appropriate change to the interest rate.

6 Modelling of exchange rates

The model that Taylor uses to highlight the different approaches works by setting values of the coefficients of the current and previous period exchange rate ignores the effects on the interest rate via changes in output and inflation that may occur. It is also backwards looking in that it doesn't take into

account expectations around the exchange rate. Another issue is that exchange rates may vary significantly before a change in the interest rate occurs, so the relationship cannot be described as linear.

Taylor also highlights the issue that there is no intercept term in the rule, which implies a target rate of inflation of zero and that the interest rate and exchange rate are measured relative to the long run steady state values. Many countries choose a low positive inflation rate (1-3%) or have a band around a central value as a target. The Inflation rate is not set to zero to avoid the risk of potential deflation within the economy and needs to be taken into account when forming the rule. It could be included by measuring difference from target inflation as opposed to just the rate of inflation.

It is difficult to accurately measure the impact of changes in exchange rates upon net exports and inflation, as the three variables are closely entwined. Looking at the changes in each variable individually keeps the function simple, without unnecessary technical complications. The use of a non-linear, partially-backward and -forward looking rule in some form can describe the effects of exchange rates on inflation and output in a potentially informative way.

An example of such a rule is:

$$\omega = \log(|\Delta M|) - \log(|\Delta X|) + \alpha.(\pi M_t - \pi M_t^e) + \beta.(s_t - s_t^{LR}) + \zeta.(s_{t-1} - s_{t-1}^{LR})$$

By taking into account changes in imports ($\log(|\Delta M|)$) and exports ($\log(|\Delta X|)$), changes in current imported inflation from the expected level ($\pi M_t - \pi M_t^e$) and changes in exchange rate from the long run trend both currently ($s_t - s_t^{LR}$) and historically ($s_{t-1} - s_{t-1}^{LR}$), we can then measure some amount of 'loss' (ω) suffered by the economy. This information can be fed into the monetary policy rule with a coefficient determined by the preferences of the central bank on the importance of such information in order to determine a suitable interest rate. The values α , β and ζ are weights to show the preferences of the central bank when reacting towards changes in inflation and current and historical exchange rates.

This rule is forward looking in regard to the changes in imported inflation, but not to the changes in the exchange rate. It's not feasible to accurately predict exchange rates as they resemble a random walk over the short term. The expectations of future exchange rates would be contained within expectations of future imported inflation. If expectations of imported inflation increase, then this implies some expectation of a depreciation of the exchange rate in the near future. This example also addresses the issue of a non-linear relationship between exchange rates and interest rates, as the total 'loss' is passed into the monetary policy function, not the difference alone in exchange rates.

This example gives an idea of how such a rule could be applied, but further work is required to see how variations on this idea affect a structured model and how well it fits existing data across countries. It is very possible to have different rules for different countries, especially between developed economies and emerging economies.

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The Legacy of British Colonialism in India post 1947

Simon CAREY

Abstract

India was under direct British administrative control for almost a century, with independence from Britain not gained until relatively recently, in August 1947. British imperialism had a number of significant impacts on the region – many of which had lasting legacies on the country’s economic and social positions. While some of these impacts were positive for India, many resulted from British imperial interests being prioritized over domestic interests, which led to an uneven pattern of development and weak central government. This note canvasses some of the commonly explored legacies of British colonialism in India, and concludes that a century of foreign control may have done more harm than good for the country’s development.

The Indian subcontinent was under direct British administrative control from 1857 to 1947 – almost a century. This followed a period of more indirect political control from the British East India Company that was established gradually, starting in Bengal around 1757.¹⁴ During this time, the Indian subcontinent underwent a number of significant structural changes to its economic and political systems. Although many of these processes were officially brought to an end upon independence in August 1947, it is apparent that the extended period of foreign control had impacts that persist in modern-day India. Here, the impacts of the British raj are systematically identified and their legacies for India's growth and development today are briefly discussed. As British India was divided into a number of states after independence, the focus will be on what is now the modern state of India – a country where real incomes are little more than 13% of those in New Zealand, on average.¹⁵

The British raj saw the entire India subcontinent brought under the control of one central government, presided over by the British parliament in London. This was a significant change for the region, which had historically consisted of only a weak collection of distinctly separate districts with considerably separate economic systems.¹⁶ The use of eleven different primary languages,¹⁷ great differences in religious beliefs, social structure, living standards, and urbanisation rates, and the absence of a dominant central power have led some scholars to compare pre-colonial India to the culturally diverse region of Europe.¹⁸ Despite political separation of some major areas

¹⁴ Banerjee, A., & Iyer, L. (2005). History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India. *American Economic Review*, 95 (4), p.4.

