

Economic Effects of Price Controls (Maximum Price) on Medicines in Sri Lanka

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Abstract

Governments around the world implement price controls in healthcare with the intention of increasing consumer welfare, relative to charging a uniform price across all countries. The Sri Lankan government also has imposed price controls on medicines from time to time. For example, on 21 October 2016, Sri Lanka transformed the pricing of essential medicines, making drugs more affordable for patients. The Government issued a notice by Extraordinary Gazette setting a price ceiling for 48 essential medicines used to treat non communicable diseases (NCDs), such as diabetes, heart disease, high blood pressure, high cholesterol, and other common diseases (World Health Organization, n.d.). According to economic theories, when a price control (maximum price) is implemented on drugs it creates a shortage in the market. But being a necessity, medicines has not experienced any shortage. Hence, my aims of writing this extended essay are to find the reasons caused to continue the same market situation even after the maximum price and also to examine the economic effects of price controls (maximum price) in medicines in Sri Lanka. When we look at the global context, while OECD countries (Organization for Economic Co-operation and Development) apply a wide range of price regulations, ranging from product-to-product pricing to partial price freedom, the two countries Canada and Mexico adopt price ceilings (maximum price) for all patented drugs on the market (Narayan, 2007). To write this essay I am using secondary data collected through researches, articles and reports on the same topic and find different experience in different markets in the world and thereby to analyze those experiences with market situations in Sri Lanka. Further, I hope that my extended essay will be helpful for the policymakers in making suitable price regulation policies in the pharmaceutical sector in Sri Lanka.

Keywords : medicines ; price controls ; shortage ; maximum price

1. Introduction

High prices of medicines can make them unaffordable to the consumers, weaken equitable access to them, and also threaten the financial sustainability of public health systems in the world. Medicines are considered as inelastic goods because they have no close substitutes and also they are necessities but not luxuries. Therefore, if an individual needs a certain medication for an illness or disease he or she definitely has to buy it. Since the prices of many medicines in the world are on the rise and when the patients can not afford to buy them, the governments across the globe institute different forms of pharmaceutical price control policies from time to time with the motive of increasing the consumer welfare relative to charging a uniform price across all countries.

Governments can intervene effectively in the pharmaceutical market to ensure that medicines are sold at reasonable prices in the market which will benefit the consumers specially those who cannot afford to purchase them at higher prices. Sri Lanka has a market for drugs and pharma products due to the great demand for these items and the Sri Lankan government too has implemented various price control mechanisms on drugs. For instance, State pharmaceuticals Corporation of Sri Lanka (SPMC) distributes quality assured products at affordable prices to the public in Sri Lanka.

The Sri Lankan government also has imposed price controls on medicines from time to time. For example, On 21 October 2016, Sri Lanka transformed the pricing of essential medicines, making drugs more affordable for patients. The Government issued a notice by Extraordinary Gazette setting a price ceiling for 48 essential medicines used to treat non communicable diseases (NCDs), such as diabetes, heart disease, high blood pressure, high cholesterol, and other common diseases. According to this price formula essential medicines should be sold below a recommended maximum retail price at all times (World Health Organization, n.d.).

2. Objectives

- According to economic theories, when a price control (maximum price) is implemented on drugs it creates a shortage in the market. But medicines has not experienced any shortage. Hence, to find the reasons caused to continue the same market situation even after the maximum price is imposed on medicines is one objective.
- To examine the economic effects of maximum prices of medicines in Sri Lanka.

3. Literature Review

World Health Organization , Sri Lanka's Success: Ensuring Affordable Essential Medicines For All article, states that "The revised drug price formula introduced in 2016 ensures that essential medicines should be sold below a recommended maximum retail price at all times. Upon issuing the gazette notification, the Hon. Minister of Health, Nutrition and Indigenous Medicine, Dr Rajitha Senarathne said that the prices of certain drugs could be reduced up to 85 % as a result. The revised pricing policy is a major achievement in safeguarding patients' rights to access affordable medicine in Sri Lanka."

