



## **The Impact of the Inflation Crisis in Medication Pricing in Asean Countries: A Review**

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### **ABSTRACT**

Pharmaceutical products are one of the necessities and cornerstones of the world market, and the pharmaceutical industry is experiencing increased prices which is contributed by the high inflation rate. Inflation pertains to a consistent and slow escalation in retail and market rates of products, goods, and services. In the Philippines, the inflation rate increased by 9.3% in 2019, and the medical fees and services are expected to increase by 10.1%. This uncontrollable inflation rate may be unsustainable in the Philippine healthcare system in the long run. Medications such as insulin and other maintenance medications are expected to increase in price due to the high inflation rate and high cost of production. Major factors of increasing inflation rate are purchasing power of services and goods and demand-pull inflation. Increased inflation in the pharmaceutical industry has severe effects on the healthcare system: hospitals are struggling to set rates, the pharmaceutical market may crash and medications will not be accessible to people living in poverty. Among the ASEAN nations, the Philippine pharmaceutical market sits at 10.1% inflation rate, compared to other members with higher inflation rates such as Indonesia at 13.8%, Malaysia at 13.5%, and Vietnam at 12%. ASEAN countries have shown a negative feedback in inflation rates which is at the threshold level of 7.84%, while the average inflation rate of pharmaceutical inflation in all countries in Asia which averages at 10.7%. The Philippine government aims to reduce the inflation rate by adjusting the interest rates and money reserve requirements and enact a monetary policy by the Bangko Sentral ng Pilipinas. to lessen the consequences of inflation throughout the ASEAN nations, building a stronger commitment mechanism is needed.

Keywords: Inflation, Medicatio Pricing, Asean

### **1. Introduction**

In economic literature, pharmaceutical products are acknowledged as an important item; consequently, inflation in their pricing increases the household budget (1). Numerous academics have shown that the inflation dynamics of industrialized nations have undergone significant modifications (2). Pharmaceutical businesses are experiencing increased pricing pressure which can be alluded to by the rise of the high inflation rate (3). Inflation in terms of economics categorizes on how slow as well as consistent the rise in costs. Keys in measuring inflation are the presence of time and a continual increase in prices over time (4). Future uncertainties being part of the consequences of inflation, (5) cause economic agents to become more apprehensive relating to the pace with trajectory, they conserve spending as a result of the threat of inflation instead (6).

Inflation in Asia has topped out at 5.5% plus it is down and decreased by 5% from the top level (7). The cost of living nowadays is expensive, and economies in Asia have continuously experienced capital outflows, which raised the area's vulnerability to shifts in international economic circumstances (8). Philippines' Insurers stated that costs have increased by 9.3% in 2019, which is 3.8 more than the inflation price. In 2020, the Philippines' medical fees were anticipated to increase by an average of 10.1%, notably lesser than the regional average of 10.2% for Asia (9). Kew also adds that medical costs are predicted to increase six times ahead of inflation, 68% of this is due to Covid-19 related diagnostics, and treatments. Moreover, in a survey of eleven Asian economies, the Philippines' predicted medical trend rate for 2020 ranked fifth. The expected growth rate for Indonesia is the highest at 13.8%,

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Malaysia came in second with 13.5%, and third with Vietnam at 12% (10). It is stated that if this continues, the Philippines' healthcare system will be unsustainable in the long run, and even the healthcare benefits of practitioners in the hospitals would be affected (10).

The inflation rate may indicate the health and performance of an economy (11). This would mean that the savings, investment, and economy of the country will be greatly affected and so is the pharmaceutical industry (12). While considering the consequences on the rate of inflation on the healthcare industry, it's really important to note that medicinal products constitute a substantial component of the health sector (13). It could be said that factors such as an increase in services, a growing, and aging population, chronic illnesses, and inefficiency or lack and transparency greatly contribute to how inflation affects the healthcare system (14). With these factors, healthcare leaders have duly expected inflation to hurt the growth of the system (15).

The purpose of this research is to assess its rampant rise such as inflation and its impact into the system of the pharmaceutical industry. Through this in-depth analysis, the researchers aim to produce a more relevant summarization of topics that tackle the issues of inflation which can be adjunct to previous topics before it.

