

GST COLLECTION FROM THE NEW ZEALAND PROPERTY SECTOR*

Iris Claus**

*Policy Advice Division, Inland Revenue and
Centre for Applied Macroeconomic Analysis, Australian National University
Email: iris.claus@ird.govt.nz. Telephone: 64-4-890 6028.*

Geoff Leggett

*Policy Advice Division, Inland Revenue
Email: geoff.leggett@ird.govt.nz. Telephone: 64-4-890 6249.*

Abstract

There has been concern in New Zealand that insufficient goods and services tax (GST) is being paid on the sale of property. Various measures have been undertaken to address this issue. Since 2007 tax auditing of property transactions has been strengthened and in 2009 the Government issued a discussion document that proposed a legislative solution to some specific GST problems. Moreover, several court cases have ruled against GST aggressive arrangements. This paper provides initial estimates of the potential impact on GST collection and compliance in the property sector following these actions. The findings suggest that GST compliance in the property sector has increased.

JEL Codes: E17; H26

Keywords: Goods and services tax (GST) collection and compliance; property sector; model forecast combination

* Special thanks are due to Sri Farley for providing us with the GST data. We would like to thank Edda Claus, John Holt, Vladislav Skibunov, Brandon Sloan, Chris Stevens, Josh Teng and Sandra Watson for helpful comments and suggestions. The views expressed in this paper are our own and not necessarily those of Inland Revenue.

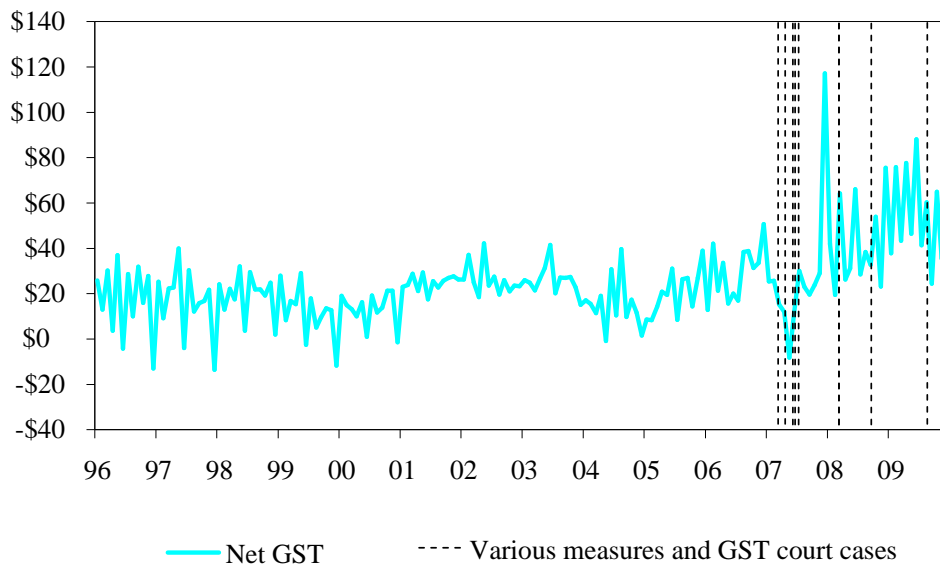
** Corresponding author. P.O. Box 2198, Wellington, New Zealand.

1. Introduction

There has been concern for some time that insufficient goods and services tax (GST) is being paid on the sale of property. Under the New Zealand GST system the sale of a property generates a GST credit to the purchaser and a GST liability to the seller. Different schemes have been used to get an advantage out of the GST system by ensuring that a purchaser receives an input tax deduction without there being corresponding output tax paid by the seller. In other cases the seller has simply not returned the GST charged to Inland Revenue.

Various measures have been undertaken to address aggressive GST arrangements. The May 2007 government budget announced increased funding for Inland Revenue to strengthen auditing of property transactions more generally. In June 2008 an Inland Revenue and Treasury (2008) issues paper was released suggesting options to resolve problems that can arise in connection with the supply of significant assets, such as land. This was followed by a New Zealand Government (2009) discussion document, issued in November 2009, proposing some specific legislative solutions.¹ Moreover, over this period a number of important court cases have ruled against GST arrangements that manipulated the operation of the GST to affect the timing of and receipt of deductions and the payment of GST.²

Figure 1. Monthly GST collection from the property sector (\$m) and timing of key events and court cases



Source: Inland Revenue

¹ The Government's decision on the legislative solution was announced in Budget 2010. From 1 April 2011 transactions between GST registered businesses involving the transfer of land will be zero rated for GST purposes.