Anubrata Banerje (2018) in his research article, the side effects of drug price controls mentioned that "Price controls in healthcare have the noble intention of enhancing patient welfare. However, economic theory suggests that for a variety of reasons, they can generate unintended consequences, especially if the price regulation is not efficiently designed and there remain gaps in implementation and enforcement."

Most of the OECD countries with drug price controls employ multiple pricing tools. In Canada prices are monitored throughout the patent life of the product, and price increases are capped at the level of changes in the consumer price index in line with inflation. While the Canadian federal authorities set an upper limit on the price of a patented drug through the PMPRB, the provinces also set limits under provincial drug plans. While patented pharmaceuticals continue to be subject to price controls, the Mexican Government has gradually loosened the controls to give industry greater pricing flexibility. In 1991, Mexico adopted a "Program to Modernize the Pharmaceutical Industry" (PROMIF), which established a system of pharmaceutical price control guidelines. Australia's Medicare national health care system provides subsidized access to prescription medicines for Australian residents under the Pharmaceutical Benefit Scheme (PBS). The PBS aims to improve the health of the Australian people by providing universal and equitable access to necessary and life-saving medicines at an affordable price. China maintains national and provincial price controls on certain drugs, including those listed on the NRL, provincial formularies, monopoly drugs, and other special drugs (e.g. immunization, psychiatric products, birth control drugs, and

narcotics).The Indian government announced a new pharmaceutical policy in 2005, wherein it was proposed to bring an additional 354 drugs under a National List of Essential Medicines (NLEM) under price control. (Narayan , 2007). According to my point of view, many researches have done many studies on side effects of price controls of medicines in India, OECD countries, European countries , etc but none of them focused on Sri Lankan context. Therefore, in this study I focused on Economic Effects of Price Controls in Medicines in Sri Lanka.

4. Methodology

This study will be mainly based on secondary data drawn from newspaper articles and other related articles and reports. Both qualitative and quantitative research methods will be used for collecting data for this study. Further, some researches and paper articles on pharmaceutical price controlling are reviewed and experiences in other countries are compared with practical situations in Sri Lanka.

5. Theories and Concepts

When the equilibrium price is too high for the consumers, authorities may decide that their intervention is needed. Then the government will decide on a maximum price consumers will pay for the commodity. This is effective only when the ceiling price is set below the equilibrium price. The ceiling price is the highest price goods can be sold at, and any price above that is not allowed. However, this policy can have the following effects.

If price ceiling is set below the existing market price, the market undergoes problem of shortage. When price ceiling is set below the market price, producers will begin to slow or stop their production process causing less supply of commodity in the market. On the other hand, demand of the consumers for such commodity increases with the fall in price. And with this imbalance between supply and demand of the commodity, shortage is created in the market. It is clear from the given Figure 1 below.

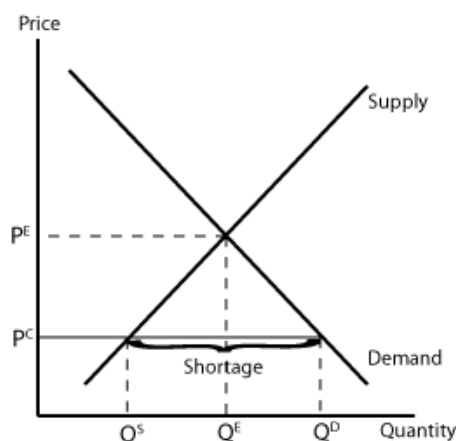


Fig. 1.

Rationing is the practice of controlling the distribution of a good or service in order to cope with scarcity.

Non-price rationing is the use of methods other than price controls that have the effect of limiting output.

Further, theory suggests that non price rationing method can result in:

- **Queuing:** is a solution to solve the rationing problem caused by price ceilings by “first –come, first –served” basis.
- **Quota:** is a fixed share of goods that a person is entitled to purchase.
- **Coupon method:** in this system the government distributes coupons that should be presented along with money to purchase a commodity.
- **Black market :** as the price ceiling criminalize transactions of the buyer and the seller it encourages people to break the law and go for illegal transactions.
- **Rationing with combining another good:** two or more goods can be rationed through the method of combination of rationing.
- **Rationing with bribery:** scarcity of goods relative to demand accompanied by policies of fixed ceiling prices creates opportunities for informal rationing through bribery.