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## 2. Methodology

This journal review assessed the impact of the inflation crisis regarding medication pricing in ASEAN countries. The thorough assessment was done through the analysis and research of related topics, journal articles, and research. The utilized related literature were taken from published articles and journal reviews found on the following websites:

1. Google Scholar
2. National Library of Medicine
3. PubMed
4. ACP Journals
5. and other credible supplementing websites that showcased relevant ideologies about the topic.

Furthermore, each reference were evaluated based on the credibility of the topic, its author/s, its timeliness, and relevancy to the overall journal article.

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## 3. Results and Discussion

Author and Year	Title	Result
1. Parker, 2022	Main Causes of Inflation	Inflation is a continuous economic phenomenon wherein the prices and value of goods and services in the market continue to rise (16).
2. Bank, 2022	What is inflation?	Prices for necessities, goods, and services continue to spike and consistently change over time, this is due to the inflation that the world is bought currently experiencing, it occurs when a broad increase in everything that is needed to be (17).
3. Rogoff, 2003	Globalization and Global Disinflation	During the age of globalization, inflation played a significant impact in the real economy's growth. the sector was important. The clear distinction was therefore no longer applicable. The Country-Centric and The Globe-Centric were the two available in addition to the inflation dilemma (18).
4. GEP, 2022	Factors present in the inflation	Certain factors are known to contribute to this phenomenon such as production costs, price or raw materials, and the continuing supply chain constraints (19).

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| 5.  | Matthews, 2022         | What to know about the 6 main causes of inflation   | There are different major causes of inflation, which can affect the economy directly, the purchasing power or the price increase of services and goods. Demand-pull inflation takes place when the demand for products or services is higher than the stock or supply for these products and goods, which causes prices to skyrocket (20).   |
| 6.  | Feron et al., 2022     | How does inflation and its factors affect the overall health system?                                    | The issue of rising inflation has a severe effect on healthcare expenditures. Hospitals struggle to set rates because of the rising volatility (21).   |
| 7.  | GEP, 2022              | Inflation's Impact on the Pharmaceutical Industry   | Presence of inflation and its factors have become more appalling in the Pharmaceutical Industry (22).  |
| 8.  | Balfour, 2022          | Inflation/cost of goods major concerns for pharma manufacturing   | As the industry wants to continue providing the best available medicines, it has become more difficult to do so as the economic environment continues to push rampant inflation (23).  |
| 9.  | Feinmann, 2021         | <i>Covid-19</i> : Global vaccine production is a mess and shortages are down to more than just hoarding | Inflation creates bubbles for a certain market, which when popped - may contribute to crashing the market. The housing market is the most inflated market at 23%, while the health services are at 6%. Although there is a sizable difference between these two markets, it is still considered that if an entire market crashes, the market for health services and products may also skyrocket (24). |
| 10. | Urban, 2022            | Drug Prices for Many Medications Outpace Inflation  | The price of medication is rising faster than expected due to inflation, 1,200 prescription drugs increased by an average of 31.6% from last year's data (25).   |
| 11. | Miller, 2021           | Inflation, Other Factors, Drive Up Health Care Costs  | Compared to other medical products or services, prescription drug prices are still rising more quickly (26).   |
| 12. | Wells, 2022            | Prescription Drug Prices Rise Faster Than Any Medical Good or Service                                   | GoodRx Company has reported from its survey that drug prices have continued to increase by 35 percent since 2014, and additionally a 1.8% since the COVID-19 pandemic began (27).  |
| 13. | Feinmann, 2021         | <i>Covid-19</i> : global vaccine production is a mess and shortages are down to more than just hoarding | The inflation of medication costs can lead to an increased prevalence of disease associated with the prevention or treatment of a disease, due to the increased costs of medicine and supplements (24).  |
| 14. | Inskeep & Aubrey, 2022 | Insulin costs increased 600% over the last 20 years. States aim to curb the price                       | ome drugs such as Insulin were also affected, the price to produce insulin is expected to be lower compared to the selling price of the medication, which the inflated price is due to the increased demand for the medication (28).   |

