ISBN 978-92-64-04414-2
Pharmaceutical Pricing Policies in a Global Market

Chapter 5

The Impact of National Pricing and Reimbursement Practices on Prices and Availability of Medicines in Other Countries

This chapter examines the transnational impact of national pricing and reimbursement policies. Pharmaceutical pricing policies, and their impacts on prices and availability of medicines, are becoming more exportable in a globalised market. This chapter documents these and assesses the extent of their transnational effects. The various strategies that manufacturers in a globalised pharmaceutical market use in response to national pricing policies are also examined. Finally, the extent to which pricing policies and manufacturers' strategies have led to convergence among countries in pharmaceutical prices is assessed.

Introduction

In a global pharmaceutical market, the impacts of national pricing and reimbursement policies, designed with national objectives in mind, transcend borders with transnational implications. The pharmaceutical policy environment is changing, with national markets becoming ever more integrated, and this in large part is a direct result of globalisation. Trade is easier, mobility is easier, and communication is easier than ever. These trends show no sign of reversing – rather the contrary..

National pricing policies are likely to impact the availability and prices of drugs in foreign countries

Pricing policies can affect the availability and prices of drugs beyond countries' borders through several channels. The most obvious and direct impact of a country's policy is when it is taken up by other countries. Recent history shows that several pricing policy tools have been widely adopted by OECD countries, among which are external benchmarking and reference pricing. Globalisation is a second route by which national pricing policies may have a cross-border impact as growing international trade in pharmaceuticals – including parallel trade – is likely to lead to some convergence in prices across borders.

The expected effects of cross-pollination of pharmaceutical pricing practices

To assess the degree to which national pricing and reimbursement policies stand to influence policies in other countries, we tracked the origins and the diffusion across OECD countries of the use of three techniques with direct or indirect impact on pharmaceutical prices: *i)* pharmaco-economic assessment; *ii)* international benchmarking; and *iii)* therapeutic referencing.

Pharmaco-economic assessment

Since the introduction in Australia in 1993 of the systematic use of pharmaco-economic assessment in the reimbursement process, many OECD countries have begun to use pharmaco-economic assessment at different stages of pharmaceutical policies, including for reimbursement and pricing procedures (Drummond *et al.*, 1999; Dickson *et al.*, 2003).

One country's use of pharmaco-economic assessment should not be expected to have any direct implications for the price or availability of medicines outside the country. Moreover, pharmaco-economic studies are generally not considered to be transferable across countries because of differentials in countries' costs and epidemiological contexts. There is no reason to believe, therefore, that the proliferation of pharmaco-economic studies will result in more price convergence between countries. Nevertheless, some countries – notably some of the newest EU member states that lack the sophisticated infrastructure to undertake systematic pharmaco-economic studies on their own – use the

results of pharmaco-economic studies in other countries – mainly the EU15 states – in their pricing and reimbursement decisions (Gulásci, 2007).[1] This has been facilitated by the creation of a European network of health economic evaluation databases (EURONHEED). To the extent that pharmaco-economic studies are *generisable* and *transferable*,[2] the possibility of some influence on price convergence cannot be ruled out.

International benchmarking

Following the adoption of external price benchmarking in Canada in 1987 as part of its price regulation process, more than half of OECD countries have begun using international benchmarking for drug pricing and/or reimbursement policies, mainly to regulate the price of medicines at market entry (see Chapter 3).

When external benchmarking is used for *new* drugs without therapeutic alternatives, manufacturers will often launch innovative drugs in countries where they are free to set market entry prices *(e.g.,* the United States, Germany and the United Kingdom) or in countries where they are likely to obtain relatively high prices *(e.g.,* Switzerland). Such a predictable sequence, confirmed by further analysis, calls into question the effectiveness of external benchmarking as a means of limiting the price charged by a manufacturer, as discussed in Chapter 4. Furthermore, one of the predictable impacts of such a policy is some international harmonisation in pricing, in the direction of higher prices.

Evidence that this in fact occurs comes from experience in cross-jurisdictional price referencing within countries. For example, the requirement that the US Medicaid programme obtain the best possible price in the US market resulted in price increases for some private purchasers (CBO, 1996). The largest discounts that pharmaceutical manufacturers consented from the wholesale price fell from an average of more than 36% in 1991 to 19% in 1994, which CBO attributed to the Medicaid best-price provision.

Germany's prices are used as a benchmark in most countries that employ external price benchmarking. Stargardt and Schreyögg (2006) assessed the impact of a price change in Germany on EU15 countries that use external price benchmarking for setting reimbursement prices (Austria, Greece, Ireland, Italy, Luxembourg, the Netherlands and Portugal) The authors estimated[3] the hypothetical impact a one euro price reduction in Germany[4] would have on the prices of new and old[5] drugs in countries that use external benchmarking; for example, the direct effect of the reduction for a new drug in Germany on the price in Austria (which benchmarks Germany) would be a price reduction of EUR 0.09. Furthermore, there would be an additional reduction of EUR 0.15-0.19 due to an indirect effect (Austria benchmarks several countries which benchmark Germany).

Reference pricing in Germany may have cross-border impacts through the medium of external price benchmarking. For example, Switzerland explicitly introduced a policy of reviewing Swiss prices against those in comparator countries (the list of which includes Germany) two years after patent expiry in order to benefit from the price decreases occurring in Germany thanks to reference pricing (Paris and Docteur, 2007). Such actions may lead manufacturers to modify their strategies in terms of launch sequences. It also could contribute to reduced price differentiation across therapeutic groups in countries that rely on external price benchmarking, even if the countries themselves do not use reference pricing.

There is also evidence that international benchmarking could have a negative impact on the availability of drugs. Danzon *et al.* (2005) showed that countries with lower prices

have fewer drug launches and longer delays for launched products, even after controlling for GDP and expected volumes of sales, which the authors interpret as an impact of the potential for low prices to spill over into other markets or incite parallel trade (in Europe).

In conclusion, the net impact of reimbursement and pricing policies in one country on other countries' drug prices is not simple to assess. External benchmarking provides the greatest opportunity for price convergence and is the most direct way in which national drug prices policies stand to impact other countries' prices.

Globalisation, parallel and cross-border trade should lead to price convergence

Globalisation undoubtedly increases the cross-national impact of national policies. First, market harmonisation and the diffusion of information – notably on prices paid in other countries – make regulators, payers and purchasers more aware of what others are paying for particular products and more likely to urge pharmaceutical companies to consent to lower prices. Second, the threats parallel trade and cross-border trade pose for manufacturers are likely to play a role in shaping manufacturers' pricing and product launch strategies.

Market harmonisation and transparency in pricing prevent manufacturers from using price discrimination

In recent decades, the pharmaceutical sector has become increasingly concentrated as multinational firms have increased their dominance of the global market (see Chapter 1). For example, the share of global pharmaceutical sales accruing to the top ten manufacturers increased from 28% in 1987 (WHO, 2004) to 46% in 2006 (IMS Health, 2007). More than ever, the same products are distributed worldwide, facilitating both cross-country price comparisons and international trade.

