Introduction

In the course of some recent policy discussions about External Reference Pricing (ERP) two contrasting lines of thought have been advanced with regard to transparency or confidentiality of pricing information.

One influential line of argument, put forward for example in reports for the WHO, is that fuller and more accurate information about prices should be shared between health authorities, and that manufacturers and traders should also provide full information.\(^1\) This would allow comparisons to be made more accurately, and so increase any benefits currently being obtained from ERP. The contrary argument, put forward for example by Professor Patricia Danzon,\(^2\) and supported by an earlier Europe Economics report on ERP, is that ERP is damaging to the prospects of affordable access to medicines, and that this damage would be increased if lower income Member States in particular were to provide more information about the prices they pay.\(^3\) According to this argument, prices paid should be confidential, so as to allow manufacturers to sell at affordable prices in low-income countries without spoiling their markets elsewhere.

This paper will explore these arguments in greater detail, and look for examples from other sectors than patented medicines which may throw light on the issue. These show that increased transparency sometimes has good effects for consumers, taken as a whole, and sometimes bad effects. When some consumers gain and others lose there will be distributional effects. Policymakers need to analyse the particular features and circumstances of each market before being able to conclude whether increased or reduced transparency is preferable.

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\(^1\) “As a result, confidential discounts and rebates limit the opportunities for cost savings for countries that use external price referencing (see also the section on external price referencing) and refer to the list prices indicated in the national price databases. There is no evidence as to whether discounts and rebates have any effect on innovation” (WHO 2013 07 09 Priority Medicines for Europe and the World, Background Paper 8-3 on PnR, p43).

\(^2\) “To achieve appropriate and sustainable price differences will require either that higher income countries forego these practices of trying to “import” low prices from low-income countries or that such practices become less feasible. The most promising approach that would prevent both parallel trade and external referencing, is for payers and companies to negotiate contracts that include confidential rebates” (International Journal of Health Care Finance and Economics, 3, 183–205, 2003, Kluwer Academic Publishers. P201).

The Role of Price Information in Markets

Insofar as those buying and selling in markets are guided by their financial self-interest they will use information about the prices paid by others to try to make sure that they themselves secure the best deal possible. Any increase in information may alter the outcome of negotiations. For purchasers, increased awareness of low prices being agreed elsewhere might mean negotiating a lower price from their intended supplier, or switching to another supplier offering a lower price. On the other hand, sellers might try to insist on a higher price if transparency reveals that competitors are succeeding in charging more.

In markets in which there are relatively few suppliers price transparency may facilitate collusion. Even where there is no overt or conscious collusion, price transparency may lead to “tacit collusion”, with much the same result. Stigler (1964) identified price transparency as the crucial factor for stable collusion, showing that it is rational for a company to set/accept the cartel price instead of rejecting the cartel by undercutting the cartel price to increase market share.\(^4\)

In some cases prices function as an indicator of quality, providing another reason why suppliers might not want to be seen to be cheaper than competitors.

The result of increased transparency is ambiguous where prices are settled in negotiations between suppliers and purchasers each of which has a degree of negotiating or market power. In these cases, the outcome of the negotiations may be affected in either direction. Thus both theory and empirical studies show that transparency can lead to either or both price reductions and price increases.

It is however a racing certainty that one result of greater transparency will be greater price convergence, resulting from some combination of reductions of high prices and increases of low prices compared to what they would otherwise have been. Convergence will seldom reach the stage where prices are identical – there will be some differences in product specifications, or in the costs of distribution and sales, that mean some price differences remain. Also, in real markets, participants do not always obtain an ideal outcome from negotiations. Nevertheless, it is safe to assume that greater transparency will lead prices to be closer together than they would otherwise have been.

In any market, price reductions are most likely when the increase in transparency allows customers to shop around more efficiently, and competition prevents suppliers from increasing their prices. Price increases are more likely in markets where suppliers have some degree of market power. One example would be when there are relatively few suppliers, and the most profitable strategy for a low-cost supplier may well be to price up to the levels charged elsewhere.