¹⁵ Penn World Tables 6.2, http://pwt.econ.upenn.edu/php_site/pwt62/pwt62_form.php, accessed 12:30pm 28/07/2009. Measured in real GDP per capita in 2003.

¹⁶ Tomlinson, B. (1993). *The New Cambridge History of India: The Economy of Modern India 1860-1970*. Cambridge: University Press, pp.2-3.

¹⁷ Clark, G., & Wolcott, S. (2003). One polity, many countries: economic growth in India 1873–2000. In D. Rodrik (Ed.), *Analytical Case Studies on Growth*, p.11.

¹⁸ *Ibid.*, p.4.

of the subcontinent (into Pakistan, Bangladesh, Ceylon and Myanmar)¹⁹ upon independence, the state of modern-day India retains an active central government – a necessary institution for proper representation in the modern world system. Although the Indian government acts on behalf of the entire country it has been suggested that, partly due to its colonial history and a reinforcing of *regional* government after WWI, the central government has been weak in its role for promoting country-wide economic development.²⁰

In order to raise finance from their Indian colony, the British established a system of land tenure whereby property rights were assigned to a landlord, a village community, or the individual cultivators of the land.²¹ The allocation of property rights varied widely both across regions and throughout the period, often leading to a restructuring of historic class divisions.²² It has been argued, particularly by Banerjee and Iyer (2005), that this system led firstly to distinctly different institutional arrangements in each locality, and consequently to wide variation in levels of local development. Although the landlord system was abolished upon independence and land taxes now account for only one percent of total tax,²³ the persistent effects of this may be seen in the established local institutions and their impact on asset distribution and political representation.²⁴ This persistent link from colonialism to institutions to development has received much attention in recent literature,²⁵ with historical arrangements such as India's viewed as detrimental to the country's present-day development.

¹⁹ The last two are now known as Sri Lanka and Burma, respectively.

²⁰ Misra, M. (1999). *Gentlemanly capitalism and the Raj: British policy in India between the world wars*, p.165.

²¹ Banerjee and Iyer (2005), p.10.

²² Roy, T. (2002). Economic History and Modern India: Redefining the Link. *Journal of Economic Perspectives*, 16 (3), p.122.

²³ Clark and Wolcott (2003), p.4.

²⁴ Banerjee and Iyer (2005), pp.7-8.

²⁵ See, for example, work by Acemoglu et al. (2001).

The dominance of the British in India led to the advancement of European economic ideology and practice throughout the country. Although for some time there had already been a form of capitalism amongst, for example, the Indian merchant class,²⁶ the widespread commercialisation of industries such as agriculture²⁷ led to a widespread belief that Britain had a vital role in “transplanting capitalism in India”.²⁸ New production techniques were adopted, as were new ways of undertaking business. The British treatment of labour, including the land tenure systems, and the increasing mobility of workers led to the steady establishment of a labour market.²⁹ The spread of commercialism also necessitated the development of India’s legal system,³⁰ while the financial orthodoxy of the British stimulated a development of India’s financial markets.³¹ The efforts to develop some form of central bank in India date as far back as 1773 – very early among developing economies – and a central bank was formally established, before independence, in 1935.³² Furthermore, persistently strong links with Britain meant that a large number of officials in the new Indian government were trained at British institutions and would certainly have been influenced by the economic ideology popular in Britain at the time.³³ Although there may have been downsides to this influence, it is widely viewed as one of the more beneficial legacies of India’s imperial relationship with Britain.

²⁶ Gokhale, B.G. (1977). The Merchant in Ancient India. *Journal of the American Oriental Society*, 97 (2), p.125.

²⁷ Dutt, A. (1992). The Origins of Uneven Development: The Indian Subcontinent. *The American Economic Review*, , 82 (2), p.148.

²⁸ Tomlinson (1993), p.19.

²⁹ Roy (2002), pp.120,126.

³⁰ Banerjee & Iyer (2005), p.2; Dutt (1992), p.148.

³¹ Misra (1999), p.158.