The diffusion of information about prices paid by consumers in other countries clearly creates a hurdle to market segmentation and third-degree price discrimination by the pharmaceutical industry. NGOs and governments in less developed countries pressure pharmaceutical companies to obtain lower prices, sometimes using the threat of compulsory licensing to achieve their goals.[6] On the other hand, there is no international consensus that pharmaceutical prices should vary according to differences in the ability to pay. For example, the implementation of the Medicare Modernization Act in the United States in 2003 caused animated debates about the prices paid by Americans compared to those paid in other industrialised countries.

Though regulatory authorities in developed countries extensively use international benchmarking in pricing and reimbursement decisions, reliable price information is not always readily available. In some cases, regulators or purchasers agree with the pharmaceutical industry to disconnect the prices actually paid from listed prices by implementing confidential rebates on listed prices. However, recent initiatives tend to favour more information sharing, at least at the European level. For instance, the European Commission funded project on pricing and reimbursement policies (PPRI) provided officials responsible for pricing and reimbursement decisions with opportunities to share information informally, not only on pricing and reimbursement policies but also on price levels. Information available for developing countries is also an area of focus, as the World Health Organization and Health Action International have developed a tool allowing price comparisons for certain products between developing countries to encourage better-informed decision-making in those countries.[7]

Some analysts have argued that too much transparency in international pricing is likely to encourage legally permissible parallel trade as well as illegal cross-border trade and thus impair the availability and affordability of drugs in poor countries, as a consequence of the strategies used by originator manufacturers (Ridley, 2005).

Parallel and cross-border trade, if fully developed, would promote price convergence

Kanavos *et al.* (2004) extensively reviewed the literature on the expected costs and benefits of parallel trade in the pharmaceutical sector. To summarise, parallel trade is expected to increase competition and global welfare by limiting market segmentation and abusive price discrimination. In pharmaceutical markets, it is expected to lower prices in destination countries and to mitigate price differentials. In terms of welfare, losses in revenue for the price-discriminating monopolist are expected to be over-compensated by consumers' welfare gains in the destination country. However, the total welfare effect is not known since the balance between losses and gains is difficult to measure.

Parallel and cross-border trade do not represent large shares of the pharmaceutical market in OECD countries (see Chapter 1), although they can be substantial for some products, *e.g.* it has been reported that, in Sweden, AstraZeneca lost almost all domestic sales for some of its products to parallel imports (Arfwedson, 2004). The threat of parallel trade is likely to impact both policy making and manufacturers' strategies, as demonstrated in the following section.

Manufacturers use various strategies in order to maximise net revenues in the global market and counter spill-over effects of national policies

In the globalised pharmaceutical market, companies launching drugs on an international basis develop pricing strategies to maximise net revenues across all potential markets. When markets are not separable, the firm will need to develop a pricing strategy that takes into account not only local market conditions, but also how the price it attains in one market will affect prices and demand for parallel trade in other countries (see Box 5.1). The end result is that firms may establish higher prices in particular markets (*i.e.,* those with relatively high price elasticity of demand) than would be profit-maximising if markets were separable. Evidence that manufacturers use both strategic launch and discriminatory pricing to maximise worldwide revenues, as well as other strategies to prevent the specific risks of parallel trade and cross-border trade, is considered below.

Product launch strategies in a global market

Danzon and Epstein (2008) assessed the impact of prices in foreign countries on the probability of launch in a given country and found that the probability of launch in a given market is not affected by prior launch in Spain, Portugal or Greece (low-price countries).[8] The authors did find that prior launch in high-price countries (Germany, non-EU countries) did have a positive effect on the probability of launch, although this effect was also seen for two low-price countries (France and Italy). As reported earlier, Danzon *et al.* (2005) found that manufacturers delay launches, or do not launch at all, in low-price countries to minimise spill-over effects.

However, the main drawback of these studies is that they generally consider the time elapsed between first launch in the world and launch in each country, without being able to distinguish the result of company's launch strategies from results of regulatory processes.

Box 5.1. **Manufacturers strategies in a world of separable markets**[1]

If markets are separable, firms maximise net revenues by launching as promptly as possible in *all* markets and by charging higher prices in countries with relatively higher per capita incomes. When markets are not separable, firms' actions must take into account potential spill-over effects when setting or negotiating prices with major purchasers (public or private) or officials who decide on reimbursement (including price in some countries).

The maximum price (P^{max}) for a new product in a given country will be a function of three variables: 1) the prices of existing therapeutic competitors; 2) the difference in cost-offsets between the new product and existing therapeutic competitors; and 3) the cost-effectiveness of the new pharmaceutical (itself a function of the new drug's efficacy relative to competitors). All three of these variables are positively influenced by the level of the country's per capita income.

If a firm is able to set the price of its new product at the maximum price then it will extract all social surplus. Therefore, one would expect that this price will not hold as manufacturers interact with the government (acting as the decider on reimbursement and/or price setter) or purchaser(s) who will have a reservation (offer) price above which they will not pay for a new pharmaceutical.[2] Other things being equal, the offer price will be lower in those countries where there are budget concerns associated with high expected volume of sales or otherwise. This may result, in some cases, in government's preferring a delayed launch in the expectation of obtaining a lower price; or even no launch if there is no real possibility that the manufacturer will agree to the offer price.

The firm will have a reservation (ask) price below which it will not sell the new product. The ask price will be a function of the potential market size of the country, *i.e.* the country's per capita income and potential volume of sales. Furthermore, since markets are not separable, the ask price will be conditional upon the country's potential for spill-over effects. Under such circumstances, it may be preferable for the firm to delay launch in the country in the hope of negotiating a higher price if the lost revenue from launching later is less than the revenue loss that would occur in other countries due to spill-over effects. The firm may not launch at all if the revenue loss from spill-over effects exceeds the expected revenues accrued from launch.

1. The theoretical framework discussed in this text box is adopted from Danzon *et al.* (2005).
2. Danzon's framework does not specify reservation prices in the case where there are multiple purchasers within a single country (such as is the case in the United States where private purchasers operate alongside public purchasers), although the basic principle of a price above which the purchaser would reject should apply. In this case, the unique offer price for the country can be thought of as the aggregation of the offer prices of the various purchasers.

In some cases, strategic launches may result in the non-launch of certain drugs in some countries. For example, there is at least one recent example of a cancer drug that was not launched in Canada, where it would have been limited by regulation to a European price level (Paris and Docteur, 2006).[9] The manufacturer may have been concerned about either cross-border trade or political pressure to lower the price in the United States, where the price was approximately double the European level.

Pricing strategies in a global market

Manufacturers also resort to pricing strategies to avoid parallel and cross-border trade or to avert downward pressure on prices that could occur as a consequence of external

benchmarking. The most obvious strategy is to avoid significant price differentials between countries by establishing relatively uniform list prices and negotiating confidential rebates in countries with greater price sensitivity. For instance, pharmaceutical prices in Mexico are higher than one would expect, given relatively low income and low prices in Mexico generally; one possible explanation for this is that it may be partly due to the threat of cross-border trade with the United States (Moïse and Docteur, 2007). Manufacturers would rather forego some retail sales they could have had in Mexico than risk increasing the volume of US cross-border trade with Mexico (or increase pressure to allow parallel imports). In Canada, one pharmaceutical firm refused to lower the listed price of a drug which had been judged "excessive" by the Prescription Medicine Prices Review Board (PMPRB, 2006) by almost 60%. Instead, it signed an agreement with the PMPRB guaranteeing that no Canadian purchaser would pay more than the maximum price allowed by the PMPRB. Such a disconnection between listed and effective price clearly aims to render the price less attractive for potential US purchasers (Paris and Docteur, 2006).

