



Private Sector Pharmaceutical Distribution and Retailing in Emerging Markets

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ACKNOWLEDGEMENTS

This publication is brought to you by IFC and Accenture with financial support from the Dutch Rijksdienst voor Ondernemend (RVO) agency through its Advisory Services Trust Fund at IFC. This publication was developed under the overall guidance of John Barham, Senior Strategy Officer; Sabine Hertveldt, Senior Policy Officer; Edward Hsu, Principal Investment Officer in Health and Education; Srividya Jagannathan, Global Lead for Life Sciences; and Rasmiya Masoud, Investment Officer in Health and Education. The research and analysis were conducted with assistance of the Accenture team, which included Robyn Harshaw (co-lead), Mimi Whitehouse (co-lead), Mwenya Kawesha, Kofi Osei, and Lekha Ragavendran, under the supervision of Roger Ford and Dan Baker. The group gratefully acknowledges comments from Andreas Seiter and Elena Sterlin and the expertise of Alicia Cabestany Preza, Philip Davis, Maeve Magner, Sergio Mazur , and Prem Tumkosit.

COVER PHOTO

  World Bank, A woman working in GK Pharmaceutical Company, Bangladesh.

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INTRODUCTION

Pharmaceutical usage is growing in emerging markets, primarily driven by three trends:

- 1.** Volume growth of inexpensive generic medicines used to treat chronic diseases such as diabetes, cancer, chronic obstructive pulmonary disease, heart disease and even HIV in a growing and aging population;
- 2.** Increased ability to pay for needed medicines through government programs, such as universal health coverage; and
- 3.** Rise of urban middle classes able to increase household spending on healthcare.



Photo © CEphoto, Uwe Aranas | Pharmacy in Chuanzhusi, China.

As this rising tide of medicines sweeps through emerging markets, there are challenges to sustaining growth at a level that will enable all to access medicines.

While *affordability* remains a concern, an often overlooked issue is the *availability* of medicines: the need to ensure that supply chains can reliably supply local shops so that quality, affordable medicine is on the shelf where and when it is needed. Today, many private sector pharmaceutical supply chains in emerging markets experience considerable inefficiencies. These supply chains can be described as complex networks of importers, wholesalers, distributors, sub-distributors, and an mass of retail outlets, where there is little visibility on what is being purchased and when. This results in stock-outs and enables substandard medicines to enter the supply chain.

In cases where supply chains do operate efficiently, private sector investment in pharmaceutical distribution and retailing can yield additional benefits to the consumer,

such as improved availability of medicines and assurance of quality, along with the potential for lower mark-ups along the supply chain as the number of intermediaries decreases. Technological innovation could be one of the fastest and most impactful ways of increasing supply chain efficiency, particularly in markets with profound transport infrastructure deficiencies. Digital innovations range in sophistication from text messaging systems that update stock levels, to “smart” vaccine fridges that automatically send stocking and temperature control reports.

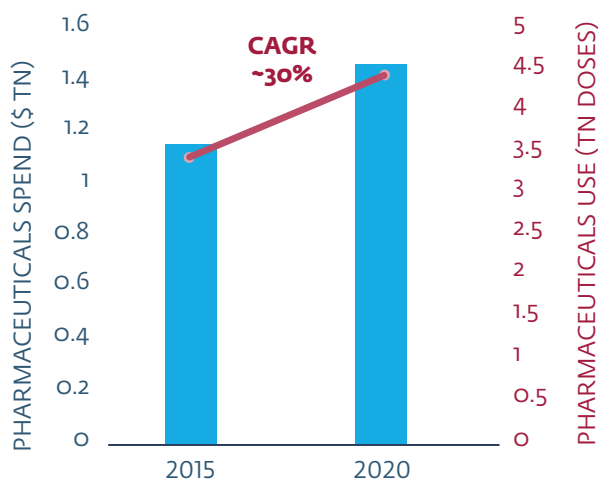


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MARKET SIZE AND DYNAMICS

Pharmaceutical demand¹ was valued at \$1.1 trillion worldwide in 2015, with 36 percent of that in emerging markets. This share is expected to grow in the near future, due primarily to a growing population increasingly afflicted with chronic disease (Figure 1).^{i, ii, iii}

