

## **A survey-based leading indicator for Australian retail sales growth**

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A leading indicator for retail sales dollar growth has been developed, which is based solely on consumer survey data. It has been designed to predict growth over a six to eight month horizon. In particular, in May and November, it predicts growth over the subsequent six month period commencing in July and January respectively. This is a regular problem faced by retailers and their suppliers, shopping centre owners, and economic forecasters.

The set of models presented here offer improved forecasting accuracy and a scenario evaluation capability. Higher accuracy results from including an important variable – consumer willingness to spend – which is unique and has been developed by foreseechange over recent decades. It contains relevant information not captured by standard economic factors such as household disposable income and house prices.

More accurate forecasts mean better inventory decisions and financial planning. An understanding of variations in consumer willingness to spend can lead to more effective advertising investment decisions. As willingness to spend is based on consumer surveys, it can be analysed by demographic and location.

The leading indicator is based on three questions. One measures willingness to spend, another measures expected financial situation, and the other measure expected house prices. The first and third of these have been developed by foreseechange and the second is based on a component of the Westpac – Melbourne Institute index of consumer sentiment.

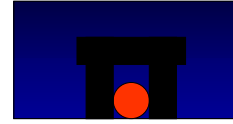
Willingness to spend is measured by asking survey respondents how discretionary funds would be allocated to spending, building savings, and loan repayment. It captures the trade-offs consumer have to make when they have (limited) discretionary funds. The question is preceded by several others which are designed to help put respondents in the right frame of mind for such decisions.

In this document, I compare the leading index model fit with a model based on actual household disposable income and house prices. The actual data is, of course, not available until after the forecast period has ended but this serves as a benchmark for evaluating the performance of the leading indicator.

Chart 1 shows the model based on actual household disposable income and house prices over the period 2004H2 to 2015H1. Both explanatory variables are highly statistically significant and 46% of the variance is explained. This is the explanatory power of the model assuming we can predict household disposable income and house prices with perfect accuracy over this horizon. This is called the ex post model.

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A very substantial increase in the predictive accuracy of the model is achieved by including the willingness to spend survey data (Chart 2). The willingness to spend data is known before the half year commences. The variance explained has been increased from 46% to 78% and the willingness to spend measure is highly statistically significant. The precision of the estimates of the coefficients for household disposable income and house prices has been improved with the inclusion of willingness to spend.

This demonstrates that the priority consumers attach to spending, rather than paying off debt or building savings, is a very important predictor of actual spending. The implication is that consumers' priorities for using discretionary income change over time and, in combination with changes in actual income and asset prices, determine actual spending decisions. This model is called the scenario evaluation model because sensitivity to household disposable income and house price scenarios can be evaluated.

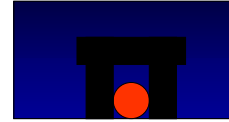
Chart 3 shows the leading indicator model fit, based only on the three survey-based measures taken before the half year begins. The model explains 58% of the variance and all explanatory variables are statistically significant.

The model predicts turning points quite well but is a little pessimistic over the 2006 and 2007 period, due to the leading indicators for household disposable income and house prices both being pessimistic (see Charts 4 and 5). In the case of household disposable income, the period from late 2006 to early 2009 was a period of tax cuts and fiscal stimulus. Judgement based on information about fiscal policy available at the time could have been applied to the scenario evaluation model to improve accuracy.

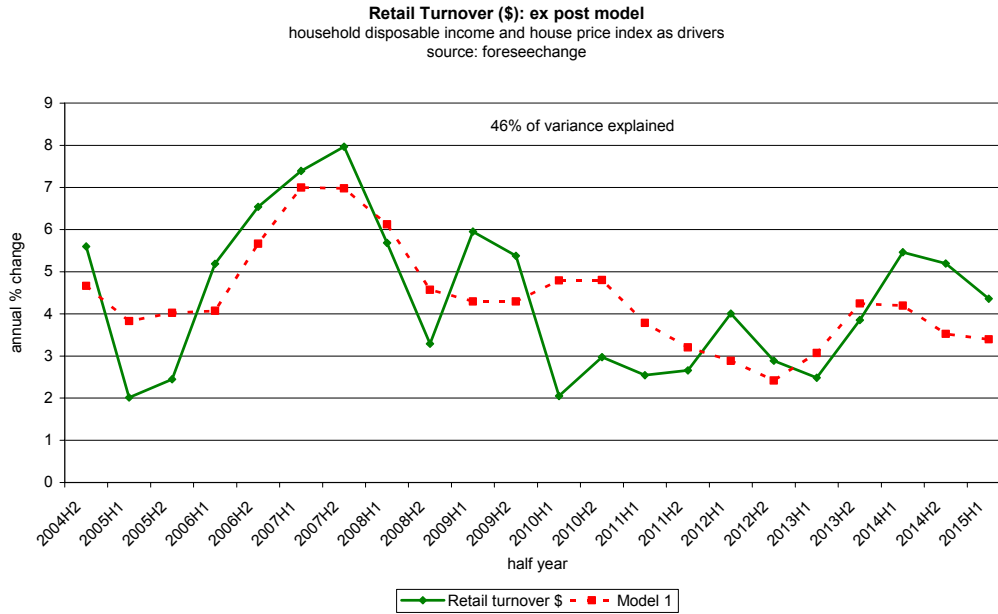
In summary:

- The importance of willingness to spend is nearly as high as ability to spend and including it in models improves the fit and increases the precision of estimated impacts of other variables.
- We have developed a leading indicator based solely on consumer surveys, which predicts six to eight months into the future with reasonable accuracy and which picks turning points well.
- In the process, useful leading indicators have been developed for household disposable income and house prices. These can serve as a starting point for forecasts. These could then be judgementally updated as partial data becomes available during the period.