² See *Glenharrow Holdings Ltd v Commissioner of Inland Revenue*, SC (2009) 24 NZTC 23,236; *Glenharrow Holdings Ltd v Commissioner of Inland Revenue CA* (2007) 23 NZTC 21,564; and *Ch'elle Properties (New Zealand) Limited v Commissioner of Inland Revenue* (2007) NZCA 299.

The various measures and court cases have coincided with an increase in GST collection from the property sector. This can be seen in Figure 1, which plots the net GST, that is gross GST less refunds, and the timing of key events and court cases.

This paper quantifies the impact on GST collection in the property sector following the various measures and court cases against aggressive GST arrangements. Estimates of the effect on compliance are obtained from out-of-sample forecasts that predict how much net GST should have been collected from the property sector. The results show that forecast errors have mainly been negative (that is, actual net GST collected has exceeded forecast GST) since the end of 2007. This finding suggests an increase in GST compliance in the property sector.

The paper proceeds as follows. Section 2 briefly discusses New Zealand's GST system and examples of the schemes that have been utilised by those engaged in the property sector to get advantage out of the GST system. Section 3 outlines the methodology and data used to assess compliance in the property sector. Section 4 presents the results and the last section summarises and concludes.

2. New Zealand's GST system and the property sector

In New Zealand the supply of land is subject to GST. The inclusion of land within the taxing base is consistent with the objective that GST applies to the widest possible range of goods and services, with minimal exceptions. This reduces the extent to which GST alters consumption and production decisions, thereby reducing compliance and administrative costs and limiting the tax's impact on economic efficiency.

Land is included in the GST base because it provides services much like other consumer durables such as clothing, cars or appliances.³ As a result, many activities and transactions involving land are taxable. One notable exception is sales by households of their family home.⁴ Sales of family homes are not subject to GST because households are not GST-registered, which legally excludes them from charging GST.

Because GST is designed to tax the final consumption of goods and services in New Zealand rather than production, one of the basic principles of the tax is that businesses should not be subject to GST when producing goods and services. This is achieved through the credit-invoice mechanism. Under this method, a liability for GST arises every time goods and services are supplied by a GST-registered business in the course of a taxable activity. GST is also imposed on imported goods and services. Tax is, therefore, paid throughout the production and distribution chain, but because GST-registered businesses can deduct GST paid on their inputs, the tax is ultimately passed on to the final consumer. Property is no different in this regard in that currently the sale of a property generates a GST credit to the purchaser and a GST liability to the seller.

Various schemes, however, have been employed to exploit the GST system by ensuring that a purchaser of a property receives an input tax deduction without there

³ The policy and legal arguments for including land in the GST base are discussed in Cnossen (1996).

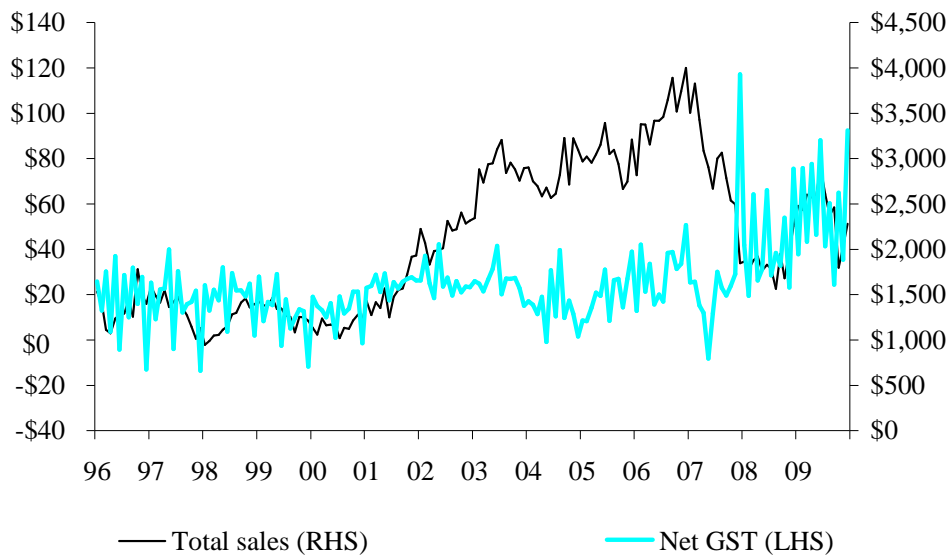
⁴ Rental income is also exempt from GST because it is simpler to tax the stock of land (and any new construction) rather than the income flow from it. This is the same treatment as for consumer durables.

being corresponding output tax paid by the seller. Commonly, this has been achieved by the use of a “phoenix” company. A phoenix company is a company that is “reborn” soon after (and in some cases before) its failure, with the new company taking on the failed company’s business, often using a similar name and the same managers, directors and the assets.