FIGURE 1. GLOBAL PHARMACEUTICAL USE AND EXPENDITURE



The population in low- and middle-income countries, as defined by the World Bank, is projected to grow to 6.5 billion people in 2020 from 6.1 billion people in 2015. And by 2050, senior citizens (age 60 and over) will outnumber children (age 16 and younger) globally for the first time.^{iv,v} Furthermore, 80 percent of these senior citizens will live in emerging markets in 2050, up from 62 percent today.^{vi} Aging populations in a number of emerging markets, particularly in the middle income population within an individual country, as well as changing lifestyles, and the

chronic diseases – such as diabetes, cancer and hypertension – that often accompany these two trends will continue to drive pharmaceutical demand. For example, hypertension, or high-blood pressure, is estimated to affect 1.3 billion people worldwide. With daily, single-pill therapy for hypertension (e.g. a low-cost diuretic, such as thiazide, as recommended by the World Health Organization), treating everyone who needed medicine would have required an estimated 474 billion pills per year for hypertension alone.^{vii, viii}

Pharmaceutical demand is also facilitated by increased ability to pay either out of pocket due to rising middle class wealth or due to increased access to private health insurance and through programs such as universal health care (UHC) or donor-funded programs. Spending on health and pharmaceutical increases as households become wealthier.^{ix} Pharmaceuticals are a significant portion of healthcare expenditure in emerging markets, consuming up to 67 percent of the budget. Although resources have rapidly grown in the past 15 years, they are not infinite. UHC has been implemented in 60 countries, but efforts to expand and sustain coverage face headwinds as governments must cope with flat to declining budgets and rising health costs. Finally, the massive mobilization of multilateral donor funds – principally to tackle HIV, tuberculosis and malaria – is one of the global community’s finest accomplishments, having saved millions of lives by facilitating the purchase and distribution of medicines at a historic rate. But it is unclear if these donor funds are sufficient or sustainable enough to address the health challenges of the near future.

¹ Ex-manufacturer data. In addition, the global over-the-counter (OTC) market size is estimated at \$120 billion in 2015 with growth in emerging markets regions (Latin America, South Asia, China, and Central and Eastern Europe) outstripping OTC growth in more established regions (Japan, North America, and Western Europe.)

Pharmaceutical Distributor Market Size

The availability of medicines in developing countries is at an inflection point, and investment in the private sector can accelerate efficient distribution of medicines.

Pharmaceutical distributors account for the value of the products they are distributing as revenue and then debit the cost of goods sold; thus, the market is sized on the basis of the gross operating margin or through an analysis of profit pools. The private sector pharmaceutical supply chain market size is estimated to be \$1.1 trillion on a gross revenue basis, with a gross operating margin of \$103 billion in 2015. Therefore, gross operating margin reflects the actual value of the sector (Figure 2A),² ^{xi, xii} The emerging markets share of the global pharmaceutical distribution market is disproportionately large at 64 percent. This is particularly striking when compared to the relative regional breakdown of the overall global pharmaceutical market by revenue, where emerging markets are 36 percent of the total. This discrepancy can partly be explained by two factors:

1. Unusually low operating margins for pharmaceutical distributors in the US market due to overconcentration of the market in the largest three US distributors; ^{xiii}
2. Vertical and horizontal fragmentation of pharmaceutical distribution in emerging markets.

The emerging markets' disproportionate share of the pharmaceutical distribution profit pool is due to both high operating margins in those countries (e.g. cost of capital) and fragmentation of the supply chain.

Retail Pharmacy Market Size

The global private sector retail pharmacy market is estimated to be \$683 billion on a revenue basis, with \$280 billion of that in markets outside of the US, Europe and Japan. Using a profit pools analysis, the global private sector retail pharmacy market size is estimated to be \$68 billion worldwide ³ with \$28 billion of these

profits in markets outside of the US, Europe and Japan (Figure 2B).^{xiv, xvi, xvii} These retail pharmacy outlets range from multinational chains, such as Boots and Watsons to independent “mom and pop” retail outlets, providing a range of service levels from simply selling medicines during regular business hours to 24-hour outlets that sell a range of medicines and consumer goods. These stores have additional profit pools from the sale of non-medicines, such as perfume, cosmetics and other consumer goods. Patients can also receive their medicines through the dispensary or pharmacy associated with health clinics or hospitals; this is the dominant means of dispensing medicine in markets, such as China. This segment of the market is not included in the estimate of the global private sector retail pharmacy market size. ^{xviii}

Supply Chain Structure and Regulatory Environment

Developing countries can have as many as three parallel types of supply chains - public, private, and voluntary or NGO sector, whereas developed countries usually have one main type of supply chain that serves to distribute both publicly and privately funded medicines [Figure 3]. There are a variety of interactions between the different supply chains that vary by country and scenario. The reality, as measured in field studies, is much more complicated. ^{xix}

Medicines distributed under public or government funded programs are generally procured, distributed and dispensed through the government infrastructure of Central Medical Stores and smaller regional or district-level warehouses which supply community-level health clinics, through this traditional, centralized model.