³² Mohan, R. (2006). Evolution of Central Banking in India. Lecture delivered at the seminar organised by the London School of Economics and the National Institute of Bank Management at Mumbai, January 24, *Reserve Bank of India Bulletin*, p.2.

³³ See, for example a discussion of India’s early independent leadership in Moraes (1959), p.40.

All this was accompanied by large-scale investment by the British into Indian infrastructure. This investment was narrowly focussed, however, and certain types of infrastructure were prioritised. Railways, canals, ports and other facilities to assist the spread of commercial agricultural commodity production and the movement of the military developed quickly, along with urban centres of colonial administration such as Calcutta and Bombay.³⁴ The infrastructure was seldom targeted at the development of the general population, and investment into primary education³⁵ and healthcare facilities remained limited. Although one can argue that “modern industry was essentially a product of India’s contact with Britain”,³⁶ it has been suggested that the legacy of infrastructure left by the British has in fact been detrimental to the country’s development. Rather than developing the economy, it may have reduced the protection of Indian industries³⁷ and served primarily commercial, manufacturing and military objectives rather than general social objectives.³⁸ Many writers in the 20th century referred to this specific infrastructural investment as part of the ‘underdevelopment’ of the Indian economy – development that has not led to widespread growth of the economy.³⁹ Perhaps due to this, productivity has remained low since independence.⁴⁰

A significant portion of this British investment into infrastructure was used to aid the drain of resources from India back to Britain.⁴¹ India was considered one of Britain’s major assets, contributing large portions of its GDP each year. Although accurate data from early colonial India is inherently difficult to obtain, it has been estimated that even by 1882 more than four percent of

³⁴ Roy (2002), p.117.

³⁵ Ibid., p.127.

³⁶ Ibid., p.117.

³⁷ Dutt (1992), p.148.

³⁸ Macpherson, W.J. (1955). Investment in Indian Railways, 1845-1875. *The Economic History Review, New Series*, 8 (2), p.11.

³⁹ Roy (2002), p.109.

⁴⁰ Tomlinson (1993), p.22; Roy (2002), p.110.

⁴¹ Tomlinson (1993), p.13.

India's GDP was transferred in net payments to Britain.⁴² This process changed over the period, beginning with trade and looting during the time of control by the East India Company and then becoming somewhat more official – in the form of taxes, remittances and interest payments – once Britain had taken direct administrative control of the country.⁴³ British financial interests took precedence over Indian economic interests,⁴⁴ and the economic policies that were pursued exploited India's abundant resource endowments under the popular notion of comparative advantage.⁴⁵ For India, as for a number of western colonies in East Asia, this meant intensifying production based on abundant land and labour.⁴⁶

The extraction of resources from India meant a shift in production methods and the pattern of trade. The British used their investments in infrastructure to encourage the production of land and labour intensive goods, which led India to become a net exporter of agricultural commodities.⁴⁷ This accompanied a decline in the relative production of industrial goods, reversing India's historic trade position as an importer of primary goods and exporter of manufactures.⁴⁸ The British raj also reinforced a shift from the production of food to non-food export crops,⁴⁹ which increased the susceptibility of many parts of the country to widespread famine.⁵⁰ There was a widely noted decline in traditional Indian industries – particularly textile production – that has commonly been attributed to Britain's preferential treatment of its own domestic textiles.⁵¹ Colonialism may not have been responsible for this, however, as improvements in production technology in the Lancashire cotton industry were already making British textiles a

⁴² Ibid., p.14.

⁴³ Dutt (1992), p.148.

⁴⁴ Misra (1999), p.168.

⁴⁵ Roy (2002), p.128.

⁴⁶ Ibid., p.124.

⁴⁷ Misra (1999), p.157.

⁴⁸ Dutt (1992), p.157.

⁴⁹ Tomlinson (1993), p.20.

⁵⁰ Roy (2002), p.122.

⁵¹ Dutt (1992), pp.147-148.

competitive threat.⁵² Regardless of what was responsible for the change, the transformation of India into an agricultural commodity based economy, and the associated low per capita incomes, have to a large degree persisted beyond the cessation of British rule.