In order to understand more clearly where price transparency is likely to be beneficial to consumers we distinguish two types of market. In one type, which we will call Type A, efficiency – meaning the outcomes that are best in the interests of consumers, balancing the long and the short run – is best served by prices tending to a similar level, sufficient to cover the costs of manufacture and distribution as revealed by competition between a reasonably large number of alternative competing suppliers. In the other type of market, Type B, efficiency (yielding the best interests of consumers) requires that prices differ according to the different valuations placed on the service or product by different consumers. In these markets, price

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differentiation allows supplies to be increased up to the point at which everyone who would benefit from the product or service can do so.

Type A

Type A markets are those in which there are numerous suppliers and no legal or artificial barriers to entry or to increased supplies from suppliers already active in the market. These conditions obviously do not apply to markets where economies of scale are such that only one supplier is needed, or to markets for patented products. In Type A markets, well-informed decisions by purchasers and suppliers mean that prices will tend to converge to a level sufficient to cover the production and distribution costs of the most efficient suppliers, including a normal rate of return. Inefficient suppliers will not be sufficiently profitable, and so will in time be competed out of business; the competitive process thus helping to improve overall efficiency to the ultimate benefit of all concerned.

It follows that in general the more pricing and other information is available to market participants, the more efficiently Type A markets will work.

For these reasons, policymakers and competition authorities wishing to promote efficient Type A markets will normally try to increase the amount of information available to market participants, and to ensure that the information provided is not misleading. There are numerous policy interventions on these lines. Policymakers expect transparency to lead prices to converge to lower, more efficient levels.

Type B

As explained in detail in our first report, patented pharmaceuticals are an example of another type of market, Type B, in which it would be inefficient — some would say, plain wrong — to charge all customers the same or similar prices.

Type B markets include markets in which fixed costs of supply such as research and development leading to a patentable new product are high, while the costs of manufacture and distribution are low, so that if prices covering only such costs were charged the investments would not be profitable and would not take place; even though they might well be of great social value. Alternatively, if prices included a return on research and development and were the same to all customers, then many sales would be lost, despite the fact that the value of the product to low-income patients far exceeds the marginal costs involved in supplying them.

It is a fundamental principle of EU competition policy that mutually beneficial trades between willing suppliers and customers should not be prevented without good reason, yet this is the result of the current regulations and practices that encourage prices for patented products to converge.

In Type B markets, as explained in our first report, efficient pricing requires that different customers are charged different amounts for essentially the same service or products, according to their different valuations of the product or service. In this way, customers willing and able to pay enough to cover

5 Examples include the moves by the EU financial sector regulators to require increased transparency in many financial markets (MIFID 2) and by the UK energy and telecommunications regulators to make clearer, more easily comparable, pricing information available to consumers (see Annex). In healthcare, there are current proposals by the UK Competition and Markets Authority (CMA) that suppliers of private healthcare in the UK should be obliged to publish details of treatments performed and outcomes, in order to increase the effectiveness of competition in the sector. See CMA Private healthcare market investigation: Final report 2 April 2014 CMA 25.

6 The essential role of patents is to provide an incentive for private sector businesses to invest research and development effort into finding new products or services that a) will be of great value to consumers but b) could be easily copied by free-riding imitators if this were not prevented by law. Without patents, there would be far too little incentive to invest in innovative products and services. These economic facts provide the basis for the patent system which is applied throughout the world’s developed economies.

7 Sometimes the characteristic of the product or service may be altered slightly, to assist the desired price differentiation between customers.
marginal costs will be supplied, and the fixed common costs will be recovered from those customers to whom the service or product is most valuable. Total revenues are increased, all from willing purchasers for whom the product is worth more than its price, so that the return to the investment reflects its overall value to society as a whole.

Examples of Type B markets include many transport systems and distribution networks, as well as patented products such as pharmaceuticals.

Pricing policies which reflect these principles and which are widely accepted by competition authorities and policymakers include:

- Lower charges for pensioners, students and people receiving social security benefits than for other people, for the same products or services. For example:
  - Rail fares.
  - Entrance to museums and galleries.
  - Prescription charges for pensioners (zero price in the UK).
- Lower track charges for freight trains than for passenger trains running over the same lines.
- Children’s’ prices in restaurants.
- Lower charges for last-minute customers for air flights, theatre tickets, etc.