We provide two examples to illustrate how the schemes work. In the first example, property is sold to a third party specific purpose company, which sells the property to a consumer. The specific purpose company claims an input tax deduction but then fails to pay output tax on the sale to the consumer because it has been liquidated, and the GST debt is written off. The company then is “reborn” but it disclaims any responsibility for the debt of the previous company (a phoenix arrangement).

In the second example, A sells a property to B in an unconditional contract, where B is a specific purpose company with no assets and no activity other than the purchase of the property. A pays output tax and B receives a credit. However, settlement does not take place and a credit note is issued. A claims back output tax using the credit note but B is unable to repay the input tax credit because it has no assets.

Figure 2. Monthly GST collection from the property sector and dwelling and section sales (\$m)



Source: Inland Revenue and Real Estate Institute of New Zealand

These types of tax aggressive arrangements raised concern that insufficient GST is being paid on the sale of property. Their occurrence coincided with a fairly stable net GST collection from the property sector of about \$20 million per month at a time when New Zealand’s housing market was reaching record high levels. This can be seen in Figure 2, which plots the net GST collected from the property sector and the value of dwelling and section sales by month. Only some of the difference between GST collected and property sales likely can be explained by increased household activity not subject to GST.

3. Methodology and data

This section describes the methodology and data used to estimate the impact on GST collection and compliance in the property sector following the various measures and court cases against GST aggressive arrangements.

3.1 Methodology

To quantify the impact on GST collection and compliance in the property sector vector autoregression (VAR) modelling is used. VAR models, first proposed by Sims (1980), have become a popular technique in empirical macroeconomics and finance. They have proven to be especially useful for describing the dynamic behaviour of time series and for forecasting (see Lütkepohl 1991).

A VAR is a system of equations, where each variable depends on its past realisations as well as the past realisations of all other variables in the system.

Suppose that the $1 \times m$ row vector Y_t denotes the t^{th} observation on a set of variables. Then a VAR model of order p , VAR(p), can be written as

$$Y_t = \alpha + Y_{t-1}\Phi_1 + \dots + Y_{t-p}\Phi_p + U_t \quad U_t \sim \text{i.i.d.}(0, \Omega) \quad (1)$$

where α is a $1 \times m$ row vector and Φ_1 through Φ_p are $m \times m$ matrices of coefficients to be estimated. If y_{ti} denotes the i^{th} element of Y_t and $\phi_{j,ki}$ denotes the ki^{th} element of Φ_j , the i^{th} column of equation (1) can be written as

$$y_{ti} = \alpha_i + \sum_{j=1}^p \sum_{k=1}^m y_{t-j,k} \phi_{j,ki} + u_{ti} \quad (2)$$

Equation (2) is simply a linear regression, in which y_{ti} depends on a constant term and lags 1 through p of all the m variables in the system. A VAR(p) model as described by equation (1) is hence a seemingly unrelated regression (SUR) model and because the same variables appear on the right hand side of equation (2) for all i , ordinary least squares (OLS) estimates for each equation are identical to the generalised least squares (GLS) estimates for the system of equations described in (1).

To quantify the impact on GST collection and compliance in the property sector since the various actions and court cases against aggressive GST arrangements, a range of VAR models are estimated for the period April 1996 to May 2007. The estimated coefficients Φ_1 through Φ_p from the various models are then used to produce one-step-ahead, out-of-sample forecasts of how much net GST should have been collected from the property sector over the period June 2007 to March 2010. Forecast net GST is obtained by averaging the different forecasts. Following Stock and Watson (2004) a simple average of point forecasts, which has been found to be empirically effective, is used.

The method of model forecast combination, i.e. the averaging of a range of forecasts, is applied because it has been found to produce better forecasts compared to using a single forecast model. It insures against selecting a single bad model.