One obvious method to avoid parallel trade would be for manufacturers to increase product prices in low-price countries, thus reducing the arbitrage possibilities of parallel traders. However, most countries strictly curtail the ability of manufacturers to increase pharmaceutical prices, effectively limiting manufacturers' room to manoeuvre in this regard.

Danzon and Epstein (2008) explored the impact of cross-national spillovers on launch prices and showed that the impact of prices set in other countries on launch prices in a given country varies according to the category of drugs. They provide evidence to show that launch prices of superior[10] products are positively related to the lowest price received in high-price countries,[11] but the launch prices of inferior products are positively related to the lowest price received in high-price EU countries only.

Other techniques used to avert parallel or cross-border trade

Launch and pricing strategies are not the only means used by pharmaceutical companies to protect their interests from the risk of parallel and cross-border trade. They have also tried to ration the supply of their products in potential source countries; develop superficially different products (involving minor variations such as package sizes, a technique known as product proliferation) for marketing across countries; and use litigation and lobbying to increase barriers to parallel trade.

Several pharmaceutical companies have used supply-chain management strategies in order to ration the supply of products in countries which could potentially be a source of parallel or cross-border trade. In low-priced EU countries, for example, companies furnish wholesalers supplying national markets with quantities necessary to cover national needs and refuse to furnish products to exporters. In Spain, some companies choose to differentiate prices according to their purchaser and to sell drugs at higher prices to exporters than to wholesalers serving the national market. Although these "dual-pricing" practices have been challenged by parallel traders in courts or by appeals to the national anti-trust authority, the final decision regarding their legality has yet to be decided.[12] In Canada, manufacturers also rationed the supply to wholesalers supplying pharmacies believed to be responsible for cross-border trade with the United States (Paris and Docteur, 2006).

Two other strategies aiming to bar parallel trade rely on so-called "product proliferation" strategies. Parallel traders have to obtain – and purchase – a licence from the

destination country's licensing authority to be authorised to import a product; the imported product must have the same composition, form and strength as an existing product in the destination country. Manufacturers can thus use product proliferation to either reduce parallel trade opportunities – by applying for marketing authorisation for different dosages and strengths in different countries – or to increase parallel traders' costs of repacking – by giving different brand names to identical products in different countries. Kyle (2007) provides some evidence of the actual use of these strategies in the European Union. She also demonstrates that products which were likely to be the source or target of parallel trade were more likely to be discontinued by the originator than other products.

A variation of product proliferation strategies has occurred in Canada, as the result of an effort to avoid the impact of external price benchmarking across payers within the country. When Quebec instituted a policy requiring that the province obtain the best price offered to other purchasers in Canada, some manufacturers developed subsidiaries to serve the market in British Colombia, where a tendering process had resulted in low prices for certain products (Paris and Docteur, 2006).

Manufacturers also undertook litigation arguing that repackaging was interfering with consumers' ability to identify the manufacturer. The European Court of Justice has detailed the conditions in which repackaging is possible without infringing on trademark law (Kyle, 2005).

Last but not least, the pharmaceutical industry lobbies vigorously against legislation authorising parallel trade. Debates on the opportunity to authorise parallel trade in the United States and in Switzerland have been ongoing since the end of the 1990s.

There is some evidence of market entry price convergence among OECD countries

In an efficient market, the "law of one price" (LOOP) holds that prices of identical goods converge to a single price for all; buyers seek lower prices while sellers seek higher prices with both sides arriving at a unique market price. In reality, inefficiencies prevent markets from achieving a single price.[13] Instead of converging to a single price (absolute version of the LOOP), prices in the global (or regional, in the case of Europe) pharmaceutical market may converge to fall within a band with an upper and lower limit, stabilising over time (relative version of the LOOP). This would be consistent with the concept of price dispersion where such a band would be considered a measure of trading frictions in the market for pharmaceuticals.

The question of price convergence most often relates to the convergence of market entry prices received by manufacturers. However, few studies specifically address this issue and most studies compare prices at a given date in different countries, independently from the date of launch. It is necessary to consider both types of studies, since prices can vary along the drug's life-cycle. For instance, in very competitive markets, high entry prices may be reduced after a few years by the entry of competitors while lower entry prices set by regulation may remain unchanged for a longer period of time (Lu and Comanor, 1998).

What is the evidence of price convergence?

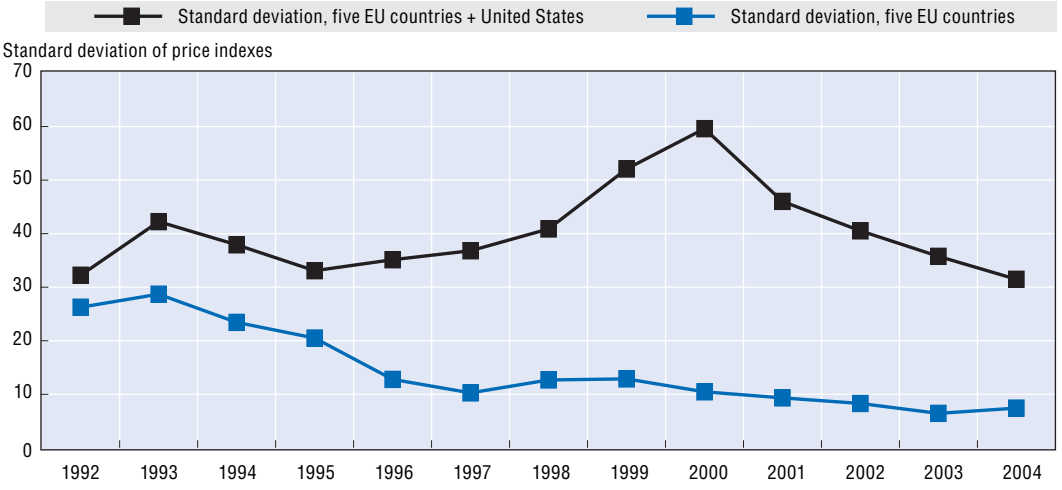
It would be inappropriate to use different studies containing price comparisons at different dates to draw definite conclusions about the trend in cross-country price dispersion, as price comparisons are very sensitive to methodology (Danzon and Chao,

2000). The only way to draw conclusions about such a trend is to either consider studies derived from longitudinal data or those that use the same methodology over time.

The UK Department of Health (DoH) presents such data in the reports on the Pharmaceutical Price Regulation Scheme (PPRS) it submits to Parliament on an almost yearly basis.[14] The DoH has computed price comparisons for several EU countries and the United States from 1992 to 2004, using the same methodology. The DoH selects the active ingredients of the top-selling brand name drugs in the United Kingdom and computes the average ex-manufacturer price per dose for each of these molecules in each country, using all available forms/strengths. Bilateral comparisons are undertaken by matching UK products to products in each of the comparator countries; in 2004 these products covered 27 to 48% of expenditures on brand name drugs in England. Multilateral comparisons are made for products available in all countries and therefore encompass a much smaller part of the market and a smaller set of countries. They are converted using current exchange rates and results are consequently influenced by changes in currency parities.