Price Ceilings

Price ceilings are intended to benefit the consumer and set a maximum price for which the product may be sold. To be effective, the ceiling price must be below the market equilibrium. Some large metropolitan areas control the price that can be charged for apartment rent. The result is that more individuals want to rent apartments given the lower price, but apartment owners are not willing to supply as many apartments to the market (i.e., a lower quantity supplied). In many cases when price ceilings are implemented, black markets or illegal markets develop that facilitate trade at a price above the set government maximum price. This situation can be seen in Figure 2.

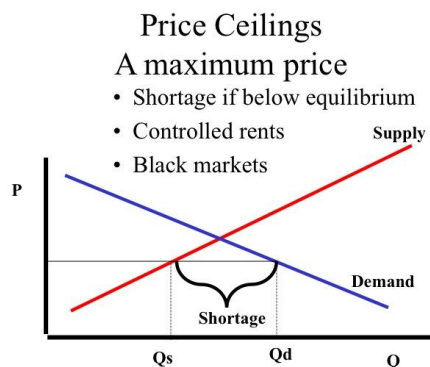


Fig. 2.

In a competitive market, economic surplus—which is the combined area of consumer and producer surplus—is maximized. Consumer and producer surplus are important concepts when discussing the effects of different government interventions in markets.

When there is an extreme shortage in the market, the government begins rationing distribution to restrict consumer demand. Consequently, customers are unable to get the quantity of items they require. Government rationing compels customers to endure lengthy lineups, which can be especially burdensome for the elderly, handicapped folks, and anyone unable to stand for prolonged durations.

A shortage of commodities also encourages black markets. Sellers begin trading goods to relatives and friends while charging others prices multiple times higher than the price ceiling. Additionally, when the

government sets a price ceiling, producers struggle to generate desirable profits. In response, many producers may resort to using lower-quality raw materials to maintain their revenue.

The consumer surplus is the difference between the highest price a consumer is willing to pay for a good or service and the actual market price of the good or service and it is one way to determine the welfare that consumers receive from their goods and services. Further the consumer surplus for a given quantity declines as it approaches the actual market price and quantity.

The producer surplus is the difference between the market price and the lowest price a producer would be willing to accept for a good or service. For producers, a surplus can be thought of as profit, because producers usually don't want to produce at a loss.

The economic surplus is the total of the consumer surplus and the producer surplus. In other words an economic surplus occurs if a producer sells an item for more than the lowest price he is willing to sell. If a producer can perfectly price-discriminate, it could theoretically capture the entire economic surplus. Perfect price discrimination would entail charging every single customer the maximum price he would be willing to pay for the product.