Forecast combinations can produce better forecasts on average than methods based on a single forecasting model for several reasons. Forecasting models may be subject to

idiosyncratic biases. If forecasting models are subject to different biases, combining forecasts may average out these biases and improve forecast accuracy (Timmerman 2006). Moreover, unknown instabilities (structural breaks) in the data might favour one forecasting model over another at different points in time (Clark and McCracken 2007). Some models may adjust to instabilities more quickly than other models. Combining forecasts from different models should therefore result in forecasts that are more robust in the face of these instabilities than those from a single model.

The coefficients from the various VAR models estimated from April 1996 to May 2007 should take into account the existing GST fraud and avoidance during that period. Any deterioration in the forecast performance after May 2007 is therefore interpreted as a change in compliance. That is, consistently negative (positive) out-of-sample forecast errors are taken to indicate an improvement (a deterioration) in GST compliance.

Each VAR model contains five variables:

1. net GST collected from the property sector,
2. a housing market variable (dwelling and section sales; dwelling sales only; section sales only; residential and non-residential building consents; residential building consents only; non-residential building consents only),
3. sales days (dwellings and sections (weighted by sales); dwellings only; sections only),
4. the ratio of building consents to total sales or the ratio of the number of building consents to the number (weighted by sales) of dwelling and section sales, and
5. private sector credit growth.

The data sources for these variables, together with the reasons for selecting them, are discussed below.

The VAR models include lags of all the variables. This should capture time delays between when a property developer purchases land, develops it and ultimately sells off parts of the development.

The variables result in 36 combinations, which are listed in Appendix A. The 36 combinations are estimated for three different models. The first model includes all variables in levels. In the second model, all variables are first differenced. The third is a mixed model where net GST and the housing market variables are first differenced and the remainder of the variables are included in levels. The mixed model specification was chosen based on KPSS (Kwiatkowski, Phillips, Schmidt and Shin 1992) unit root tests. The 108 (36×3) models are estimated including 12 to 6 lags, thus resulting in 756 (108×7) different specifications. Forecast GST is obtained by averaging over the 756 different forecasts.

3.2 Data

For the purposes of the study, GST payments from the property sector were measured by the net GST collected by Inland Revenue (i.e. gross GST less refunds from GST returns) of GST-registered businesses whose industry classification begins with 771 (property and business services) or 772 (real estate agents). In addition, businesses

with the word “property” in the business description of their GST application were included.

Housing market variables were obtained from the Real Estate Institute of New Zealand (REINZ) and Statistics New Zealand. We used time series from REINZ on the value and number of dwelling and section sales and the median number of days it takes to sell (sales days) dwellings and sections. We used Statistics New Zealand data on the value and number of residential and non-residential building consents.

All else equal, an increase (decrease) in housing market activity, measured by dwelling and section sales or residential and non-residential building consents, would be expected to raise (lower) GST collection.⁵ Median sales days of dwellings or sections or an average weighted by sales should also reflect housing market conditions. That is, a decline (increase) in median sales days is expected to coincide with a pick-up (slowing) of the housing market. Furthermore, median sales days may affect net GST payments by altering the timing between refunds being claimed and output tax being paid. For example, following a housing market slowdown GST refunds would be expected to moderate only with a lag as building contracts take time to complete, whereas gross GST payments would be likely to fall immediately with declining property sales.

Net GST payments are also likely to be affected by the proportion of new houses being sold compared to existing buildings. This is because the sale of a new house to a non-GST-registered person leads to a gross GST payment with no further refunds resulting from that transaction. To capture that net GST should increase (fall) when there is a rising (declining) proportion of new dwelling sales we constructed two variables. The first variable was the ratio of the value of building consents to the value of total sales and the second was the ratio of the number of building consents to the number of total sales.

Data on private sector credit growth, obtained from the Reserve Bank of New Zealand, has been included in the estimation to capture credit market conditions. A tightening in lending criteria, and hence reduction in the supply of credit, should reduce loans being made to more risky borrowers. A reduction in lending to risky borrowers, who are more likely to default on their debt, is expected to lower aggressive tax planning and reduce the number of taxpayers not meeting their GST obligations. The opposite should, in principle, hold true for an easing in lending criteria. We also note that over the later half of the study period a number of finance companies that had lent heavily to the property sector went into liquidation, which further reduced access to finance.

