

Forward-looking Behavior and Stockpiling of Prescription Drugs

Marianne Simonsen

Department of Economics and
Business
Aarhus University

Lars Skipper

Department of Economics and
Business
Aarhus University

Niels Skipper

Department of Economics and
Business
Aarhus University

Extended abstract

During the last decades health spending within OECD has grown at a faster rate than the rest of the economy absorbing an increasing share of the gross domestic product. Pharmaceutical expenditure accounts for one fifth (19%) of all health expenditures; has a growth rate of more than twice that of total health expenditures; and is foreseen to increase even further in the future, putting severe pressure on health care budgets (OECD, 2009, 2011).

The purpose of this research is to use the exceptionally detailed nature of data for pharmaceutical purchases in Denmark to analyze how consumers behave and respond to the subsidy scheme for prescription drugs. The Danish consumer of pharmaceuticals faces a non-linear pricing scheme where subsidies increase as total pharmaceutical consumption accumulates. This type of price variation is, in fact, very common across many countries, either due to the design of private health insurance contracts or because of public subsidy schemes. The non-linearity of the pricing scheme means that purchases today will affect (lower) prices faced by the healthcare consumer tomorrow. Moreover, and this is for our purposes the key feature of the subsidy scheme, a consumer's account is reset exactly one year after his first purchase. Conditional on subsidy receipt in the (individual) subsidy year, this will generate a discrete upwards jump in the price of drugs between the last day of the current subsidy year and the first day of the next. Combined with storability of (most) drugs this enables the consumer to detach the timing of purchase from the timing of consumption as

opposed to other types of healthcare goods. In a sense the Danish healthcare consumer can purchase the prescription drugs cheaply when prices are low and ‘resell’ them to her future self when prices are high.

The fact that healthcare consumers can effectively stockpile prescription drugs for future consumption when prices are low (relevant in the Danish case outlined below) or postpone purchases and consumption to future periods when prices are high (as in the famous American donut hole of Medicare part D) has to the best of our knowledge never been studied before. Failure to take these possibilities of intertemporal substitution into account may lead researchers to mis-measure long run responsiveness of prescription drug demand to prices. For policy makers to perform welfare analyses and improve on existing health insurance contracts, studies with explicit attention to the responses and reactions to these dynamic features of most health insurance contracts are needed; see Einav et al. (2013). If healthcare consumers can forecast and stockpile or postpone purchases then existing static price elasticity estimates will be upward biased and coinsurance rates may be increased without much fear of the impact on patient health. Of course, the ability of consumers to forecast and react to future events is interesting from a general point of view; see, for example Banks et al. (1998) on the famous retirement-savings puzzle.

Specifically, we study and quantify the end-of-subsidy year response to the possibility of stockpiling. We find that a) consumers (or doctors on their behalf) react to the incentives inherent in the subsidy scheme by stockpiling and that b) that there is heterogeneity in this behavior across individuals, which depends on gains and degree of predictability of future need.