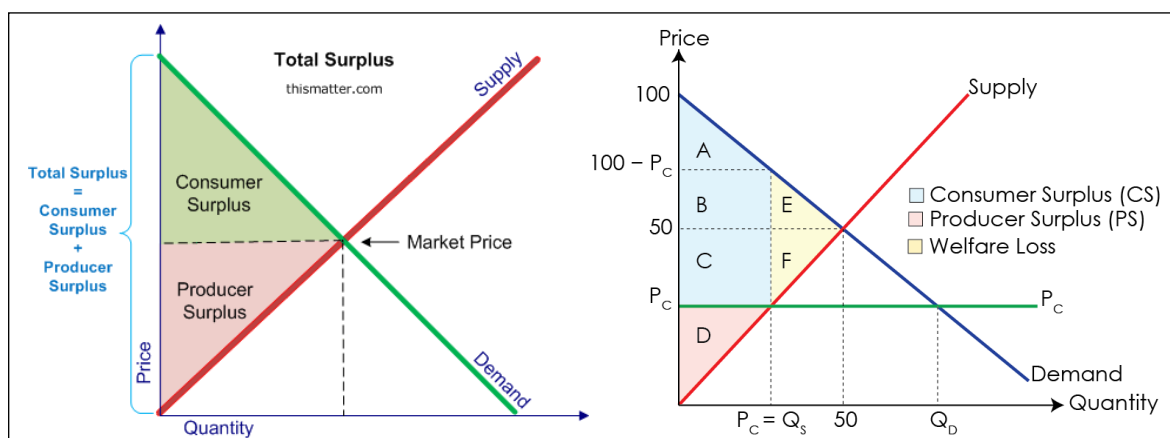


Fig. 3.

Fig. 4.

As far as medicines are concerned, the government imposes a price controls on medicines in order to protect the consumers against higher prices of medicines. This is done by providing the consumers with less purchasing power with an equal opportunity to buy medicine at an affordable rate.

However, a price control (maximum price) imposed on medicine can bring many problems to the consumer as well as the producer. Further, a price control can reduce the quality of the product and create black markets too.

When the price goes down of a particular medicine the demand for it goes up unprecedentedly while the suppliers become discouraged with lower prices, and they decrease their production due to less profitable trade which may create a black market situation. Moreover, when the suppliers have to supply goods at the imposed price, they try to make their production cost low which may result in supplying of low-quality medicines to the market.

6. Analysis and Discussion

6.1 The Quality of Health Against Good Policy in Different Nations.

A comprehensive price regulation mechanism must be effective, feasible and affordable in relation to the technical capacities and resources of the country, non discretionary, predictable and transparent. It also should concern on the unexpected, long-term effects on the country itself as well as on other countries.

The WHO Department of Essential Medicines and Health Products has developed some guidelines to assist national policy-makers and other stakeholders in identifying and implementing policies to manage pharmaceutical prices.

- **Guideline Recommendations and Key Principles**

Policy Intervention	Recommendations
Regulation of mark-ups in the pharmaceutical supply and distribution chain	Countries should consider using remuneration/mark-up regulation to provide incentives for supplying specific medicines (generics, low volume medicines, reimbursable medicines) or to protect specific patients or population groups (e.g., vulnerable groups, remote populations).
Tax exemptions/reductions for pharmaceutical products	Countries should consider exempting essential medicines from taxation. Countries should ensure any tax reductions or exemptions result in lowered prices to the patient/purchaser.
Use of external reference pricing	Countries should consider using external reference pricing as a method for negotiating or benchmarking the price of a medicine. Countries should consider using external reference pricing as part of an overall strategy, in combination with other methods, for setting the price of a medicine. In developing an external reference pricing system, countries should define transparent methods and processes to be used. Countries /payers should select comparator countries to use for ERP based on economic status, pharmaceutical pricing systems in place, the publication of actual versus negotiated or concealed prices, exact comparator products supplied, and similar burden of disease.

Policy Intervention	Recommendations
Promotion of use of generic medicines	Countries should enable the early market entry of generics through legislative and administrative measures that encourage early submission of regulatory applications, and allow for prompt and effective review. Countries should use multiple strategies to achieve low priced generics, depending on the system and market. These strategies may include: within-country reference pricing, tendering, and/or lower co-payments. In order to maximize uptake of generics, countries should implement (and enforce as appropriate) a mix of policies and strategies, including: ○ Legislation to allow generic substitution by dispensers; ○ Legislative structure and incentives for prescribers to prescribe by international non proprietary name; ○ Dispensing fees that encourage use of low price generics; ○ Regressive margins and incentives for dispensers; and ○ Consumer and professional education regarding quality and price of generics.

Table 1.

6.2 The Economic Benefits to Countries by Adopting Policies on Pharmaceuticals – International Experience.

A recent study on government pharmaceutical pricing strategies in the Asia-Pacific region, conducted by Naina R. Verghese, Jon Barrenetxea, Yukti Bhargava, Sagun Agrawal, and Eric Andrew Finkelstein, describes how different pricing strategies for pharmaceuticals can benefit countries economically.