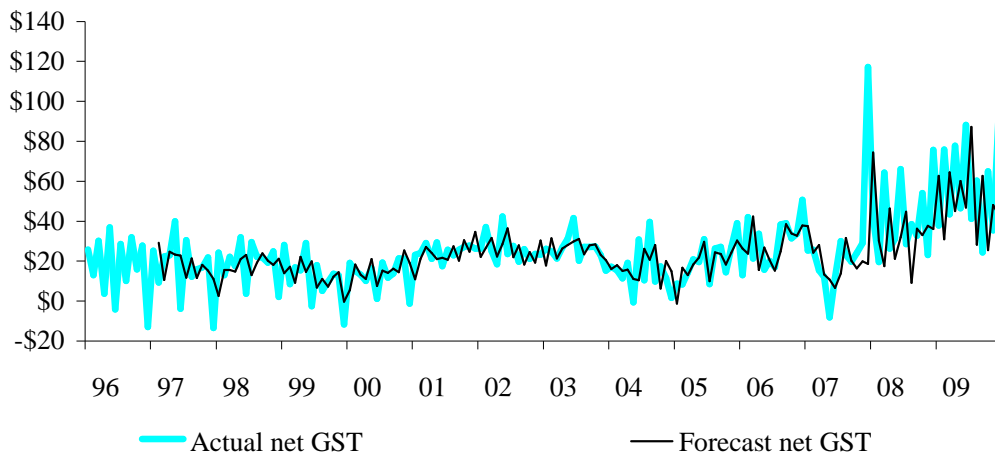
All series are monthly and seasonally adjusted except for private sector credit growth, which is included on the basis of annual percent changes of one month compared to the same month in the previous year. The estimation period of April 1996 to March 2010 is dictated by the availability of GST data by industry. Graphs of the variables included in the estimation are contained in Appendix B.

⁵ As noted earlier, not all of these sales would, however, be subject to GST. Sales of private residential property between individuals are generally not subject to GST.

4. Results

This section discusses our findings. We then use the results to quantify the increase in compliance since the various actions and court cases against aggressive GST arrangements.

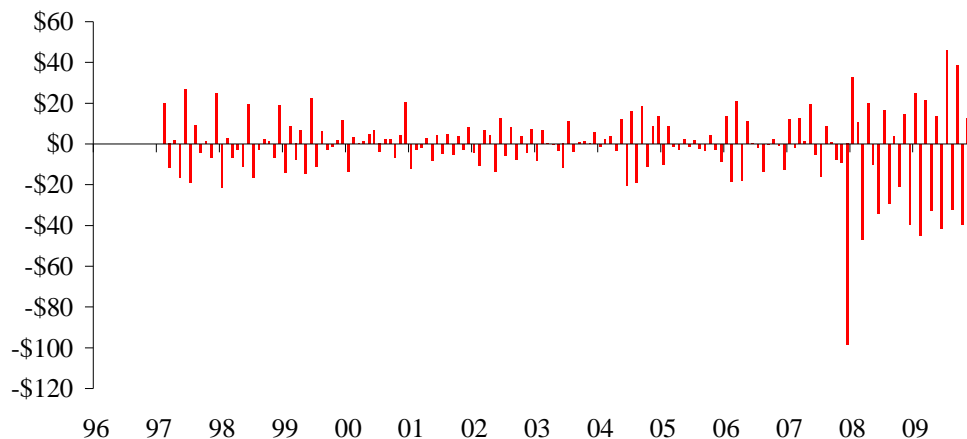
Figure 3. Actual and forecast GST collection from the property sector (\$m)



Source: Inland Revenue and own calculations

Figure 3 plots actual net GST collected from the property sector compared to forecast GST. It shows that actual and forecast GST move together fairly closely up until the last quarter of 2007. Since the end of 2007, however, actual GST collection has tended to exceed forecast GST.

Figure 4. Forecast errors (\$m)