In all such cases the low price is offered because it:

- benefits those qualifying, by ensuring access for consumers who would otherwise not have access to the products or services concerned;
- covers the marginal cost of supply and makes a contribution to paying for fixed overheads; and
- can be offered without reducing other prices.

Where lower prices are charged to defined groups those obtaining the cheaper products or services may well be prohibited from re-selling them. Thus students and old age pensioners are not allowed to sell their concessionary tickets to others; etc. Such arbitrage would defeat the purpose of the low prices, and prevent their being continued. In the USA, but not in Europe, re-sale of pharmaceuticals can largely be prevented.

The role of information in Type B markets is quite different from that in Type A markets. In Type B, there should ideally be no possibility of arbitrage, and if transparency nevertheless encourages prices to converge, as is likely, it would be harmful to the interests of those consumers least able or willing to pay high prices.

In the case of patented pharmaceuticals, affordable access would be reduced by increased transparency, both through its likely effects on price negotiations and through any increase in parallel trade.

To confirm: in Type B markets, price transparency is not a problem if lower prices do not “spill over” into parts of the market in which higher prices should be charged. However, in the case of patented pharmaceuticals ERP makes it more likely that rich countries will ask for the lower prices offered in low income countries; and to the extent that they are able to do so, this makes it impossible for the low income countries to obtain supplies at an affordable price. Thus ERP works against the public interest of affordable supplies of patented medicines being available to the poorer parts of the EU.

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8 The original exposition of the economic principles involved was by Ramsey, hence the term “Ramsey pricing” is used to describe efficient pricing based on these principles. See first report for more detailed explanations.

9 See Annex 2.

10 Moreover, if the justification for lower charges is not accepted, information about them may cause resentment among those paying more, to no useful purpose.
Conclusion

There is no safe presumption to be made whether, in general, increased or reduced transparency over prices would be in consumers’ best interests. In some markets increases in transparency would improve the competitive process, and encourage prices to converge to those of the most efficient suppliers (Type A). There are many examples of policy initiatives designed to have this effect. In other markets, price transparency would lead to higher prices for many consumers by preventing efficient price differentiation (Type B). Again, there are many markets in which policymakers recognise this fact.

The market for patented pharmaceuticals is a clear - and most important-example of a market in which price transparency such as provided through ERP is likely to be harmful to the interests of those patients whose healthcare systems can least afford to pay for medicines. The unintended effect of ERP is to reduce the availability of affordable supplies of patented medicines to the poorest parts of the EU.
Annex 1: Experience in Other Sectors

A number of studies have examined the practical effects of increases in transparency over prices. These confirm the analysis set out above by showing that increased transparency of pricing:

1. leads prices to converge; and
2. can cause prices to increase as well as to decrease.

The energy sector


"… German electricity markets experienced a reduction in price dispersion following the government’s requirement that operators of transmission networks publish their access charges … The operators with the lowest prices before the requirement had effect raised their rates, while those with high prices reduced them."

"…Both estimated models give the same interesting results: the publication of prices forced the expensive firms to lower their charges, and made it easier for cheap operators to increase their prices. Hence publication acts as a double-edged sword."

In the UK, the energy sector regulator, Ofgem, has developed a series of requirements for greater clarity from energy suppliers regarding the tariffs offered to domestic consumers.\footnote{The following document includes a list of all the relevant documentation to this topic: https://www.ofgem.gov.uk/sites/default/files/docs/decisions/the_retail_market_review_-_implementation_of_simpler_tariff_choices_and_clearer_information.pdf This briefing note provides a high level summary of some of the reforms: https://www.ofgem.gov.uk/ofgem-publications/85375/simplerclearererfairerfactsheet.pdf.} These are based on the view that many domestic customers found previous tariffs difficult to understand, so that the effectiveness of competition between suppliers was reduced.