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| 15. Fleron, 2022  | Transformative impact of inflation on the healthcare sector   McKinsey  | Healthcare supply spiked in late 2002 and labor cost per adjusted hospital grew about 25% during 2020-2022, pharmaceutical on the other hand grew about 21 percent from last year, Inflation caused a big toll in terms of price hikes on medical supplies compared to pre-pandemic projections (29).   |
| 16. Sharif <i>et al.</i> , 2018                                       | EBHPME Inflation and Financing of Commercial Insurance in the Field of Treatment  | In a study, it is said that due to inflation public hospitals are getting more expensive hence they can compete with private sector hospitals, This has increased the share of payment from the pocket of patients (30).  |
| 17. Oriel, 2022   | India's Poor Forced To Swallow The Bitter Pill As Medical Inflation Nibbles At Their Life Savings                                 | In India the medications and hospital fees were too much for the citizens in a survey, the citizens stated that medication alone is expensive and they can't anymore afford to go to a doctor's appointment. About a 7% increase in medical expenses due to inflation in India (31).  |
| 18. Thanh, 2015   | Threshold effects of inflation on growth in the ASEAN-5 countries: A Panel Smooth Transition Regression approach                  | ASEAN countries have received negative feedback on inflation and economic growth. According to the data, the rate has reached 7.84%, implying that inflation is threatening the economic growth of five ASEAN countries (32).   |
| 19. Kew, 2020   | Philippines' Healthcare Cost Inflation Projected to Hit 10.1% in 2020   Mercer Philippines  | Indonesia leads the Southeast Asian country with the highest projected healthcare and pharmaceutical inflation increase at 13.8% which is followed by Malaysia with 13.5% rate, and then Vietnam with a rate of 12% (9).  |
| 20. Kew, 2020   | In 2020 the project hit 10.1% in regards of Philippines' Healthcare   Mercer Philippines  | The Philippines sits at 10.1%, which is below the average of all countries in Asia which averages at 10.7%. The healthcare services and products inflation rose to 10.1% in the Philippines for the year 2020. This inflation rate increase leads to more expensive hospice-care services, healthcare services, and medication costs, which can affect the health of Filipinos living near or below poverty (10). |
| 21. Witter S, Bertone MP, Chirwa Y, Namakula J, So S, Wurie HR., 2016 | Evolution of policies on human resources for health: opportunities and constraints in four post-conflict and post-crisis settings | Most inflating or deflating models that operated during the past decade and that incorporated multinational entities, the SOA agreement in Cambodia was the most prominent. These concepts were more expensive and, as a result, had doubtful stability (33).   |
| 22. Sarkar, 2022  | The devastating health consequences of Sri Lanka's economic collapse  | In Sri Lanka it was announced that when their economy collapsed, the healthcare system was also deeply affected, hospitals are fully booked, Riots occurred in the streets and the government went into hiding when faced with the issue (34).  |

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| 23. Asmundson, 2022           | Supply and Demand: Why Markets Tick   | As aforementioned, inflation can also be greatly attributed to the demand-supply system wherein suppliers are willing to produce more as demands rise, resulting in a decrease in prices and vice versa (35).   |
| 24. Lambojon, et. al., 2020   | Supply and Demand: Why Markets Tick   | In a article review conducted on the pricing, availability and affordability of medication in the Philippines, the following data were garnered. It has been reported that the accessibility and availability of common maintenance medications, in both private and public sector, were generally low (36).  |
| 25. Batangan, et.al, 2009     | Philippines Pharmaceutical Situation 2009 WHO Household Survey on Medicines                           | In year 2009 a research was conducted that there are increase of medicines essentials. due to medications limitation of stocks it was said that the original prices increases with 30% original brands and 10% of the generic brands (37).  |
| 26. Li <i>et al.</i> , 2021   | Do Health Expenditures Converge Among ASEAN Countries?  | The currency in ASEAN countries, due to the increase in dollars health expenditures in public hospitals continue to rise thus, lead to affected healthcare facilities, supplies, and manpower (38).   |
| 27. Lena, 2018                | DOH cites advantages of generic medicines.  | This patent allows pharmaceutical companies and corporations to monopolize drug production and allows them to recover the invested money (39).  |
| 28. TGP, 2021                 | Generic vs Branded Medicine: Ano ang Pagkakaiba?  | After the patent expires, the drug can be reproduced under a generic brand name and sold to a lower price (40).   |
| 29. Dela Pena, 2022           | PH fight vs inequality measured, found wanting  | Health insurance and universal healthcare services have different coverages and more Filipinos are registered in the health insurance service provided by the government (41).  |
| 30. Kubo, 2011                | Vertical Integration and Market Entry in the Generic Pharmaceutical Industry                          | Active pharmaceutical ingredients used in the manufacturing and production of medicines and other pharmaceutical products are imported, according to industry experts and the Philippine Food and Drug Administration. The only materials that are sourced locally are sugar, packaging supplies such as capsules, which is used as an additive in the drug formulation. As a result, it's possible that fewer pharmaceuticals are developed and locally produced (42). |
| 31. Olopaade, 2021            | What is the difference between brand-name and generic drugs?  | Generic drugs are cheaper than branded drugs and may even cost as much as 85% less compared to the branded drugs (43).  |
| 32. Akca <i>et al.</i> , 2012 | Inflation and Corruption Relationship: Evidence from Panel Data in Developed and Developing Countries | Consequences from inflation rates include income equality which is in favor of the capital owners, a surge in economic uncertainty and volatility, and a decline in long-term expenditures. In addition, this exchange between inflation and welfare was viewed as a key economic consequence of inflation (44).  |