These comparisons indicate some price convergence for European countries but less so when the United States is included (Figure 5.1). However, these results must be

Figure 5.1. **Multilateral comparisons of UK pharmaceutical prices to comparator countries' prices, 1992-2004**



Note: Ex-manufacturer prices converted using current exchange-rates. The United Kingdom is the reference country. The other countries are France, Germany, Italy, the Netherlands, Spain and the United States.

Source: Department of Health, Pricing Regulation Scheme, *Reports to Parliament* (1997-2005)

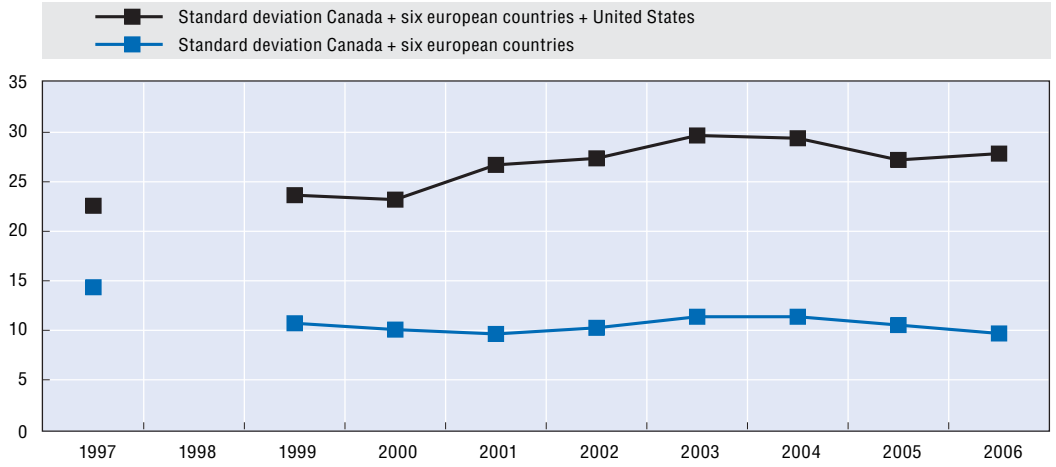
interpreted with caution, because of exchange rate fluctuations. For instance, the Spanish currency depreciated by 36% compared to the UK pound between 1992 and 2000 and then appreciated by 10% between 2001 and 2003. Nevertheless, prices in European countries have been converging since the early 1990s. US prices do not appear to converge with UK prices and the apparent convergence of the last period is partly due to changes in parity between the British pound and the US dollar (during the period the GBP/USD exchange rate rose from 0.57 in 1992 to 0.69 in 2001, before falling to 0.55 in 2004).

Annual reports from the Patented Medicines Prices Review Board (PMPRB) present bilateral comparisons of Canadian ex-factory prices of patented drugs with prices in the

seven countries referred to in the regulation defining excessive prices (France, Germany, Italy, Sweden, Switzerland, the United Kingdom and the United States). Bilateral comparisons are based on patented products available in Canada and in the comparator country. The average foreign-to-Canadian price ratio for each product is computed, weighted by sales in Canada. Prices are converted to Canadian dollars using current exchange rates.[15, 16]

In the 2005 report, foreign-to-Canadian price ratios are published for the years 1987, 1997 and 2004. The trend shows evidence of a convergence in patented drugs' prices. When US prices are excluded from the analysis, the standard deviation of price indexes decreased from 19.0 to 9.7 over the period (Figure 5.2). The gap between US prices and prices in other countries appears to have grown over the period, although results may be blurred by large changes in exchange rates during this period.

Figure 5.2. **Bilateral comparisons with Canada of ex-manufacturer prices for patented pharmaceuticals, 1997 and 1999-2004**



Note: Ex-manufacturer prices converted using current exchange–rates. Canada is the reference country. The other countries are France, Germany, Italy, Sweden, Switzerland, the United Kingdom and the United States. In 1987 the standard deviation was 27.9 for the seven countries and the United States and 19.0 when the United States was excluded.

Source: PMPRB (2006).

Though they do not apply to the same set of products – top-selling drugs independent of patent status for the UK study and all patented drugs for the PMPRB, although there may be some overlap – the two studies lead to similar conclusions: there is evidence of convergence between drug prices in the United Kingdom and those of comparator countries (similarly between Canada and comparator countries) when the United States is excluded from the sample of comparator countries.

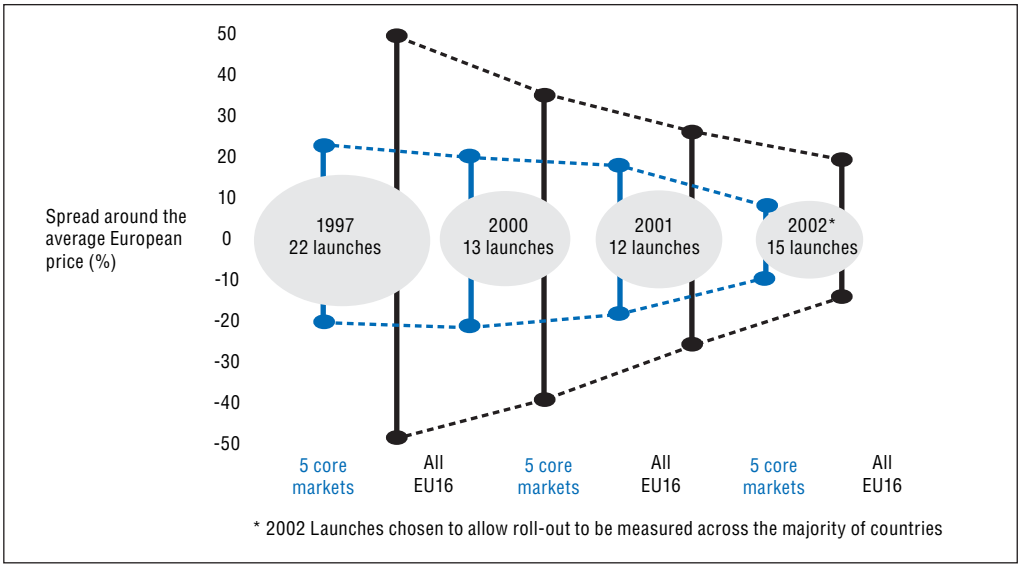
What about price convergence in the European market?

Within European Union countries, manufacturers have been encouraged to adopt a strategy to set or negotiate prices (see for instance, Kucher, 2000). This strategy, known as the "price corridor" strategy, consists in setting a reference price for several countries and a "margin" within which the prices of each country will be allowed to float. Companies are encouraged to set both a "soft upper limit" (price beyond which there is a risk of parallel trade) and a "hard lower limit" (the price that no subsidiary in any country is allowed to

undercut, because of expected adverse effects on both parallel trade and external referencing). This strategy is seen as intermediate between one of "decentralised pricing", *i.e.* setting a price for each country which maximizes the manufacturer's profit given the country's ability to pay, and one of "centralised pricing", *i.e.* setting a unique price for an entire zone to take into account the potential threat of parallel trade or international price referencing by national authorities.