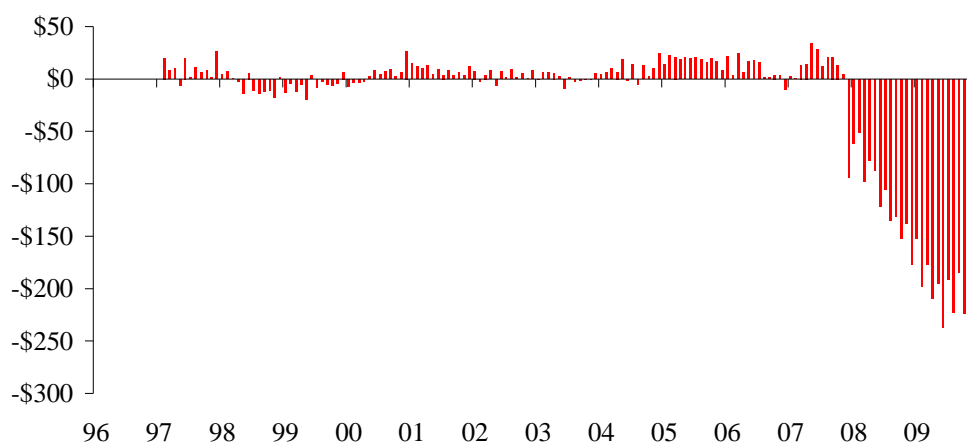


Source: Own calculations

This variation is highlighted in the forecast errors plotted in Figure 4, these errors being the difference between forecast and actual GST. There are both positive and negative errors over most of the estimation period but since about September 2007 the errors have mainly been negative, that is, actual net GST collected has exceeded forecast GST over that period. Consistently negative forecast errors suggest a decline in GST fraud and avoidance in the property sector.

An estimate of the increase in GST compliance in the property sector can be obtained by summing forecast errors. The cumulative errors, which are plotted in Figure 5, are relatively small up until February 2008. They are somewhat larger and more consistently positive over 2005 to 2007, suggesting that the coefficient estimates may not fully capture the existing GST fraud and avoidance over that period. After February 2008 the cumulative forecast errors have been large and negative, that is, actual GST collected has exceeded forecast GST.

Figure 5. Cumulative forecast errors (\$m)



Source: Own calculations

The cumulative forecast errors between June 2007, the first month of increased funding for auditing of property transactions, and March 2010, the last month of available data, is about \$260 million. They suggest that, on average, the various measures and court cases against GST fraud and avoidance may have increased GST collection from the property sector by about \$90 million per annum.⁶

5. Concluding remarks

GST aggressive arrangements in the property sector have led to concern in New Zealand that insufficient goods and services tax is being paid on the sale of property. Various measures have been undertaken to address this issue. Moreover, a number of court cases have ruled against aggressive GST schemes. This paper provided initial estimates of the potential impact of these actions on GST compliance in the property

⁶ The \$90 million per year is calculated as follows: \$260m * 34 months / 12 months, where 34 months is the number of months after the increase in funding for auditing of property transactions.

sector. The findings suggest that GST collection from the property sector may have increased by about \$90 million per year since mid-2007. These gains are expected to be sustained in the long-term by the proposed legislative change announced in Budget 2010, to zero rate land transactions between GST-registered businesses.

References

- Clark, T. E. and M. W. McCracken (2007). Forecasting with small macroeconomic VARs in the presence of instabilities. *Federal Reserve Board Finance and Economics Discussion Series* (41), 5-31.
- Cnossen, S. (1996). VAT treatment of immovable property. In: Thuronyi, V. (Ed.). *Tax law design and drafting*. Vol. 1. Washington, DC: International Monetary Fund, 231-245.
- Inland Revenue and Treasury (2008). Options for strengthening GST neutrality in business-to-business transactions. *Officials' issues paper*. <http://www.taxpolicy.ird.govt.nz/sites/default/files/2008-ip-gst-b2b-neutrality.pdf>.
- Kwiatkowski, D., P. C. B. Phillips, P. Schmidt and Y. Shin (1992). Testing the null hypothesis of stationarity against the alternative of a unit root: How sure are we that economic time series have a unit root? *Journal of Econometrics* 54, 159-178.
- Lütkepohl, H. (1991). *Introduction to Multiple Time Series Analysis*. Heidelberg: Springer-Verlag.
- New Zealand Government (2009). GST: Accounting for land and other high-value assets. *Government discussion document*. <http://www.taxpolicy.ird.govt.nz/sites/default/files/2009-dd-gst.pdf>.
- Sims, C. A. (1980). Macroeconomics and reality. *Econometrica* 48, 1-48.
- Stock, J. H. and M. W. Watson (2004). Combination forecasts of output growth in a seven-country data set. *Journal of Forecasting* 23, 405-430.
- Timmermann, A. (2006). Forecast combinations. In: Elliott, G., C. W. J. Granger, and A. Timmermann (Eds.). *Handbook of Economic Forecasting*. Vol. 1. Amsterdam: Elsevier, 136-196.

Appendix B

Figure A1. Data