The Danish concrete industry

Albæk et al (1997) found in an analysis of the Danish concrete industry that the antitrust act according to which transaction prices of individual concrete producers had to be gathered and published regularly led to two interesting results. First, following the initial publication average prices increased by 15–20 percent within less than a year. Second, the prices converged significantly across firms.\footnote{Albæk, S., Møllgaard, H.P. & Overgaard, P.B. (1997). “Government-Assisted Oligopoly Coordination? “A Concrete Case.” Journal of Industrial Economics. 45(4), 429–443.}

Financial markets

Following on from the EU Commission’s December 2010 consultation to reform the Markets in Financial Instruments Directive (MiFID), the Commission published its legislative proposals, which took the form of a
revised Directive (MiFID II) and a new Regulation (MiFIR), on 20 October 2011. Very broadly these proposals represent a comprehensive and profound set of reforms which will lead to a reshaping of the financial markets, the products and services that banks provide and the relationship between banks and their customers. The European Parliament endorsed MiFID II and MiFIR on 15 April 2014, and the Council of the European Union adopted the legislation on 13 May 2014. The MiFID II legislation was published in the Official Journal on 12 June 2014. Both MiFID II and MiFIR entered into force on 2 July 2014 (20 days after publication), and must generally apply within Member States by 3 January 2017.14 –

This 2014 revision of the EU Financial Market Directive (MiFID) extends the pre- and post-trade transparency regime for shares to cover depositary receipts, Exchange Traded Funds, certificates and other similar financial instruments traded on a Regulated Market or Multilateral Trading Facility.

There have been a number of studies — theoretical, empirical and experimental — of the impact of pre- and post-trade transparency on markets in various financial instruments. The results of this body of work are somewhat contradictory. Pre-trade price disclosure has been associated with improved informational efficiency (enhanced price formation) by Bloomfield and O’Hara (1999)15 and Boehmer, Saar and Yu (2005).16 On the other hand, Aitken et al (2006) show that the revelation of the limit-order book beyond the inter-dealer context (i.e. to the buy-side) has negative effects on market quality. Flood et al (2002) showed that whereas price efficiency is increased by post-trade transparency and reduced by pre-trade transparency, liquidity is improved by pre-trade transparency and reduced by post-trade transparency.17

In particular, the introduction of TRACE18 transaction reporting and the subsequent shift in the post-trade transparency of the US corporate bond market provide a unique experiment for assessing the impacts of transparency. Three seminal studies examined the impacts of the TRACE reporting system on the US corporate bond market shortly after it was initiated.19 The conclusions of the three studies are very similar, namely that bid/ask spreads decrease with trade size; increased transparency under TRACE significantly reduces transaction costs (spreads); increased transparency does not affect trading volume; increased transparency does not reduce liquidity; and additional transparency is likely to encourage the creation of more efficient market structures and innovative dealing strategies that can further reduce transactions costs.

Bessembinder et al also find the large dealer cost advantage and market shares previously documented in other studies (see Schultz 2001) is reduced post-TRACE, which may have implications for the competitiveness of the bond market.

It is therefore important to recognise that “transparency” can take different forms and have different effects (hence the need for considered policy design and careful interpretation of the available evidence from elsewhere) and the characteristics of the markets it is applied to also vary.

The evidence tends to agree that infrequently-traded instruments benefit from a degree of opacity.

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14 See more at: [http://www.linklaters.com/Insights/MiFIDII/Pages/MiFIDII.aspx#sthash.t9i3brea.dpuf](http://www.linklaters.com/Insights/MiFIDII/Pages/MiFIDII.aspx#sthash.t9i3brea.dpuf).
18 The Trade Reporting and Compliance Engine, introduced in 2006, offers real-time, public dissemination of transaction and price data for all publicly traded corporate bonds.
It is also important to consider other aspects of market micro-structure, such as the nature of the main market mechanism (e.g. continuous or call trading, trading rules, etc.). The number and nature of market participants is also relevant: for example understanding the role and importance of market-making dealers.²⁰

That spot trading is largely conducted on electronic exchanges is itself important: this tends to promote greater quantities of data, available more widely and accessibly than in other trading mechanisms.

Other studies of financial markets have also found that efficiency is increased by greater transparency.