The study states that the Internal Reference Pricing (IRP) strategy can reduce price variability within a drug class, push prices down to the least expensive medicine, and exert downward pressure on the prices of therapeutic substitutes, even when they are not subject to referencing.

External Reference Pricing (ERP) helps maintain price stability across countries.

The Price Maintenance Premium (PMP) aims to promote innovation and increase access, partly by encouraging manufacturers to launch products quickly. Evidence suggests that Japan, the sole implementer of PMP, may have benefited in this respect before its 2018 reform. The percentage of new drug applications filed with a lag of less than one year increased from 18% (2007–2011, pre-PMP

implementation) to 71% (2015–2017, post-PMP implementation).

Special Pricing Agreements (SPAs) help ensure the supply of medicines for a specified period at an agreed price. They benefit governments by reducing costs and manufacturers by facilitating the introduction of new medicines. Additionally, since the effective price paid by the government is typically undisclosed, manufacturers are protected from the knock-on effects of low prices under IRP or ERP.

The Cost-Plus Pricing strategy helps protect patient populations with rare diseases from manufacturers that may dominate the market and attempt to charge monopoly prices.

6.3 Different Pharmaceutical Policies Adopted by Sri Lanka and Their Consequences

The objectives of the Sri Lankan National Medicinal Drug Policy (2005) are:

1. To ensure the availability and affordability of efficacious, safe and good quality medicines relevant to the health care needs of the people in a sustainable and equitable manner.
2. To promote the rational use of medicines by healthcare professionals and consumers.
3. To promote local manufacture of Essential Medicines.

As far as the history of Sri Lankan drug policy is concerned, it had a partly written Drug Policy from the 1960s. It was “written” as elements of a policy, beginning from selection of drugs for the government drug supply and the Ceylon Hospitals Formulary in early 1960s, the Bibile Wickremasinghe report in 1971, the Cosmetics Devices and Drugs Act (1980). However there was no comprehensive document.

There were attempts to develop a NMDP in 1991 & 1996; while the documents were accepted by the Ministry of Health, they did not reach the final step of cabinet approval. Hence no comprehensive document exists at present. The present effort building upon previous efforts brings together the elements of a National Medicinal Drug Policy (NMDP) in one document and has been developed based on WHO documents through discussion with all stakeholders.

Various medicine policies that may impact on drug use and are in place, found during the situational analysis, and as reported to WHO in the country pharmaceutical survey of 2010, are shown in Table 2:

- **Summary of Medicines Policies in Place to Promote Rational Use of Medicines**

Policy	Implementation status
National Medicines Policy (NMP)	Official document 2005 & implementation plan, but implementation not yet started
National Essential Medicines List (EML)	National List 2013-2014 used in public sector procurement
National Standard Treatment Guidelines (STGs)	No national STGs (although standard treatment guidelines have been produced by the Specialist Colleges and the SLMA)

National Formulary manual	National formulary published in 1994 but no longer available
National government unit dedicated to promoting rational use of medicines	No government unit dedicated to promoting rational use of medicines
Monitoring medicines use	Monitoring of drug consumption done centrally in terms of quantity & cost, but very little information available on actual prescribing
Drug and Therapeutic Committees (DTCs)	A national DTC coordinated by the MSD is established to oversee hospitals all of whom should have DTCs and submit reports on their activities to the national DTC, but few DTCs do more than discuss stock-outs.
National Drug Information Centre (DIC)	No national DIC but University of Colombo has a local unit
Generic Policies	No specific policies but generic substitution is practiced in the public sector, though not much in the private sector where doctors use stamps to prohibit generic substitution
Health insurance	No public health insurance for most of the population
Payment for medicines by patients	All medicines received by patients free of cost in the public sector.
Provider revenue from medicines	Revenue from medicines sales is never used to pay salaries in the public sector
Undergraduate training on pharmacology & prescribing	National EML and STGs are not part of the curricula, but training on prescribing and problem-based pharmacotherapy are included
CME training on pharmacology & prescribing	No non-commercially funded CME, but SMLA does run CME lectures
Public education on medicines use	No public education campaigns on medicines use done in the past 2 years
Pharmacovigilance	Done by the national centre for Pharmacovigilance contracted out to Colombo University
Regulation of drug promotion	Pre-approval for OTC drug adverts only but monitoring is very adhoc
National strategy to contain Antimicrobial Resistance	No national strategy on antimicrobial resistance
Over-the-counter availability of prescription-only medicines including antibiotics	Antibiotics and other prescription-only drugs frequently available over the-counter without prescription

Table 2.