#### 4. Conclusion

Consumer prices rarely increase faster than expected, healthcare inflation and the situation today caused a big impact on the broader economy. Labor shortage in healthcare, demand of service, higher cost on medication all due to sudden increased of inflation (21). Inflation as we know it is already happening, it is up to the government's hands to act to mitigate and slow down the inflation rate that affects different markets, which may crash the economy. Inflation crisis may not be resolved in a short timeframe but requires a series of good decisions and a long-term plan for covering all the factors for resolving inflation (45).

The government in Vietnam, which officially relied on a planned economy, began to promote innovations and, most intriguing, an entrepreneurial mindset, which is fundamental to the capitalist economy itself, even as a market mechanism made its way into the heart of the country's economic growth (46). In the Philippines in order to combat the inflation crisis is to enact a monetary policy action by the Bangko Sentral ng Pilipinas, and adjust the interest rates and the money reserve requirements to be increased or decreased (47). As the ASEAN is mostly composed with countries of relatively smaller governmental dominance on economics, the main contributor to decrease the effects of inflation is to build stronger commitment mechanism (48). The current pace of the economy is continuously at a fast rate, as economic growth changes so does consumers' behaviors and needs (49). Consequently, the pharmaceutical industry and its market are growing steadily (50). It is important to for reviews such as this kind to hone awareness and knowledge for as to how the economic status and stability of a country greatly influences the growth of its healthcare system as well (51).

