Pricing and Welfare Implications of Parallel Imports in the Pharmaceutical Industry

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In this paper we investigate the implications of permitting parallel imports of pharmaceuticals produced by a monopoly, from one country to another. We use a model where countries differ in the patients’ level of co-payment for buying pharmaceuticals, and patients differ in the utility obtained from the consumption of pharmaceuticals. We show that the effects of parallel imports on total welfare are as follows: On the one hand, when countries differ in their health system only, parallel imports decrease total welfare; On the other hand, when countries differ in the health needs of their patients only, parallel imports enhance total welfare.

Keywords: parallel imports, welfare

JEL classification: F1, I18, L65

1. Introduction

With this paper, we participate to the ongoing debate over the benefits and drawbacks from permitting parallel imports among countries. In particular, we investigate the pricing and welfare implications of parallel trade of pharmaceuticals between two countries. Parallel imports are goods produced genuinely under intellectual property right (IPR) protection, placed into circulation in one market, and then imported into a second market without the authorization of the IPR owner. They are identical to the legitimate products, except that they may be packaged differently and may not carry the original manufacturer’s warranty (Maskus, 2000).

One important reason why parallel imports might arise, if they are permitted, is to arbitrage away international price discrimination, which is widely observed for pharmaceutical products (see Maskus, 2000). One expected effect of permitting parallel imports is a convergence in prices between countries. Ganslandt and Maskus (2001) provide evidence on price convergence resulting from parallel trade of pharmaceuticals in EU countries.

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The expected effect of parallel trade in terms of social welfare is not so clear-cut. Welfare is shown to either increase or decrease with parallel imports, depending on whether authors consider any of the following aspects: different drug prices regulations across countries (Pecorino, 2002); efforts of IPR owners to exert vertical price control (Maskus and Chen, 2002); the level of demand dispersion across markets (Malueg and Schwartz, 1994); and the need for manufacturers to recoup their global research and development costs (Danzon, 1998).

The main contribution of our paper is that it stresses the importance of identifying the main determinants of international price discrimination to understand the welfare effects associated with parallel trade. We use a model that accounts for the differences between countries in terms of health insurance reimbursement policies and in terms of drug needs reflected in the patients’ valuation for a drug. We neglect the effects associated with different income levels across countries, even though this difference is likely to be an important determinant of international price discrimination. When we consider differences in income only, the parallel imports are expected to flow from low-income countries towards high-income countries. Since parallel imports generate price convergence between countries, richer countries might benefit from parallel imports while poorer countries might be worse off (see Danzon, 1998). However, international price discrimination is likely to be caused not only by differences in income across countries, but also differences in other relevant characteristics of the demand. Otherwise, how could we answer the question raised by Maskus (2001): Why might prices be higher in poor countries? Characteristics of the demand that are especially relevant for pharmaceuticals rely both on insurance and on drug needs. Both can be specific to countries. On the one hand, the huge variations among national health systems can influence the pricing strategies of pharmaceutical firms. In particular, the level of insurance reimbursement influences the pricing of drugs, since it directly affects the price elasticity of the demand for drugs. If there is no other regulation on drug prices as it is the case in Germany and in Denmark among other countries, the pharmaceutical manufacturers would charge higher prices in countries where insurance is more generous, taking advantage of a lower price elasticity of demand. Pavcnik (2002) provides evidence on this relationship between the patients’ co-payment for buying drugs and drug prices in Germany. On the other hand, pharmaceutical firms might also take advantage of differences in needs for a given drug among countries, charging higher prices where some endemic illness makes the need for the appropriate drug higher than in countries where this illness is not active, for example.

We tackle these issues using a model with the following timing. In the first stage, a multinational monopoly producer sets the price of a patented drug to be sold in two countries. If the prices are different between the two countries, parallel traders can buy, in the second stage of the game, drugs in the low-price country and re-sell them in the high-price country at a price depending on whether the market for parallel imports is monopolistic or competitive. In the third stage of the game, the individuals in both countries choose to consume either one unit of the drug supplied by the monopolist, or one unit of the parallel imported drug, or nothing, so as to maximize their utility.

We first confirm a result already reported in the literature: Parallel trade makes the prices converge between countries. As a reaction to the possible entry of parallel traders