To the extent that manufacturers have increasingly employed such strategies, convergence in ex-manufacturer prices in Europe would be expected. Indeed, there is some evidence of price convergence within Europe for newly launched products (Figure 5.3). According to IMS, average price differentials across the top five markets in Europe was less than 15%, which is generally considered as the threshold at which incentives for parallel trade are created (Cambridge Pharma Consulting, 2006).

Figure 5.3. **Price convergence of market entry prices in the EU countries**



Source: Cambridge Pharma Consultancy (2006).

In a recent study, Kyle *et al.* (2008) tested the hypothesis of drug price convergence in the European Union. The authors used a sample of products that included all prescription drugs of 36 therapeutic classes sold in retail outlets or in hospitals for which sales data in 30 countries from 1990 to 2004 were available. The sample contained 1 023 chemicals or chemical-combinations, 20% of which are still on-patent. The quantity-weighted average price across all presentations was computed for each chemical combination. The main outcome measures were mean price differentials and other means of dispersion within EU countries compared with within non-EU countries. The results suggest no substantial reduction in price dispersion within EU countries. There are several possible reasons why their results differ from the other results presented earlier, *e.g.* the other studies included fewer countries and compared prices for on-patent medicines only.

Not surprisingly, comparisons of wholesale and retail prices give a different picture. Considering a sample of eight innovative and reimbursed products, approved through the European Commission's Centralised Procedure, and used in outpatient care, Martikainen *et al.*

(2005) found high differentials in wholesale and retail prices across selected European countries (Belgium, Denmark, Finland, France, Ireland, the Netherlands, Spain, Sweden and the United Kingdom). The maximum difference between the highest and the lowest price was EUR 66 (81%) for the wholesale price, EUR 138 (124%) for the retail price without VAT, and EUR 214 (123%) for the retail price including VAT.

What do we know about price convergence for other types of goods?

To understand the extent to which price convergence in pharmaceutical markets is linked to price regulation rather than usual market characteristics and increased globalisation, we looked for studies analyzing worldwide price trends in other products in the same or similar markets. Four of the five studies examined were limited to the European Union. All give some evidence of price convergence, albeit with an increase in dispersion for some sub-periods. The first one analyses price dispersion across Europe for different categories of products for the 1990-2003 period (Engel and Rogers, 2004). The study shows a decline in price dispersion within the whole period, marked by a sharp decline in the early 1990s, followed by a slight increase between 1998 and 2003.[17] Price dispersion of non-tradable goods (services) has declined over the period but is still larger than the dispersion in prices of tradable goods, as would be expected given that trade competition can only directly impact on tradable goods. However, further results show that price dispersion within countries (between cities) has declined over the same period, which cannot be directly attributed to international trade. The second study examined price convergence for 115 tradable-tradable products groups[18] (as defined by Eurostat) for the EU15 countries over the period 1995-2002 (Allington *et al.*, 2005). They tested the hypothesis that the drive towards monetary union among countries in the Economic and Monetary Union (EMU) would lead to greater price convergence then among non-EMU countries. The results of their analyses confirm the hypothesis. In addition, the authors found evidence of convergence among all EU15 countries over this period.

The third study focuses on car markets in five European countries for the period 1970-2000. It highlighted some degree of price convergence but also the persistence of important price differentials between the cheapest and the most expensive country (Goldberg and Verboven, 2005). The authors explained the persistence of "market segmentation" by trade barriers enforced by national regulatory authorities or by the European Commission (type approval,[19] national registration,[20] and selective and exclusive distribution[21]). Moreover, the study period end date of 2000 coincides roughly with the introduction of the euro as a common currency for four of the five countries in their study (Belgium, France, Germany and Italy), the United Kingdom being the exception; a period during which greater convergence would be expected. A more recent study on the European car market focused on the period of 1995 to 2005 (Gil-Pareja and Sosvilla-Rivero, 2008). The authors found evidence of price convergence among the EU15 countries from 1999 onwards. Furthermore, prices converged even earlier for the 11 countries that adopted the euro.

The final study assessed the trend of price dispersion for 101 tradable goods in 108 cities from 70 countries of all the world's regions between 1990 and 2005 (Bergin and Glick, 2007). Price dispersion decreased by 19% over the whole period, but two different trends are observable. Price dispersion first decreased between 1990 and 1997, by 30% and has increased since then (by 11%). Looking for explanations for this reversal in trend, the authors concluded that the upwards trend in price dispersion is largely explained by the rise in oil prices (a proxy for transportation costs) during this period, as far as cities from

developing countries are involved in the estimate of price dispersion (between developing countries or between industrialised and developing countries), but that fluctuations in oil prices do not fully explain the increase in price dispersion for the set of industrialised countries.

In conclusion, public prices of tradable goods have been converging in the 1990's and slightly diverging since then. The price convergence is observable within the European Union but price differentials remain in markets with trade barriers (such as the car market). By contrast, studies analysing trends in ex-factory listed prices of pharmaceuticals suggest a uniform trend in price convergence over the period within a small sample of countries including several EU countries, Canada and Switzerland.

Conclusions

The pharmaceutical market was formerly characterised by pharmaceutical sellers with global operations and perspective facing national purchasers with policies that were quite insular and inward-looking. This has changed and we are moving toward a new market dynamic. Pricing to market is not possible in an era of free trade and external price referencing. This may well result in problems in the availability and affordability of some medicines in some countries, both within and particularly outside the OECD, unless policy makers change pricing and reimbursement policies to adapt to the new market dynamic.

Notes

1. To varying degrees, many of the new EU member states introduced requirements for demonstrated cost-effectiveness for pharmaceuticals. For example, the Slovak Republic's pricing policies require cost-effectiveness studies to be submitted for reimbursement application, although the ability of the state to properly evaluate these is lacking (Kálo *et al.*, 2008).
2. Boulenger *et al.* (2005) define generalisability as "the degree to which the results of an observation hold true in other settings" and transferability as "the data, methods and results of a given study are transferable if *a)* potential users can assess their applicability to their setting and *b)* they are applicable to that setting".
3. The model they used included a formula for each country that uses international benchmarking.
4. According to the authors, the price reduction could be the result of a deliberate strategy by a manufacturer or through mandatory price reductions for which there are precedents in Germany.
5. An old drug was defined as any drug that received marketing authorisation in Italy prior to 1997. This distinction was made because Italy has not used international benchmarking to determine reimbursement prices since 1997.
6. For example, in 2007 Thailand announced it was going to use compulsory licensing to obtain generic versions of on-patent drugs to treat HIV and heart disease (it had already done so in late 2006 for the antiretroviral drug Efavirenz produced by Merck). Merck and Abbott (maker of the HIV drug Kaletra) subsequently offered price reductions – 55% less in the case of Kaletra ("Thailand takes on drug industry, and may be winning", *International Herald Tribune*, 11 April 2007).
7. This tool allows users to compare prices paid for essential medicines in low-income countries: *www.haiweb.org/medicineprices/*.
8. They categorised the countries as follows: low-price EU countries (France, Italy, Spain, Portugal and Greece); high-price EU countries (Germany, the Netherlands, Sweden and the United Kingdom); large high-priced non-EU countries (Canada, Japan, Switzerland and the United States); middle income countries (Brazil and Mexico).
9. At least one Canadian province exceptionally decided to cover the costs of patients receiving the drug in US hospitals.
10. In this chapter, the four therapeutic classes are further divided in sub-classes where some drugs have a superior risk-benefit profile compared to other competitors in the class (*e.g.* in the anti-

ulcerants class, H2 antagonists and proton-pump inhibitors are considered to be, respectively, inferior and superior drugs).

