Friedel Bolle
Habit Formation and Long-Term Contracts

ABSTRACT. It is often assumed that the consumption of certain goods causes changes in preferences: The more we consume these goods, the more we like them. Extreme examples of such habit-forming goods are drugs (from heroin to cigarettes); mild examples are sweets, books, and sports. The process of habit formation is usually described as the accumulation of a certain form of “human capital” which is introduced as a variable in the utility function. As such, habit formation is regarded as similar to the technologically necessary joint consumption of capital goods and variable inputs: heating system and fuel, video-recorder and video-tape, etc. By developing a certain capital stock, an individual — or an economy — becomes dependent on or addicted to a certain complementary input. This paper contains a discussion of reasons why long-term contracts for habit-forming goods are concluded. Furthermore, it is investigated which form such contracts should have. This helps us to understand the frequent appearance of Take or Pay contracts in the energy markets as well as in book clubs, fitness centres, language courses, etc.

INTRODUCTION

It is often assumed that the consumption of certain goods causes changes in preferences: The more we consume these goods, the more we like them. Extreme examples of such habit forming goods are drugs (from heroin to cigarettes); mild examples are sweets, books, and sports. The process of habit formation is usually described as the accumulation of a certain form of “human capital” which is introduced as a variable in the utility function. As such, habit formation is regarded as similar to the technologically necessary joint consumption of capital goods and variable inputs: heating system and fuel, video-recorder and video-tapes, etc. By developing a certain capital stock, an individual — or an economy — becomes dependent on or addicted to a certain complementary input.

Sometimes a difference is made between beneficial and harmful addictions (Stigler & Becker, 1977, for example). It is difficult to give a convincing definition of these terms. In my view, it is unfortunate to define them by outside values or static (second order!) preferences (Bolle, 1983, 1989a). Perhaps the best possibility is: If today I want to be addicted tomorrow, then this is a case of...
beneficial addiction; if *today* I do not want to be addicted tomorrow, this is a case of harmful addiction.

It is interesting to observe that many goods which have the potential to addict us beneficially or form our habits in a desired way, are offered through certain long-term contracts. Many people would like to be seen as sophisticated (for example by reading regularly), to have a well-formed body (i.e., to exercise regularly), to be able to speak Spanish or French (i.e., to take language lessons), etc. Book clubs, fitness centres, language courses, and the like offer their services, but usually in a very special way. They offer their services under long-term contracts with monthly, quarterly, or yearly payments. In return, the customers may order books, exercise, or take language lessons up to a certain limit at zero additional cost. If the customers want to purchase beyond this limit, additional payment is required.

We see such long-term contracts, too, in the trade of natural resources, especially natural gas. The terms of these contracts cover longer periods, however, typically 15 to 20 years. These contracts are called Take or Pay contracts (ToP contracts) or Minimum Bill contracts. The customers pay for a certain amount of the resource whether they can use it (resell it) or not. Up to this ToP quantity, the marginal costs of obtaining the good are zero.

If the marginal costs of production are larger than zero, then the buyer and the seller seem to have concluded an inefficient contract (Masten, 1988). Without habit formation, an efficient contract would require that the marginal costs of obtaining the good are equal to the marginal cost of production. Let us call such contracts MC contracts. So our first question is whether or not this is different with respect to habit-forming goods. We will see that here too, MC contracts are efficient if the customers have consistent long-term preferences, and if the contract can be enforced without incurring costs. So, in a world with consistent consumers and absolutely binding contracts, the existence of ToP contracts cannot be explained. Only by leaving this perfect world can we understand why ToP contracts are concluded in the gas trade as well as for the consumption of certain goods.

In this article, I want to propose three possible reasons for concluding ToP contracts. After giving evidence of the importance of ToP contracts (Section II) and after proving the optimality of MC contracts (Section III), I will investigate the implications of breach of contracts (Section IV), of consumers having short-term prefer-