The British raj also led to an opening of the Indian subcontinent far beyond what it had previously experienced. Trade, which had been less than two percent of GDP in 1800, was as high as twenty percent of GDP by 1914.⁵³ International capital flows, particularly between India and Britain, also increased significantly.⁵⁴ It has been suggested that the development of a comparative advantage in agricultural production, coupled with an increased integration into the world economy, led to a deindustrialisation of India as a response to the industrialisation of the more technologically advanced economies and the entrance of India into the world market in a subservient position.⁵⁵ Whether the effects of this increased openness persisted or not is unclear, as the newly independent government withdrew India from the world economy to a large degree, imposing restrictions on the movement of international capital⁵⁶ and adopting policies which hindered the implementation of foreign knowledge.⁵⁷ This approach was reversed in the economic reforms of the early 1990s, partly in order to recover access to the potential benefits of international trade.

A natural conclusion that one could make from the discussion above is that during the colonial period India did *not* experience widespread, centrally controlled economic development to the benefit of all Indians. The British

⁵² Tomlinson (1993), p.105; Dutt (1992), p.148.

⁵³ Roy (2002), p.120.

⁵⁴ Ibid.

⁵⁵ Clark and Wolcott (2003), p.25; Roy (2002), p.122.

⁵⁶ Clark and Wolcott (2003), p.10.

⁵⁷ World Bank. (1993). *The East Asian Miracle: Economic Growth and Public Policy*. New York: Oxford University Press, p.21.

pursued their own interests in India, which often led to developments that had specific benefits to the British but ignored the needs of the Indian population.⁵⁸ An alternative colonial approach was taken in countries like New Zealand, where the British developed the country in such a way that private property and democratic government *did* eventually lead to population-wide increases in living standards. In the view of Acemoglu et al. (2001) the disease environment, leading to relatively lower settler populations, may have been the explanation for why this form of development was not a feasible strategy for India.⁵⁹ It has even been suggested that traditional Indian sources of economic growth were pushed aside to make way for imperial economic and social networks.⁶⁰ This led to what has been termed “uneven development”⁶¹ or “underdevelopment”⁶² of the Indian economy, whereby the country has grown *extensively* but, in general, *intensive* (per capita) growth has not been realised.⁶³ The majority of other European colonies in East Asia – such as Malaysia, Singapore and Hong Kong– have experienced far higher levels of intensive growth than India since its independence,⁶⁴ when the newly established government inherited a widely diverse country with many economic and social problems.⁶⁵ Despite some improvements in living standards since 1947, India has never managed to implement a successful central development strategy such that these persistent issues could be resolved.

In summary, British imperialism had a number of significant impacts on the Indian subcontinent, and many of these impacts have legacies that continue

⁵⁸ Tomlinson (1993), p.217; Dutt (1992), p.149; Misra (1999), p.164.

⁵⁹ Acemoglu, D., Johnson, S., & Robinson, J. (2001). The Colonial Origins of Comparative Development: An Empirical Investigation. *The American Economic Review*, 91 (5), p.2.

⁶⁰ Tomlinson (1993), p.12.

⁶¹ Dutt (1992), p.146.

⁶² Tomlinson (1993), p.19.

⁶³ Roy (2002), p.110.

⁶⁴ Penn World Tables 6.2, http://pwt.econ.upenn.edu/php_site/pwt62/pwt62_form.php, accessed 12:30pm 28/07/2009.

⁶⁵ Tomlinson (1993), p.156.

in modern day India. There is still a major debate amongst scholars as to whether the legacies of India's colonial past have primarily been beneficial or harmful for India's development, with some (including Imperialists, Orientalists and some Marxists) claiming that the British Empire brought modernity to India⁶⁶ and others (particularly Nationalists) claiming that it removed or distorted the country's developmental base.⁶⁷ From a brief discussion of the specific impacts, it is apparent that the legacy of the British raj was both positive *and* negative. There were some beneficial consequences, such as the unifying of the country under one central government; the influence of modern economic ideology, production techniques and technology; and the opening of the Indian economy to the benefits of increased trade and access to capital markets. However, these were not without their downsides: the unification of a diverse region left the central government weak in its role for centrally planned development, and comparative advantage and the opening of the economy may have led to India's subservient position in the modern world market. Combined with negative institutional arrangements from the land tenure system, an infrastructure skewed away from the needs of the majority, and mass resource extraction from the Indian economy, it seems that the overall impact of British colonialism in India may have done more harm than good. Regardless of whether this conclusion is correct, and despite the fact that colonialism was clearly not the *exclusive* driver of India's economic history,⁶⁸ it is apparent that the impacts of India's colonial past had legacies that continued to persist well beyond 1947.