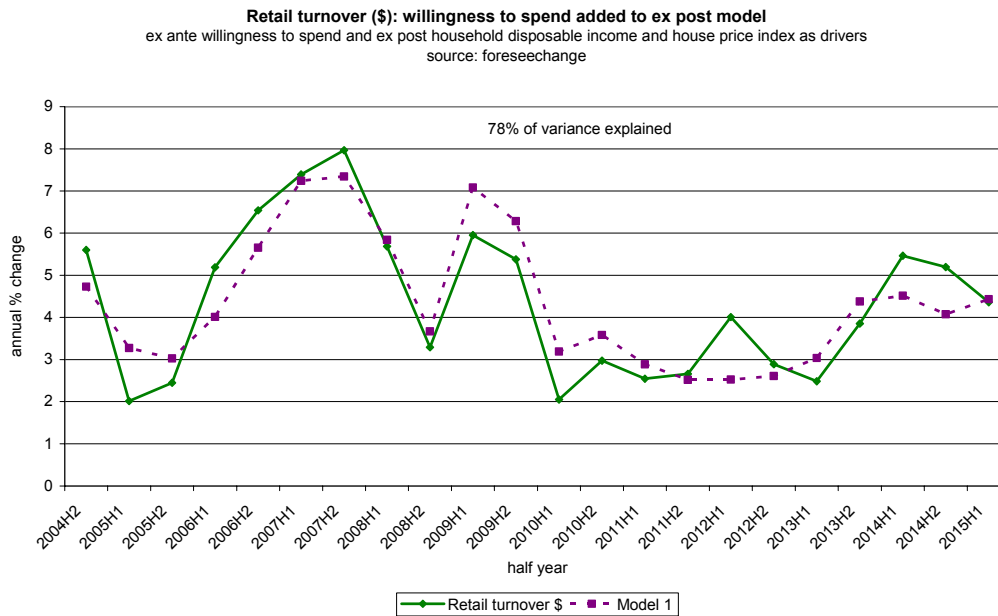
Similar indicators are under development for other components of consumer spending.