11. See note 10.

12. In 2001, the European Commission (EC) ruled in a complaint by a group of parallel traders against the dual-pricing practices of Glaxo Wellcome (now GlaxoSmithKline, GSK), that GSK's practices infringed Article 81 which prohibits agreements which distort or restrict competition. On 27 September 2006 the European Court of First Instance overturned the EC's main finding – that the intent of GSK's scheme was to restrict competition – although it agreed with the EC that it had that effect. The case is on appeal to the European Court of Justice (De Souza, 2007).

13. When products are denominated in different currencies, the unique price that the "law of one price" would predict would take into account exchange rates (see for example Bruce and Purvis, 1985; Froot and Rogoff, 1985; Levich, 1985).

14. Reports have been submitted for the following years: 1997, 1999, 2000, 2001, 2002, 2003, 2004 and 2005.

15. The PMPRB uses a fully-lagged 36-month moving average of spot exchange rates for this purpose. This means that long-term exchange-rate movements will be fully reflected in the PMPRB's average price ratios only 36 months after they occur, while a short-term fluctuation will influence the ratios up to 36 months after it has been reversed.

16. These price comparisons are based on "publicly available ex-factory prices" obtained by manufacturers in foreign countries and provided to the PMPRB for the review of excessive price (PMPRB, 2002). This means that further confidential discounts or rebates consented by the manufacturers are not taken into account, which could lead to under- or over-estimates of differentials between Canadian and foreign prices.

17. The period when dispersion increased coincides with the period during which 11 European countries adopted the Euro as their official currency on 1 January 1999. This is contrary to what international trade theory would predict: the creation of a common currency reduces potential arbitrage opportunities and thus should lead to price convergence.

18. They also examined 46 non-tradable products groups, for which they found no evidence of convergence among EMU countries as compared to non-EMU countries.

19. Type approval: each country had a set of vehicle requirements, requiring costly modifications to imported vehicles. Though the EC produced a common list of "essential requirements" in the 1970's, most countries had kept co-existing national standards until this system became mandatory in 1993.

20. Quotas on imports from third countries (mainly Japanese cars) had existed at national levels and were replaced by a common import quota in 1993, accompanied by a system of "national registration" allowing some control at the national level. The common quota was banned in 2000.

21. During the 1970s and 1980s, suppliers instructed their dealers not to sell to unauthorised resellers and did not carry out after-sales services on imported cars. In 1985, an EC regulation institutionalised several of these practices as a block exemption to European competition rules. The system of selective and exclusive distribution was introduced, in which manufacturers can choose their dealers and prohibit them from selling to independent resellers (selectivity) and have the right to appoint only one authorised dealer in a geographically limited territory and prohibit dealers from active selling policies outside their assigned territory (exclusivity). These rules were somewhat relaxed in 1995 and more drastically liberalised in 2002.

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ISBN 978-92-64-04414-2
Pharmaceutical Pricing Policies in a Global Market

Glossary

Active ingredient: the chemical substance contained in a *pharmaceutical* which is responsible for its therapeutic effect. Some pharmaceuticals contain more than one active ingredient (combination product).

Active substance: see *active ingredient*.

Anatomic Therapeutic Chemical (ATC) classification system: in this WHO classification system *pharmaceuticals* are divided into different groups according to the organ or system on which they act and/or their chemical, pharmacological and therapeutic properties. The ATC Classification system is divided into five levels. ATC 4 level defines a *therapeutic group*, whereas ATC 5 level defines a single *active ingredient* or a fixed combination of active ingredients. A medicinal product can be given more than one ATC code if it is available in two or more strengths or formulations with clearly different therapeutic uses.

Bioequivalent pharmaceuticals: are considered to be bioequivalent if they contain the same molecule (in the same form, dosage type and strength) and are released into, and absorbed by, the body at the same rate. See *generic*.

Brand: the trade or marketing name**.** Brand names used to designate a particular *pharmaceutical* product may differ across countries.

Brand name: see *brand*.

Claw back: a scheme under which *third-party payers* recoup (part of the) *discounts/rebates* granted between various parties to *pharmaceutical* sales transactions, *e.g.* wholesalers and *pharmacists*.

Co-insurance: *cost sharing* in the form of a set proportion of the cost of a service or product.

Compound: see *active ingredient*.

Compulsory license: a license to use a patent, copyright, or other exclusive right that a government forces the holder to grant to others. Compulsory licensing allows generic *manufacturers* to make and sell *generic* versions of *on-patent pharmaceuticals* before patent expiry, in exchange for royalty payments to patent holders.

Co-payment: insured patients' contribution towards the cost of a medical service covered by the insurer. Can be expressed as a percentage of the total cost of the service (also known as co-insurance) or as a fixed amount.

Cost-effectiveness analysis: compares the cost per unit of outcome of alternative therapies with the aim of identifying the most efficient therapy.

Cost sharing: terms of coverage by a *third-party payer* specifying how the patient's share of the costs of health care will be calculated. Cost-sharing mechanisms include

co-payments (known as user fees in tax-financed coverage systems), *deductibles* and co-insurance.

Cross-border trade: the act of importing *pharmaceuticals* into one country (the "import" country) from another (the "export" country) for the purpose of personal consumption in the import country.

Cross-country referencing: see *external price referencing*.

Data exclusivity: protection of an originator pharmaceutical company's data preventing other parties from using these data for a commercial purpose. Concretely, this protection prevents *generic* product *manufacturers* from proceeding to clinical trials and health authorities from evaluating generic product *market authorisation* applications during this period. In the European Union, this period was harmonised to eight years in 2004.

Deductible: patient's share in the form of a fixed amount which must be paid for a service or of total cost incurred over a defined period by a covered person before a *third-party payer* covers all or a percentage of the rest of the cost.

Defined Daily Dose (DDD): the assumed average maintenance dose per day for a *pharmaceutical* used for its main indication in adults.

De-listing: dropping a *pharmaceutical* from a pharmaceutical list (*e.g. positive list*), often resulting in exclusion from *reimbursement*.

Direct-to-consumer advertising (DTCA): the advertising of aimed directly at the public.

Discount: a price reduction granted to specified purchasers of a *pharmaceutical*.

Dispensing fee: payment of the *pharmacist* for the service of dispensing a *pharmaceutical*.

Distributor: a *pharmaceutical* company that sells products it does not produce itself under a licence obtained from the *manufacturer*. Also refers to all actors in the pharmaceutical distribution chain, such as wholesalers or retailers.

