



Lay people's models of the economy: A study based on surveys of consumer sentiments



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ABSTRACT

The purpose of this paper is to use a large data set comprising individual's responses to survey questions about future economic conditions, unemployment and prices to explore lay people's models of the economy and specifically their understanding of the relationship between unemployment and economic activity and also between unemployment and prices. The data is taken from the questionnaires used to form monthly indexes of consumer sentiments in Australia. We ask if the implied bivariate relationships are rational in the sense used by Muth (1961) and if they are consistent with the good-begets-good heuristic proposed by Leiser and Aroch (2009). We also ask if they are consistent with the actual operation of economic – and especially monetary – policy in Australia. We find that the data does provide some support for these hypotheses and for recent work in behavioural macroeconomics utilising the good-begets-good heuristic.

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1. Introduction

In 1946 the Survey Research Centre at the University of Michigan commenced regular monthly surveys of US consumers primarily in order to obtain information about likely consumer spending and saving behaviour for forecasting purposes. The survey instrument and the associated indexes of consumer sentiments were developed by George Katona and cover not only individual consumer's spending intentions but also how they view prospects for a number of macroeconomic variables (especially inflation, unemployment and output) over the near term.¹ Since it was first applied in the USA, Katona's survey has been adopted by many other advanced economies, including Australia.

While considerable attention has been devoted to aggregating the survey responses into an index of consumer sentiment and also to researching expectations of particular individual variables (inflation expectations especially), little attention has been devoted to exploring the bivariate relationships which are implicit in the respondents' answers to questions about the behaviour of individual macroeconomic variables. There are three reasons why these relationships, as revealed to us by the

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¹ See Curtin (1982) and Wärneryd (1982) for further information on the history of the survey and Katona's role.

surveys of consumers, are of interest. First, the democratic or libertarian ideal suggests that we should be interested in lay people's mental maps or models of the economy; the analysis of individual's responses to this questionnaire provides one way to obtain this information. Second, it is of interest to know if lay people's ideas are rational in the 'Muthian sense' in which case their expectations, "since they are informed predictions of future events, are essentially the same as the predictions of the relevant economic theory" (Muth, 1961, p. 316). In particular it is of interest to know if lay people's ideas are consistent with the way the economy, and especially monetary policy, operates. Finally, we need to understand why people not trained in economic theory see things the way they do. This is important for the design of good economic policy, especially if the assumption of rational expectations is dropped as: (a) this means we have to take the heterogeneity of expectations into account when building policy-oriented models, and (b) often policy changes are aimed at changing people's expectations (this is especially in the case of monetary policy aimed at combating inflation) and this presumes that we have some understanding of what those expectations are and how they are formed. One attempt to explain why people not trained in economic theory see things the way they do is the good-begets-good heuristic² posited by Leiser and Aroch (2009) and which we shall discuss in more detail in the next section of the paper. The consumer's survey responses provide an opportunity to test this hypothesis with a relatively large sample size.

As mentioned above, the survey questionnaires which are used as the basis for the computation of a consumer sentiment index include questions about how individuals view prospects for prices, unemployment and the level of economic activity over the coming year. Since we have access to each individual's responses to these questions in every month the survey has been operating in Australia, we are in a position to see whether these variables are thought to be related and, if they are, to see if they are thought to be positively or negatively related.

For some time there has been broad agreement amongst economists as to the 'short-run' relationship between the three variables for which we have information. Textbooks in macroeconomics, even at the most elementary level, cover two doctrines of relevance to our study. The first, is "Okun's Law" which states that there is an inverse relationship between changes in unemployment and in the level of economic activity.³ The second is the "Phillip's Curve" which states that there is an inverse relationship (or 'trade-off') between the rate of unemployment and the rate of inflation in an economy.⁴ Since we wish to know if lay people's ideas are rational in the 'Muthian sense' we will test the hypotheses that lay people's views are consistent with Okun's Law and the Phillip's Curve. This means that we will go beyond merely describing the apparent bivariate relationships to perform some basic statistical tests. The survey responses are ordinal and suitable for this purpose. The statistical test adopted in this paper is the well-known Kendall's tau test which is a common non-parametric measure of association.

To summarise: the aim of the paper is to describe the implied connection in lay people's minds between (changes in) unemployment & economic activity and also between (changes in) unemployment & prices. To do this we analyse survey data which gives over 200,000 observations of consumer's views about the expected state of the economy (and specifically future economic conditions, unemployment and prices) covering every month for 17 years. The paper is organised as follows. Section 2 presents a brief review of previous research on lay persons' understanding of economic relationships. Section 3 gives a brief description of the survey data while Section 4 reports the results. Concluding comments and caveats are in Section 5.

2. Previous work on lay people's models of the economy

Surprisingly, there has been very little work on lay persons' understanding of economic relationships. Most authors simply examine lay people's attitudes or opinions on specific economic outcomes. Subjects studied include inflation (see Leiser and Drori (2005) and Ranyard, Del Missier, Bonini, Duxbury, and Summers (2008) for examples), the global financial crisis (see for example Gangl, Kastlunger, Kirchler, and Voracek (2012), the papers in the 2010 special issue of the *Journal of Socio-Economics* on 'The Financial Crisis' and Christandl (2013)) and policy choices (examples include higher taxes and government expenditure on welfare, see Heinemann and Hennighausen (2012) and Stix (2013)). Occasionally there is a comparison between the responses of lay people and professional economists to survey questions (Blendon et al. (1997) and Caplan (2001)). Compared with our study however these papers do not focus on lay people's understanding of the bivariate relationship between key macroeconomic variables. Having said that, we are aware of three studies which *do* seek to uncover the connections lay people see between macroeconomic variables or ideas. One is the paper by Williamson and Wearing (1996). They asked open-ended questions of 95 lay people in an attempt, inter alia, to reveal those economic concepts the respondents saw as linked and the direction and sign of the relationship between them. Each interviewee's

² Essentially this says that if a number of events (or variables) are judged to be either good or bad that any two items within each group will be thought to be positively related with each other while any two items from different groups will be thought to be negatively or inversely related to each other.

³ This is named after the US applied economist Arthur Okun who in 1962 noticed the relationship for US data. Okun was a Yale Professor of Economics who served on the Council of Economic Advisers during the Kennedy and Johnson presidencies.

⁴ This is named after A.W. (Bill) Phillips, a New Zealander who was Tooke Professor of Economic Science and Statistics at the University of London 1958–1967. Phillips published his first paper on the inverse relationship between inflation and unemployment in 1958. Since then there has been a great deal of work on the nature of the relationship between inflation and unemployment. The hypothesis we consider here (that the two variables are negatively related) is that found in basic economics texts. However, in Section 5 of the paper we will argue that the way monetary policy operates in Australia may provide support for the expectation of a positive relationship between inflation and unemployment.

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