Medicines sold through the private sector via retail pharmacies, private clinics/hospitals or even unlicensed sellers are distributed through a network of importers, wholesalers and distributors. Often the public-sector pharmaceutical supply chain will also outsource certain functions to the private sector. ^{xx}

² Gross operating margin was used to estimate the size of the pharmaceutical distribution market, as distributors account for the value of the products they are distributing as revenue and cost of sales, as per United States

³ Generally Accepted Accounting Principles (US GAAP). The retail pharmacy market was also estimated using gross operating margins.

Global retail pharmacy profit margin from the sale of medicines is estimated at 10 percent

FIGURE 2A. GLOBAL PHARMACEUTICAL DISTRIBUTION MARKET SIZE - 2015

Total Global Market Size = ~103 bn based on
Gross Operating Margin

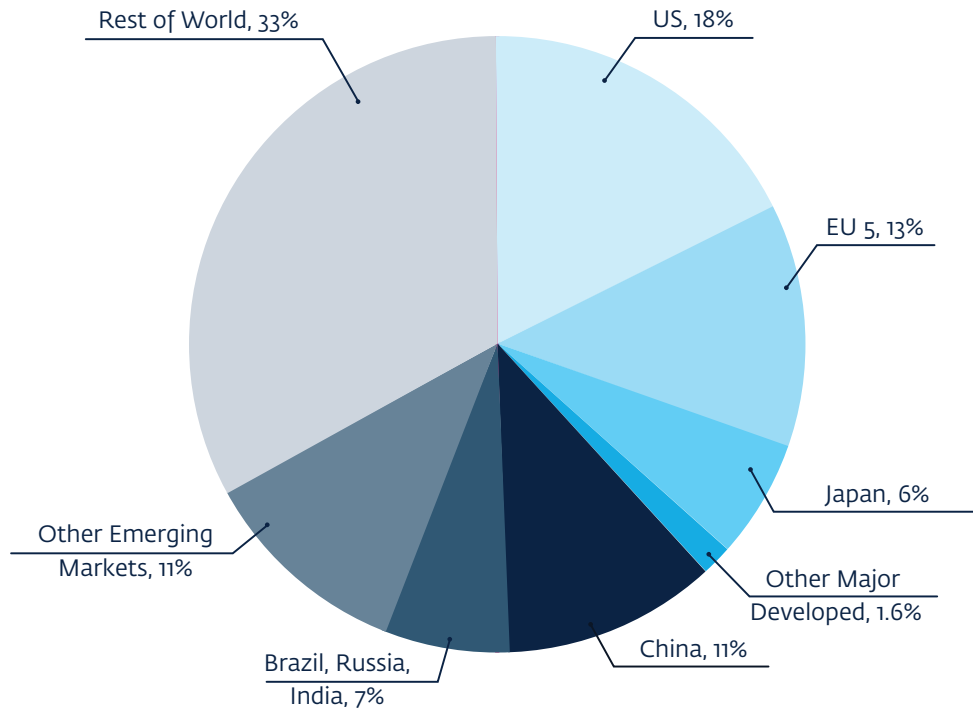


FIGURE 2B. GLOBAL PRIVATE SECTOR RETAIL PHARMACY MARKET SIZE - 2015

Market value based on Global Operating Margin = \$68 bn

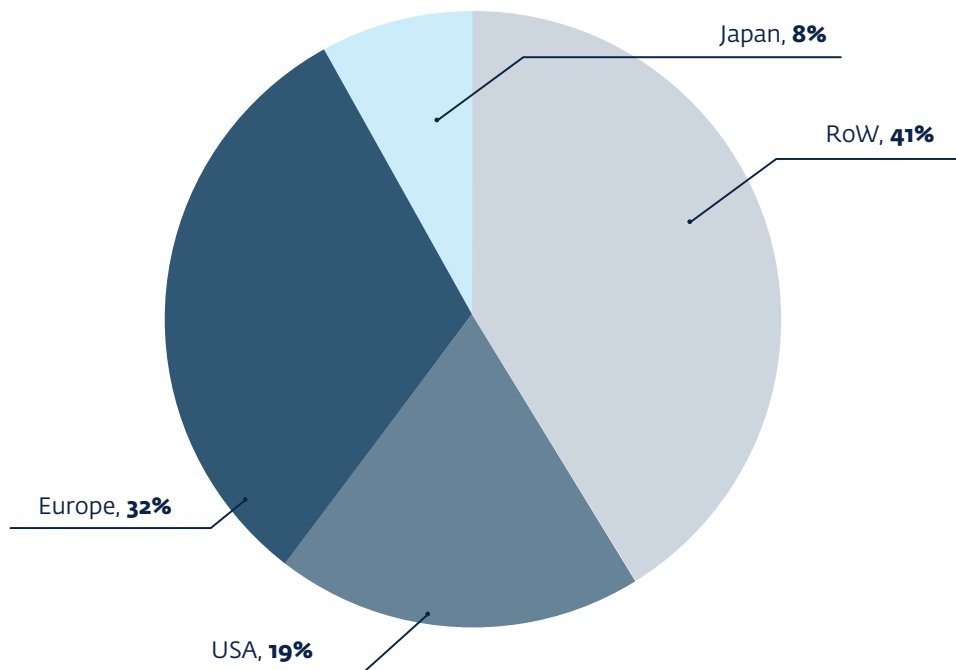
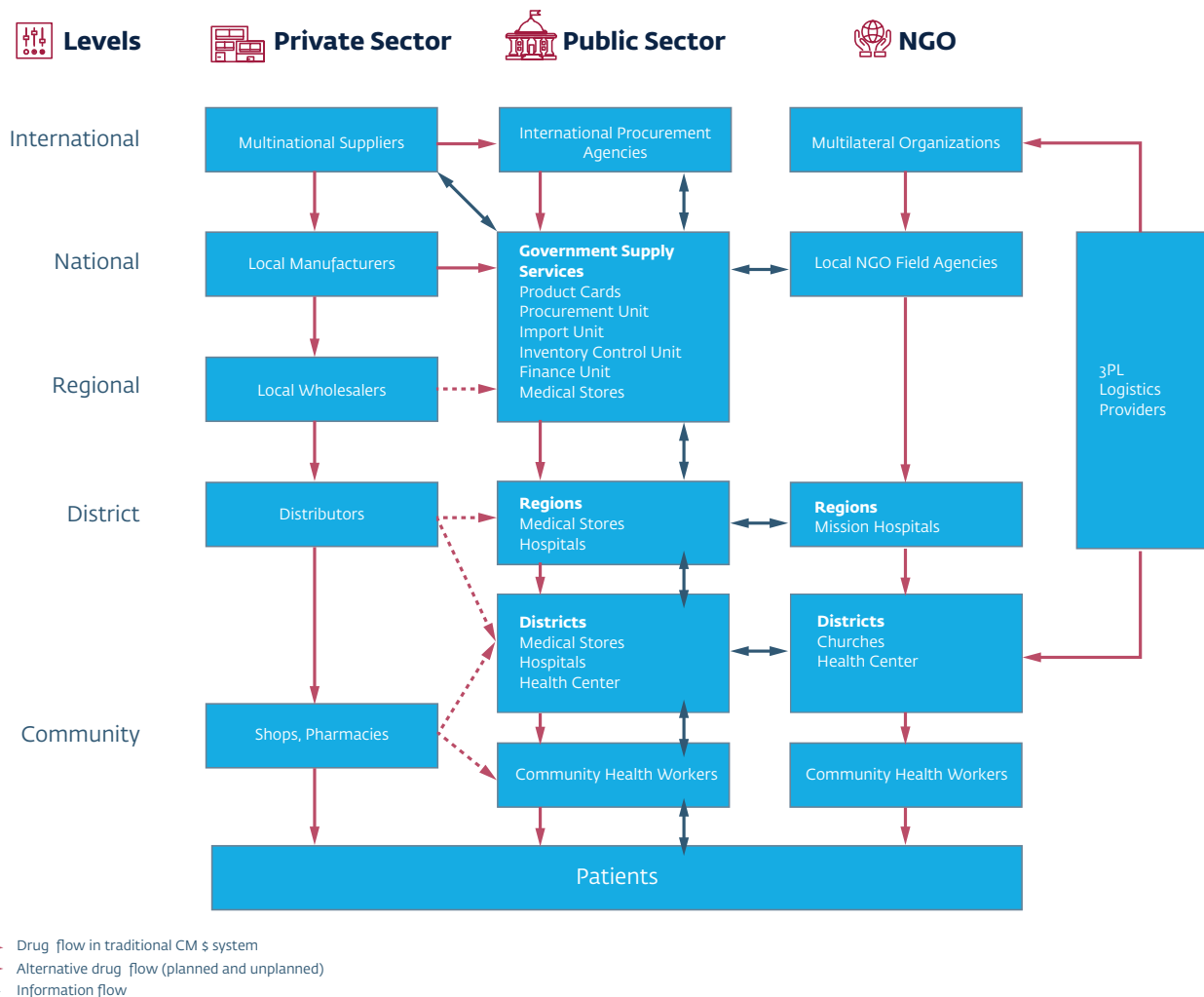