#### Conflict of Interest

No conflict of interest among authors

#### REFERENCES

1. Parker-Lue S, Santoro M, Koski G. The ethics and economics of pharmaceutical pricing. Annual review of pharmacology and toxicology [Internet]. 2015;55:191–206. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/25149920>
2. Chiew EW, Sek SK. Examining the Effects of Domestic versus Global Prices Uncertainty on Sectoral Price Inflation in Malaysia. MATEMATIKA. 2019 Dec 31;35(4):99–122.
3. Amiresmaili M, Emrani Z. Studying the impoverishing effects of procuring medicines: a national study. BMC International Health and Human Rights. 2019 Jul 31;19(1).
4. Safavi B, Nakhjavan B, Mirzazami S, Alizadeh M. EFFECT OF INFLATION UNCERTAINTY ON PRICE DISPERSION IN IRAN. Risk Governance and Control: Financial Markets & Institutions. 2018;8(1):24–35.
5. Bamanga MA, Musa U, Salihu A, Udoette US, Adejo VT, Edem ON, et al. Inflation and inflation uncertainty in Nigeria: A test of the Friedman's hypothesis. CBN Journal of Applied Statistics [Internet]. 2016 [cited 2022 Oct 31];07(1):147–69. Available from: <https://www.econstor.eu/handle/10419/144792>
6. Njindan B, Ho S-Y. M P R A Munich Personal RePEc Archive Inflation, Inflation Uncertainty, and Growth: Evidence from Ghana [Internet]. 2018 [cited 2022 Oct 31]. Available from: <https://core.ac.uk/download/pdf/211627296.pdf>
7. Bala S. Asia's inflation has peaked compared with major economies in other regions, Morgan Stanley says [Internet]. CNBC. 2022. Available from: <https://www.cnbc.com/2022/08/16/inflation-in-asia-has-peaked-morgan-stanley-says.html>
8. Srinivasan K. Asia's Economies Face Weakening Growth, Rising Inflation Pressures [Internet]. IMF. 2022. Available from: <https://www.imf.org/en/Blogs/Articles/2022/07/28/blog-07282022-apd-asias-economies-face-weakening-growth-rising-inflation-pressures>
9. Kew I. Philippines' Healthcare Cost Inflation Projected to Hit 10.1% in 2020 | Mercer Philippines [Internet]. www.asean.mercer.com. 2020. Available from: <https://www.asean.mercer.com/newsroom/philippines-healthcare-cost-inflation-mmb-study.html>
10. Kew. Philippines' Healthcare Cost Inflation Projected to Hit 10.1% in 2020 | Mercer Philippines [Internet]. www.asean.mercer.com. 2020. Available from: <https://www.asean.mercer.com/newsroom/philippines-healthcare-cost-inflation-mmb-study.html>
11. Radhakrishnan P. Commentary: Making middle income countries pay full price for drugs is a big mistake. BMJ. 2015 Jul 10;h3757.
12. Soleimani Movahed M, Rezapour A, Vahedi S, Abolghasem Gorji H, Bagherzadeh R, Nemati A, et al. The Impact of Inflation and Its Uncertainty on Pharmaceutical Prices: Evidence from Iran. Iranian Journal of Pharmaceutical Research : IJPR [Internet]. 2021;20(3):94–101. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8653671/>
13. Farrell S. Clinton's promise on treatment prices hits pharma shares. The Guardian [Internet]. 2015 Sep 22; Available from: <https://www.theguardian.com/us-news/2015/sep/22/hillary-clinton-promise-treatment-prices-hits-drug-companies-shares-daraprim>
14. Probasco J. Why Do Healthcare Costs Keep Rising? [Internet]. Investopedia. 2019. Available from: <https://www.investopedia.com/insurance/why-do-healthcare-costs-keep-rising/>
15. Fleron A. Transformative impact of inflation on the healthcare sector | McKinsey [Internet]. www.mckinsey.com. 2022. Available from: <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-gathering-storm-the-transformative-impact-of-inflation-on-the-healthcare-sector>