Drug: see *pharmaceutical*.

Effectiveness: the extent to which a specific intervention, when used under ordinary circumstances, does what it is intended to do.

Efficacy: the extent to which an intervention produces a beneficial result under ideal conditions.

Efficiency: a measure of the extent to which health care resources are being used so as to maximisevalue for money.

Evergreening: strategies employed by an originator pharmaceutical company (see *original product*) to extend the patent life of an original product by applying for patents for various attributes of the product on a sequential, rather than simultaneous basis.

Ex-factory price: the *manufacturer's* posted price, in some countries also referred to as list price. Discounts or other incentives offered by *manufacturers* result in an effective price that is lower than the ex-factory price.

External price referencing: the practice of comparing *pharmaceutical* prices across countries. There are various methods applied and different country baskets used.

Formulary: list of products reimbursed or paid for by a *third-party payer*. See also *open formulary*.

Framework agreement: agreement between social health insurers, national health services or ministries with pharmaceutical *manufacturers* establishing guidelines for policies relating to *pharmaceuticals*. Framework agreements may include provisions relating to *pricing*, promotion, etc. They are used in countries such as France and Spain.

Free pricing: a policy under which *manufacturers* are free to set prices at the level or levels which the market will bear, free from government intervention.

Generic: bioequivalent version of an *original product*. There are branded and *unbranded generics* on the market. Branded generics also have a specific trade name, whereas unbranded generics use the *international non-proprietary name*.

Generic name: see International Non-proprietary Name.

Generic substitution: practice of *pharmacists* substituting a *generic* pharmaceutical, either a branded or *unbranded generic*, for a branded *pharmaceutical*.

Health technology assessment (HTA): the systematic evaluation of properties, effects, and/or impacts of health care technology. It may address the direct, intended consequences of technologies as well as their indirect, unintended consequences. Its main purpose is to inform technology-related policymaking in health care. HTA is conducted by interdisciplinary groups using explicit analytical frameworks drawing from a variety of methods.

Internal reference pricing: a method to compare prices of products in a country with the price of identical (ATC-5 level) or similar products (ATC-4 level). Often performed in the course of a *reference pricesystem*.

Internal price referencing: see *internal reference pricing*.

International Non-proprietary Name (INN): Identifies *pharmaceutical* substances and *active ingredients*. Each INN is a unique name that is globally recognised and is public property.

International price benchmarking: see *external price referencing*.

List price: see *ex-factory price*.

Manufacturer: a pharmaceutical company that produces *pharmaceuticals* and very often also searches for and develops new drugs. See also *distributor*.

Manufacturer price: see *ex-factory price*.

Market(ing) authorisation: a licence issued by a regulatory agency approving a pharmaceutical for market use based on a determination by authorities that the *pharmaceutical* meets the requirements of quality, safety and efficacy for human use in therapeutic treatment. Also known as a sanitary license.

Me-too: an *original product* that is approved subsequent to another product that is comparable or similar in composition and in therapeutic effect to the me-too product.

Medicinal product: see *pharmaceutical*.

Medicine: see *pharmaceutical*.

Negative list: list of *pharmaceuticals* not covered by a *third-party payer* (see also *positive list*).

New chemical entity (NCE): a drug approved for *marketing authorisation* with an *active ingredient* not present in any drug previously approved by a regulatory agency.

New molecular entity (NME): see *new chemical entity*.

Non-prescription medicine: see *over-the-counter pharmaceutical*.

Off-patent pharmaceutical: *original product* whose patent has expired.

Off-patent product: see *off-patent pharmaceutical*.

On-patent pharmaceutical: an *original product* whose patent is still in force.

Open formulary: a *pharmaceutical* benefit design that provides coverage for drugs on the *formulary* (if any) as well as other drugs not specifically listed.

Original preparation: see *original product*.

Original product: the first version of a *pharmaceutical*, developed and patented by an originator pharmaceutical company which receives exclusive rights to market the product for a specified period of time. An original product has one or more trade names used for marketing purposes, its so-called *brand* names.

Original substitution: see *generic substitution*.

Orphan drug: a *pharmaceutical* which only has a limited target population or which treats a rare disease thus limiting its commercial and financial potential.

Out-of-pocket payments: payments made by a health-care consumer that are not reimbursed by a *third-party payer*. This includes all forms of *co-payments*, co-insurance and deductibles as well as payments for non-covered services and informal payments for health-care services.

Over-the-counter pharmaceutical (OTC): *pharmaceuticals* which may be dispensed without a doctor's prescription being submitted and which are in some countries available via self-service in pharmacies and/or other retail outlets (*e.g.* drug stores, supermarkets).

Parallel import: see *parallel trade*.

Parallel trade: the act of importing *pharmaceuticals* into one country (the "import" country) from another (the "export" country) and placing them on the market outside the formal channels authorised by the product's *manufacturer* or licensed distributors.

Pharmaceutical: any *active ingredient* or a combination of two or more active ingredients in a product which may be administered to human beings or animals with a view to making a medical diagnosis or to restoring, correcting or modifying physiological functions in human beings or in animals is likewise considered a pharmaceutical.

Positive list: see *formulary*.

Pharmaceutical form: the pharmaceutical-technological form in which an *active substance* is made available. *Pharmaceuticals* may be administered in solid form (*e.g.* tablets, powders), in semi-liquid form (*e.g.* ointments, pastes), in liquid form (*e.g.* drops, injectables, infusions) or in gaseous form (inhalation).

Pharmaco-economics: see *pharmaco-economic evaluation*.

Pharmaco-economic evaluation: assessment of the relationship between costs and outcomes for a given product, and, possibly, comparisons to costs and outcomes of alternative treatments, pharmaceutical or not.

Pharmacist: a person trained and licensed to prepare and distribute medicines and to give information about them.

Pharmacy margin: the gross profit of pharmacies expressed as a percentage of the *retail price*.

Pharmacy mark-up: the gross profit of pharmacies expressed as a percentage of the *pharmacy purchasing price*.

Pharmacy purchasing price: the price charged by wholesalers to the retailers (usually pharmacies). It includes any *wholesale mark-up*.

Positive list: see *formulary*.

Preferred drug list (PDL): a term sometimes used as an alternative to *formulary*, but more precisely refers to a list of preferred medicines within selected drug classes on a formulary for which a patient's co-payment is lower and/or prior authorisation is not required.

Prescribing budget: the maximum amount of money to be spent on *pharmaceuticals* in a specific region or for an individual physician or a group of physicians, for a specified period of time, fixed ex-ante. Prescribing budgets are a cost-containment measure used by *third-party payers*.

Prescription Fee/Charge: a set amount to be paid by a patient for each item prescribed by a physician and dispensed at the expense of a *third-party payer*, *i.e.* a form of fixed *co-payment*.

Prescription-only-medicines (POM): *pharmaceuticals* that may be dispensed only on a doctor's prescription.

Price-volume agreement: the price of a pharmaceutical is agreed to between a *third-party payer* and a pharmaceutical *manufacturer* based on a forecasted volume of sales. If the actual sales volume exceeds the forecast, the price of the *pharmaceutical* may be revised downwards or the manufacturer asked to pay a *rebate*.