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Healthcare in the USA

In June 2008 the US Congressional Budget Office published an Economic and Budget Issue Brief entitled “Increasing Transparency in the Pricing of Healthcare Services and Pharmaceuticals”. This discussed the likely effects of increasing transparency, taking into account the range of competitive circumstances and incentives in the US healthcare system and experience in some other sectors. Its conclusions were (with emphases added):

“More transparent prices would probably reduce the range of prices that providers agree with payers as the new information altered the balance of bargaining power.”

“The implications of increased price transparency on the average price of healthcare goods and services, total healthcare spending and the federal budget are ambiguous. The confluence of many factors – changes in individuals’ actions, the lack of incentive or feasibility for many individuals to change their behaviour in purchasing healthcare, the potential for less aggressive pricing in markets where providers are concentrated, and the reduced variations in prices –make it difficult to determine which forces would ultimately outweigh the others.”

In a section of a book “Health Care Policies” published in 2008 by Nova Science Publications, Austin and Gravelle report on the results of the Californian legislation passed in 2003 which required hospitals to be transparent about their charges. The researchers report that

“The California hospital price transparency initiative, according to analysis of available data, has had negligible or no observable effect on hospital prices.”

²⁰ A full list of variables can be seen at Box 3 of the IMF working paper “Measuring Liquidity in Financial Markets”.

Annex 1: Experience in Other Sectors
Other comment

Surveying a variety of literature on the effects of improved market transparency on competition in oligopolies, Møllgaard and Overgaard (2001) emphasise that improved transparency can increase firms’ scope for collusion and cause price increases, as it makes deviation from the price tacitly colluded in easier to detect and thus facilitates oligopolistic coordination.\footnote{Møllgaard, H P & Overgaard, P B (2003). “Market Transparency and Competition Policy.” In M Baldessarri & L Lambertini (eds.), Antitrust, Regulation, and Competition. Basingstoke et al (Palsgrave Macmillan), pp1–48.}
Annex 2: Control over Distribution of Medicines in the USA

This note describes whether manufacturers in the US are legally allowed to place restrictions on the amount that a drug can be sold for (or to whom it may be sold). They relate primarily to the physical transfer of drugs and so to arguments concerning parallel trade than to ERP. However, the willingness of the US authorities to prevent the re-sale of drugs is partly in recognition of the value to patients of price differentiation.

There are a series of overlapping legal regimes that govern the answer to the question how manufacturers are able to restrict resale of medicines...

First, there is a presumptive right to enter into contracts, including those that limit what a purchaser may do with a purchased item. As I mentioned, an easy example here is the contracts Monsanto uses when it sells seeds to farmers. Monsanto says on its website: “Growers who purchase our patented seeds sign a Monsanto Technology/Stewardship Agreement — an agreement that specifically addresses the obligations of both the grower and Monsanto and governs the use of the harvested crop. The agreement specifically states that the grower will not save or sell the seeds from their harvest for further planting, breeding or cultivation.” Thus, a contract that limits what a purchaser may do with a purchased item is not unusual and is generally enforceable.

Second, the Prescription Drug Marketing Act of 1987 (federal) was passed, in part, because of Congressional findings that “the bulk resale of below-wholesale-priced prescription drugs by health care entities for ultimate sale at retail helped to fuel the diversion market and was an unfair form of competition to wholesalers and retailers who had to pay otherwise prevailing market prices.” The Act prohibits “with certain exceptions, the sale, purchase, or trade of (or the offer to sell, purchase, or trade) prescription drugs that were purchased by hospitals or other health care entities, or donated or supplied at a reduced price to charities.” The Act also imposes certain requirements on states, who are the primary licensor and regulator of wholesale pharmaceutical distributors. The definition of “health care entities” does not include pharmacies.

Third, each state regulates wholesale distributors that operate in that state, including regulation of to whom a drug may be sold. California’s law is quite typical. It requires that wholesalers not “Purchase, trade, sell, warehouse, distribute, or transfer dangerous drugs or dangerous devices at wholesale with a person or entity that is not licensed with the board as a wholesaler, third-party logistics provider, or pharmacy.” (Dangerous drugs are defined to be equivalent to prescription drugs).

Source: Molly Thomas-Jensen, Change to Win