16. Parker H. Main Causes of Inflation [Internet]. MintLife Blog. 2022. Available from: <https://mint.intuit.com/blog/planning/causes-of-inflation/>
17. Bank EC. What is inflation? www.ecb.europa.eu [Internet]. 2022 Aug 22; Available from: [https://www.ecb.europa.eu/ecb/educational/explainers/tell-me-more/html/what\\_is\\_inflation.en.html](https://www.ecb.europa.eu/ecb/educational/explainers/tell-me-more/html/what_is_inflation.en.html)
18. Rogoff K. Globalization and Global Disinflation by Kenneth Rogoff, Economic Counselor and Director, Research Department, IMF [Internet]. IMF. 2003. Available from: <https://www.imf.org/en/News/Articles/2015/09/28/04/53/sp082903>
19. GEP. Inflation's Impact on the Pharmaceutical Industry | GEP [Internet]. www.gep.com. 2016 [cited 2022 Oct 30]. Available from: <https://www.gep.com/blog/mind/inflations-impact-pharmaceutical-industry#:~:text=Around%20the%20world%2C%20rising%20inflation>
20. II KLM. What to know about the 6 main causes of inflation [Internet]. Business Insider. 2022. Available from: <https://www.businessinsider.com/personal-finance/causes-of-inflation>
21. Fleron A, Krishna A, Singhal S. Transformative impact of inflation on the healthcare sector | McKinsey [Internet]. www.mckinsey.com. 2022. Available from: <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-gathering-storm-the-transformative-impact-of-inflation-on-the-healthcare-sector>
22. GEP. Inflation's Impact on the Pharmaceutical Industry | GEP [Internet]. www.gep.com. 2022. Available from: <https://www.gep.com/blog/mind/inflations-impact-pharmaceutical-industry#:~:text=Around%20the%20world%2C%20rising%20inflation>
23. Balfour H. Inflation/cost of goods major concerns for pharma manufacturing [Internet]. European Pharmaceutical Review. 2022 [cited 2022 Oct 30]. Available from: <https://www.europeanpharmaceuticalreview.com/news/172087/inflation-cost-of-goods-major-concerns-for-pharma-manufacturing/>
24. Feinmann J. Covid-19: global vaccine production is a mess and shortages are down to more than just hoarding. BMJ [Internet]. 2021 Oct 28;375(8312):n2375. Available from: <https://www.bmj.com/content/375/bmj.n2375>
25. Urban P. Drug Prices for Many Medications Outpace Inflation [Internet]. AARP. 2022 [cited 2022 Oct 30]. Available from: <https://www.aarp.org/health/drugs-supplements/info-2022/drug-prices-and-inflation.html#:~:text=List%20prices%20on%20more%20than>
26. Miller S. Inflation, Other Factors, Drive Up Health Care Costs [Internet]. SHRM. 2021 [cited 2022 Nov 1]. Available from: <https://www.shrm.org/resourcesandtools/hr-topics/benefits/pages/rising-inflation-will-affect-health-care-costs.aspx>
27. Wells A. Prescription Drug Prices Rise Faster Than Any Medical Good or Service [Internet]. GoodRx. 2022 [cited 2022 Nov 1]. Available from: <https://www.goodrx.com/healthcare-access/drug-cost-and-savings/prescription-drugs-rise-faster-than-medical-goods-or-services>
28. Inskeep & Aubrey. Insulin costs increased 600% over the last 20 years. States aim to curb the price. NPR.org [Internet]. 2022 [cited 2022 Oct 31]; Available from: <https://www.npr.org/2022/09/12/1122311443/insulin-costs-increased-600-over-the-last-20-years-states-aim-to-curb-the-price#>
29. Fleron. Transformative impact of inflation on the healthcare sector | McKinsey [Internet]. www.mckinsey.com. 2022. Available from: <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-gathering-storm-the-transformative-impact-of-inflation-on-the-healthcare-sector>
30. Sharif M, Hojabri R, Saidpour J, Langroudi H. EBHPME Inflation and Financing of Commercial Insurance in the Field of Treatment [Internet]. 2018 [cited 2022 Oct 28]. Available from: <http://jebhpme.ssu.ac.ir/article-1-165-en.pdf>
31. Oriel A. India's Poor Forced To Swallow The Bitter Pill As Medical Inflation Nibbles At Their Life Savings [Internet]. <https://www.outlookindia.com/>. 2022. Available from: <https://www.outlookindia.com/business/india-s-poor-forced-to-swallow-the-bitter-pill-as-medical-inflation-nibbles-at-their-life-savings-news-199526>
32. Thanh SD. Threshold effects of inflation on growth in the ASEAN-5 countries: A Panel Smooth Transition Regression approach. Journal of Economics, Finance and Administrative Science. 2015 Jun;20(38):41-8.
33. Witter S, Bertone MP, Chirwa Y, Namakula J, So S, Wurie HR. Evolution of policies on human resources for health: opportunities and constraints in four post-conflict and post-crisis settings. Conflict and Health. 2016 Dec;10(1).
34. Sarkar S. The devastating health consequences of Sri Lanka's economic collapse. BMJ. 2022 Jun 29;o1543.
35. Asmundson I. Supply and Demand: Why Markets Tick [Internet]. IMF. 2022 [cited 2022 Nov 1]. Available from: <https://www.imf.org/en/Publications/fandd/issues/Series/Back-to-Basics/Supply-and-Demand>
36. Lambojon K, Chang J, Saeed A, Hayat K, Li P, Jiang M, et al. Prices, Availability and Affordability of Medicines with Value-Added Tax Exemption: A Cross-Sectional Survey in the Philippines. International Journal of Environmental Research and Public Health [Internet]. 2020 Jul 1 [cited 2022 Nov 1];17(14). Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7400398/#B5-ijerph-17-05242>
37. Batangan D, Juban N. (PDF) Philippines Pharmaceutical Situation 2009 WHO Household Survey on Medicines [Internet]. ResearchGate. 2009 [cited 2022 Nov 1]. Available from: [https://www.researchgate.net/publication/268043176\\_Philippines\\_Pharmaceutical\\_Situation\\_2009\\_WHO\\_Household\\_Survey\\_on\\_Medicines](https://www.researchgate.net/publication/268043176_Philippines_Pharmaceutical_Situation_2009_WHO_Household_Survey_on_Medicines)
38. Li Z-Z, Liu G, Tao R, Lobont O-R. Do Health Expenditures Converge Among ASEAN Countries? Frontiers in Public Health. 2021 Sep 10;9.
39. Lena, P. DOH cites advantages of generic medicines [Internet]. www.pna.gov.ph. 2018 [cited 2022 Nov 1]. Available from: <https://www.pna.gov.ph/articles/1047471>