The Ministry of Trade and industry together with the Sri Lanka Manufacturers Association and the Sri Lankan Standards Institute has agreed to local manufacturers setting drug prices based on a mark-up of

20% on manufacturing costs. The SPC presence in the private sector with its Rajya Osu Sala pharmacies has had a check on prices since the SPC has a focus on providing affordable medicines.

6.4 The Reasons for the Continuation of the Same Market Situation Even After the Imposition of a Maximum Price on Medicines in Sri Lanka

Although economic theories state that, when a price control (maximum price) is implemented on drugs it creates a shortage in the market, being a necessity, medicines has not experienced any shortage.

Since the medicines are inelastic in demand, a price ceiling will lower the supplier's profits since the decrease in price will cause a disproportionately smaller increase in demand. Thus, the lower prices will offset the increase in sales volume and suppliers will see profitability decrease.

6.5 The Economic Effects of Price Controls on Medicines in Sri Lanka

Price regulations may cause a black market to develop or black market pricing to appear, according to economic theories. However, the Consumer Affairs Authority and the Health Ministry of Sri Lanka have tight regulations on the pharmaceutical industry. Because of the strict regulation of the market by various government agencies, it is nearly hard to charge unlawful prices.

Additionally, it is a legal requirement for pharmaceutical companies to display the prices of their products, particularly under the conditions of price control. This ensures transparency and adherence to the government's pricing regulations.

The demand for healthcare in Sri Lanka is a derived demand, as healthcare professionals create the demand for medicines and treatments. Consumers, therefore, cannot independently decide what and how much to consume. This structure reinforces the need for a controlled market where prices are set to maintain accessibility for the population.

Despite the implementation of price controls for over four years, the Sri Lankan pharmaceutical market has not experienced any shortages. The continuous availability of medicines indicates that the price controls have not disrupted the supply of essential drugs.

Firms in Sri Lanka have adapted to the price controls by continuing to supply the same drugs, albeit with reduced supernormal profits or operating at normal profit levels. This shows that firms can remain operational even under maximum price conditions, suggesting that the price control policy has not led to significant negative impacts on the supply of medicines.

7. Conclusion

In conclusion, pharmaceutical pricing strategies are critical in determining access to essential medicines and healthcare outcomes. In Sri Lanka, for instance, the government's ability to control drug prices has helped maintain affordability for essential medicines, though challenges persist in balancing affordability with the economic health of the pharmaceutical industry. While price controls can be effective in the short run, they may also enable firms to continue operations, even if only earning

normal profits. If firms earn supernormal profits, price controls can be lifted, allowing firms to regain those profits while continuing to supply medicines.

Moreover, firms may continue to offer one brand under maximum price control, absorbing losses from other products they market, with the intent of earning supernormal profits again once the price controls are lifted. This dynamic shows that price controls can be a temporary, yet viable, solution.

However, the overall quality of research regarding pharmaceutical policy implementation, particularly in developing countries, remains lacking. More descriptive studies and high-quality research are essential to understanding which policies are most effective and how they should be executed. Governments should adopt a combination of pharmaceutical pricing policies tailored to their unique contexts and health systems.

Additionally, promoting the use of quality-assured generic medicines can improve access and affordability. Countries should collaborate to exchange information on policies, their impacts, and pharmaceutical prices, fostering a more informed approach to pricing and ensuring sustainable access to medicines. This study underscores that price control, when implemented thoughtfully, can avoid long-term economic distortions and maintain healthcare access in the long run.

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