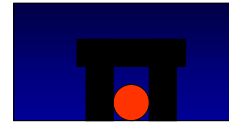


**Chart 1: ex post model**

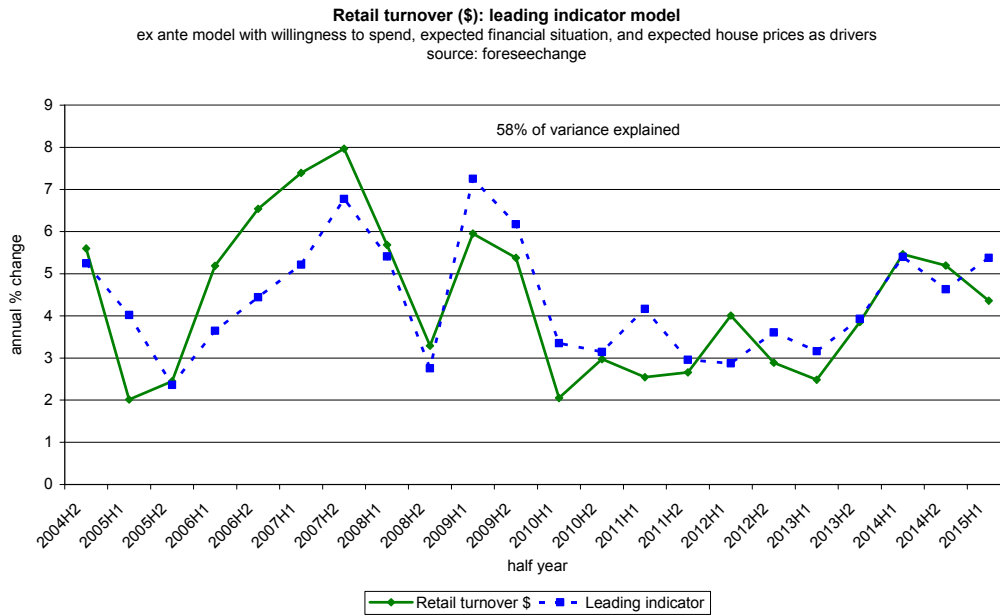


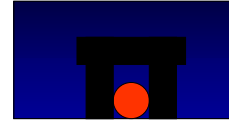
**Chart 2: scenario evaluation model**



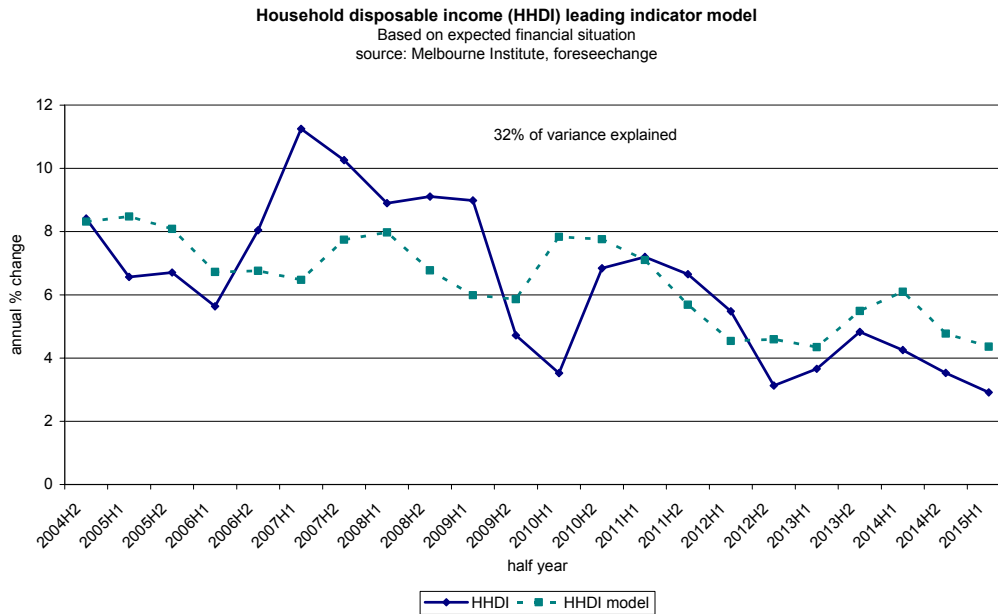


**Chart 3: leading indicator model**

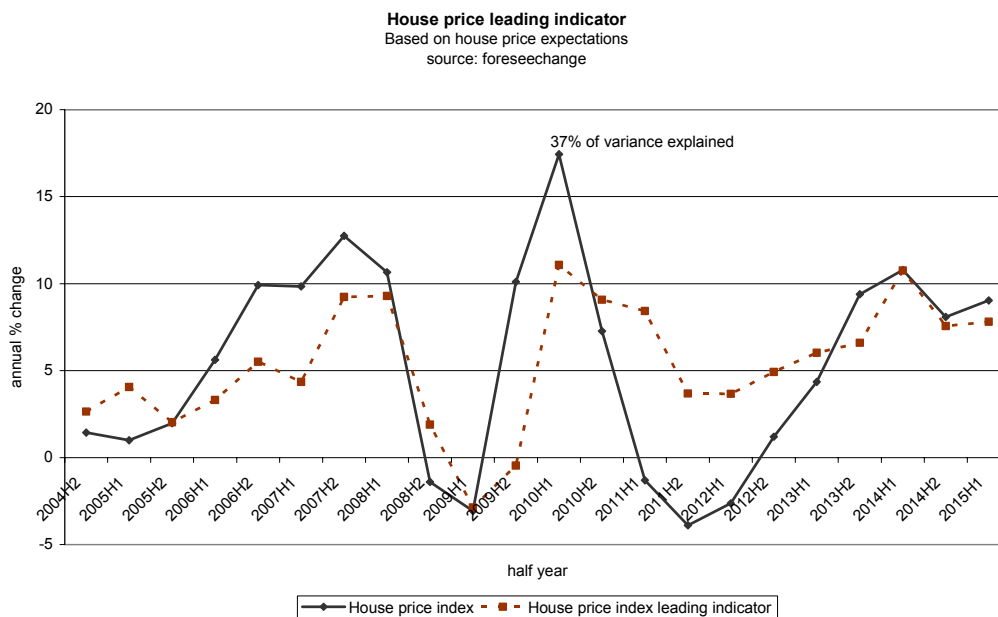


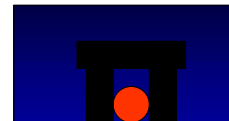


**Chart 4**



**Chart 5**





## Consumer Pulse + Consumer Spending Leading Indicators: November 2015 Order Form

<b>Name</b>	
<b>Position Title</b>	
<b>Organisation</b>	
<b>Postal Address</b>	
<b>Email Address</b> (the report will be sent by email)	
<b>Telephone Number</b>	

The cost is \$495 (includes GST). Please indicate preferred method of payment.

	Please send an invoice
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	Cheque enclosed (payable to foreseechange Pty Ltd)
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	Mastercard
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	Visa
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Account Number														
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Cardholder's Name	
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Card valid until   mm   yy

Cardholder's signature: \_\_\_\_\_

Mail this form to: <b>foreseechange</b> PO Box 401 Brunswick, Victoria 3056 Australia Or scan and email to charlien@bigpond.com	The report will be sent by email.  The report will also be available for purchase online in late November at <a href="http://www.foreseechange.com.au">www.foreseechange.com.au</a> . Payment is via PayPal.
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