40. The Generics Pharmacy. Generic vs Branded Medicine: Ano ang Pagkakaiba? | The Generics Pharmacy [Internet]. Drugstore Philippines - The Generics Pharmacy. 2021 [cited 2022 Oct 31]. Available from: <https://tgp.com.ph/branded-vs-generic-drugs-philippines/>
41. Peña KD. PH fight vs inequality measured, found wanting [Internet]. INQUIRER.net. 2022 [cited 2022 Oct 31]. Available from: <https://newsinfo.inquirer.net/1679087/ph-fight-vs-inequality-measured-found-wanting>
42. Kubo K. Vertical Integration and Market Entry in the Generic Pharmaceutical Industry [Internet]. escholarship.org. 2011 [cited 2022 Oct 31]. Available from: <https://escholarship.org/uc/item/7cf889qd>
43. Olopaade J. Brand-name vs. generic drugs: Which is better? [Internet]. www.medicalnewstoday.com. 2021. Available from: <https://www.medicalnewstoday.com/articles/brand-and-generic-drugs>
44. Akca H, Yilmaz A, Karaca DrC. Inflation and Corruption Relationship: Evidence from Panel Data in Developed and Developing Countries. 2012.
45. Marrow A. Russia holds rates at 7.5%, cautions on inflationary effects of mobilisation. Reuters [Internet]. 2022 Oct 28 [cited 2022 Oct 31]; Available from: <https://www.reuters.com/markets/europe/russian-central-bank-holds-key-rate-75-noting-high-inflation-expectations-2022-10-28/>
46. Vuong TT, Semerák V, Vuong QH. The vietnamese economy at the crossroads. Southeast Asia and the ASEAN Economic Community. 2019;53(91-143):91-143.
47. Manuel P. Inflation hits over 3-year high in May at 5.4% [Internet]. 2022. Available from: <https://www.cnnphilippines.com/business/2022/6/7/inflation-May-2022.html>
48. Mishkin FS. Strategies for Controlling Inflation | Conference – 1997. www.rbagovau [Internet]. 1997 Jul 21;1(1). Available from: <https://www.rba.gov.au/publications/confs/1997/mishkin.html#:~:text=There%20are%20four%20basic%20strategies>
49. Kantar. Importance of research in an ever-changing economy [Internet]. www.kantar.com. 2022 [cited 2022 Oct 31]. Available from: <https://www.kantar.com/inspiration/inflation/importance-of-research-in-an-ever-changing-economy-pf>
50. Acumen Research and Consulting. Pharmaceutical Manufacturing Market Size Will Achieve USD 1,599.9 Billion by 2030 growing at 15.9% CAGR - Exclusive Report by Acumen Research and Consulting [Internet]. GlobeNewswire News Room. 2022 [cited 2022 Oct 31]. Available from: <https://www.globenewswire.com/en/news-release/2022/09/05/2509864/0/en/Pharmaceutical-Manufacturing-Market-Size-Will-Achieve-USD-1-599-9-Billion-by-2030-growing-at-15-9-CAGR-Exclusive-Report-by-Acumen-Research-and-Consulting.html>
51. Kern T. How Inflation Is Impacting Healthcare [Internet]. MarketScale. 2022 [cited 2022 Oct 31]. Available from: <https://marketscale.com/industries/healthcare/how-inflation-is-impacting-healthcare/>