Pricing: the act of setting a price for a *pharmaceutical*.

Pricing policy: plan or course of actions used by government authorities, or *third-party payers,* to influence the amount paid by purchasers or the amount received by sellers (*e.g. free pricing*, regulated pricing – see *regulated price*).

Prior authorisation: formal agreement from a *third-party payer* for the *reimbursement* of a treatment, prior to the purchase of the treatment.

Procurement: the act of purchasing a *pharmaceutical* by a public authority.

Product life-cycle management: refers to a range of practices used by *manufacturers* of *originalproducts*, including but not limited to patent-related strategies, intended to limit or delay competition by *generics*.

Rebate: a partial refund following a purchase.

Reference price: a maximum *reimbursed amount* set by a *third-party payer* for a defined group of *pharmaceuticals* judged to be similar. Usually, one reference price is set for all products in a given *ATC*-4 and/or *ATC*-5 level group. See *reference price system*.

Reference price system: a scheme used by *third-party payers* to set a common *reimbursement price* for a defined group of *pharmaceuticals* judged to be similar. Patients buying a pharmaceutical that is part of a group for which a *reference price* has been set must pay the difference between that price and the *retail price* of the pharmaceutical in question, in addition to any fixed or percentage *co-payments*.

Registration: see *market(ing) authorisation*.

Reimbursement: the share of costs (for a service or a *pharmaceutical*) which the *third-party payer* pays. One-hundred per cent reimbursement means that the third-party payer accepts 100% of the costs for a *pharmaceutical* or healthcare service.

Reimbursed amount: the actual sum paid by a *third-party payer* to an insured person or seller of a *pharmaceutical*. May be equivalent to the full *reimbursement price* (as in Austria) or set as a percentage share of the reimbursement price (as in Denmark).

Reimbursement level: the share of total charges for a service or a *pharmaceutical* which the *third-party payer* pays. For example, an 80% *reimbursement level* means that the third-party payer assumes 80% of the costs for a pharmaceutical or healthcare service.

Reimbursement price: the basis for *reimbursement* of pharmaceuticals in a health care system, *i.e.* the maximum amount that a *third-party payer* will pay for a particular *pharmaceutical*. See *reimbursed amount*.

Retail price: the price charged by retail *pharmacists* or other retailers to the general public.

Switch: reclassification of the dispensing status of a *pharmaceutical* from *prescription-only* to *over-the-counter*.

Supplementary Protection Certificate (SPC): gives originators (see *original product*) a complementary period of market exclusivity beyond patent expiry to compensate for delays of marketing in the *pharmaceutical* sector. SPCs are available in EU countries. Similar protection exists in other countries.

Therapeutic group: *pharmaceuticals* from the same pharmacological class, such as statins.

Therapeutic referencing: see *internal reference pricing*.

Third-party payer: any entity, public or private, that pays or insures health or medical expenses on behalf of beneficiaries or recipients of the coverage.

Unbranded generic: see *generic*.

Value-added tax (VAT): a tax levied on the sale of goods and services (compulsory for EU Member States). The VAT rate for pharmaceuticals in the EU is often lower than the standard minimum VAT-rate of 15%.

Wholesale margin: gross profit of wholesalers, expressed as a percentage of the *pharmacy purchasing price*.

Wholesale mark-up: gross profit of wholesalers, expressed as a percentage of the *ex-factory price*.

Wholesale price: see pharmacy purchasing price.

Various sources were used to compile this glossary. The following sources were consulted most frequently or were used to extract a verbatim definition:

Academy Health, *Glossary of Terms Commonly Used in Health Care: 2004 edition*, *www.academyhealth.org/publications/glossary.pdf*.

International Network of Agencies for Health Technology Assessment, *INAHTA Health Technology Assessment (HTA) Glossary*, *www.inahta.org/HTA/Glossary/*.

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WHO Collaborating Centre for Drug Statistics Methodology, *www.whocc.no/atcddd/*.

List of Abbreviations

ADR	Adverse Drug Reactions
AMP	Average Manufacturer Price
ANAFAM	Asociación Nacional de Fabricantes de Medicamentos
ASMR	Amélioration du Service Médical Rendu
ATC	Anatomic Therapeutic Chemical Classification
BP	Best Price
BPAs	Blanket Purchase Agreements
CBO	Congressional Budget Office
CBS	Centraal Bureau voor de Statistiek (Netherlands)
CEPS	Economic Committee for Health Products
CME	Continuing Medical Education
CP	Centralised Procedure
DALY	Disability Adjusted Life Year
DDD	Defined Daily Dose
DoH	Department of Health
DP	Drugs Payment
DP	Decentralised Procedure
DRA	Deficit Reduction Act
DRG	Diagnostic-Related Group
DTC	Drug and Therapeutic Committees
DTCA	Direct-to-Consumer Advertising
DTI	Department of Trade and Industry
EEA	European Economic Area
EFPIA	European Federation of Pharmaceutical Industry Associations
EGA	European Generics Manufacturers Association
EMEA	European Medicines Evaluation Agency
EPC	European Patent Convention Treaty
EPO	European Patent Office
EU	European Union
FDA	Food and Drug Administration
FSS	Federal Supply Schedule
FTC	Federal Trade Commission
GAO	General Accounting Office
GDP	Gross Domestic Product
GP	General Practitioner
HD	Health Data
IOM	Institute of Medicine
IPR	Intellectual Property Rights

PHARMACEUTICAL PRICING POLICIES IN A GLOBAL MARKET – ISBN 978-92-64-04414-2 – © OECD 2008

LFN	Sweden's Pharmaceutical Pricing Agency
LOOP	Law of One Price
LTI	Long Term Illness
MAGR	Mean Annual Growth Rate
MCC	Marginal Cost of Capital
MPA	Medical Products Agency
MRP	Mutual Recognition Procedure
MRR	Marginal Rate of Return
NAS	New Active Substances
NCE	New Chemical Entities
NCU	National Currency Unit
NHS	National Health Services
NICE	National Institute of Clinical Excellence
NME	New Molecular Entities
ÖBIG	Austrian Health Institute
OOP	Out-of-pocket
OTC	Over-the-counter (non-prescription) drugs
PBAC	Pharmaceutical Benefits Advisory Committee
PBM	Pharmaceutical Benefits Management
PDL	Preferred Drug List
PDP	Prescription Drug Plan
PICTF	Pharmaceutical Industry and Competitiveness Task Force
PMPRB	Prescription Medicine Prices Review Board
POM	Prescription-only medicine
PPP	Purchasing Power Parity
PPRI	Pharmaceutical Pricing and Reimbursement Information
PPRS	Pharmaceutical Price Regulation Scheme
R&D	Research and Development
RBP	Rémunération basée sur les prestations
ROI	Return on Investment
SKK	Slovak koruna
SPC	Supplementary Protection Certificate
TRIPS	Trade-Related Aspects of Property Rights
USC	Uniform System of Classification
USP	US Phamacopeia
VA	Veterans Affairs
VAT	Value Added Tax
VFA	Verband Forschender Arzneimittelhersteller e.V.
VHA	Veterans Health Administration
VISN	Veteran Integrated Service Network

Table of Contents