⁶⁶ Roy (2002), p.109.

⁶⁷ Tomlinson (1993), p.19.

⁶⁸ Roy (2002), p.110.

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Book Review: *Modelling the Riskiness in Country Risk Ratings*

Suhejla Hoti and Michael McAleer

(Emerald Group Publishing Limited, 2005), 516 pages

Review by Tahir Suleman

This book presents an econometric analysis of riskiness in country risk ratings. Country risk and its associated risk ratings for 120 countries covering eight geographic regions is analysed by using the univariate and multivariate volatility models. The book consists of seven chapters. Chapter one introduces the topic and the key elements of country risk which are economic, financial and political risk. Country risk literature is presented in chapter two, as is the detailed analysis of the empirical foundations of the published contributions to the literature on country risk. Further, 50 empirical studies with reference to depiction of models, source of information and data, dependent and explanatory variables, model selection and method estimation, diagnostic test and the empirical finding from these studies are described in this chapter. All the studies in their literature based on pooled or cross-section type of data and two most commonly used dependent variables were the probability of debt rescheduling and country risk ratings. Economic, financial and political variables used as explanatory variables. For the country risk model the most popular model used in these papers were logit followed by probit and discriminant, whereas logit, probit and tobit model was used 40 times in total and ML estimation for 35 times. Similarly linear and log-linear models were used only seven times and OLS used for 16 times. However these studies ignore the diagnostic testing. A detail about the papers which consist of journal, data, variables and methodology also presented in Appendix of chapter two.

A qualitative comparison of risk rating system of ten leading agencies of country risk, Business Environment Risk Intelligence S.A., Economic

Intelligence Unit, Euromoney, Fitch IBCA, Institutional Investor, International Country Risk Guide, Moody's, Political Risk Services, S.J. Runds and Associates, and Standard and Poor's is presented in chapter three. A detail about these country risks rating which consist of definition of country risk by each rating agency, number of countries provided by each rating agency, frequency of the data, number and type of ratings compiled, number and type of risk components used, weight assigned to each risk components. Furthermore a thorough exploration of the ratings of International Country Risk Guide (ICRG) as it provides consistent monthly risk ratings.

Chapter 4 evaluated monthly ICRG country risk ratings and risk returns for 120 countries by geographical region. Risk returns defined as the monthly percentage change in the respective risk rating and the volatility as the squared deviation of each observation from the respective sample mean risk rating or risk returns. Further it covers investigation of the associated risk return and volatility of the four country risk rating and risk returns analysed with respect to economic, financial and political risk for each country. There were considerable variations in the risk ratings as well as in their associated volatilities across the eight regions. This chapter also provide first time a relative assessment of the trends and volatility of country risk ratings for all countries for economic, financial, political and the composite risk ratings. Further graphical analysis of the risk return and related volatilities for each country is also reported in this section.

Up-to-date theoretical results on univariate Generalized Autoregressive Conditional Heteroscedasticity (GARCH) models of conditional volatility presented in the chapter five. They also discussed constant correlation asymmetric VARMA-GARCH model of Hoti, Chan and McAleer (2002). The underlying structure of the VARMA-AGARCH was examined including convenient sufficient conditions for the existence of moments for the empirical analysis. These conditions permit an empirical assessment of the models for investigating country risk ratings and risk returns and associated volatilities. Risk ratings can be treated as index in the same manners as the financial market returns and analysed in chapter six.

The empirical results provided a relative valuation of the conditional mean and volatilities of the country risk variables across the countries over time, emphasizing the significance of economic, financial and political risk rating as components of composite risk ratings. The univariate GARCH (1, 1) and GJR (1, 1) models were found statistically passable for risk returns of all the countries. In general, the rankings by range of variation of GARCH (1, 1) static conditional correlations through the eight regions are constantly greatest for financial, economic or composite risk returns. However it's lowermost for political, economic or composite risk returns. The deviation of the conditional correlations for financial risk returns were never low and for political risk returns were never the highest. Finally chapter seven concludes with a summary of all the six chapters and discussion for further research in the area of country risk rating analysis.

Overall, the book is carefully written is an important impact on country risk rating models. In particular, the thorough demonstration of the all four components of country risk ratings and the description of the risk rating by converting them in risk returns and corresponding volatilities provide a significant improvement of previous country risk rating models. Taken it as whole, the book makes a valuable contribution to the literature on country risk analysis.