FIGURE 3. SCHEMATIC OF THREE TYPES OF PHARMACEUTICAL SUPPLY CHAINS IN EMERGING MARKETS ^{XXI}



Finally, medicines distributed through the voluntary or NGO sector can use the public or private sector pharmaceutical distribution network, depending upon the country, although some donor-funded programs have used third-party logistics providers (e.g. DHL) as well. Parallel supply chains often have been set up to expedite delivery of donor-funded medicines and other equipment. In order to make medical treatment in emerging markets sustainable and scalable, it is important for NGOs to collaborate with and involve local private sector distributors and retailers, also another way to help improve existing systems. Donor driven supply chains may distort private sector development as NGOs receive hidden subsidies and absorb a significant share of the value of goods distributed, as is often the case with malaria and HIV.

For example in sub-Saharan Africa, problems often begin once pharmaceutical products have been imported. Customs duties can be high on pharmaceutical products entering countries, where there is little Active Pharmaceutical Ingredient (API) production. South Africa and Tanzania are the only countries in sub-Saharan Africa with API production capability. Distributors add much needed liquidity to the supply chain and so, typically have a vast range of customers, ranging from governments to private sector retailers. In sub-Saharan Africa there is a prevalence of sub-distributors in the supply chain because they often have expansive local knowledge and so are typically the only ones able to get the product to retail outlets, especially in rural areas. This reliance on sub-distributors amplifies inefficiency and mark-ups across the supply chain, as each sub-distributor adds around 25 percent to the final price of

the pharmaceutical product. Countries such as Romania and Thailand also have highly fragmented supply chains, especially in retail pharmacy where few players have strong brands, causing customers to purchase medicines from multiple retail pharmacies, rather than developing a strong preference for a particular retail pharmacy.^{xxii}

Corruption can be a problem. For instance, small wholesalers, who are dependent upon large buyers such as regional medical stores and hospitals in some cases, may be required to make illicit payments in exchange for exclusive relationships. This is an obstacle to better integration in the supply chain. The challenges with mark-ups and corruption across the supply chain are best addressed through robust national regulation. Building regulatory capacity in emerging markets is critical.^{xxiii}

Regulation

National regulation often shapes the pharmaceutical distribution and retail pharmacy sectors, where many nations currently or until recently prohibited the consolidation of either sector (Figure 4; left column). In the past 20 years, many countries have refined rules on medicine pricing mark-ups for non-reimbursed (e.g., over-the-counter) medicines and started permitting the sale of over-the-counter medicines in non-pharmacy stores, such as grocery stores. Many countries have also relaxed regulations on the establishment or ownership of pharmacies and begun permitting the consolidation of independent retail pharmacies into chains.

These changes have increased the availability of medicines and possibly contributed to reducing the final cost of the medicine to the consumer due to increased competition and greater efficiencies. Notable exceptions exist, such as Argentina which prohibited the sale of over-the-counter medicine outside of retail pharmacy outlets in 2009.^{xxiv,xxv} However, efforts to reform and relax pharmaceutical distribution and retailing law and regulation are piecemeal across the world due to complexities among stakeholder incentives, along with competing legislative and regulatory priorities.

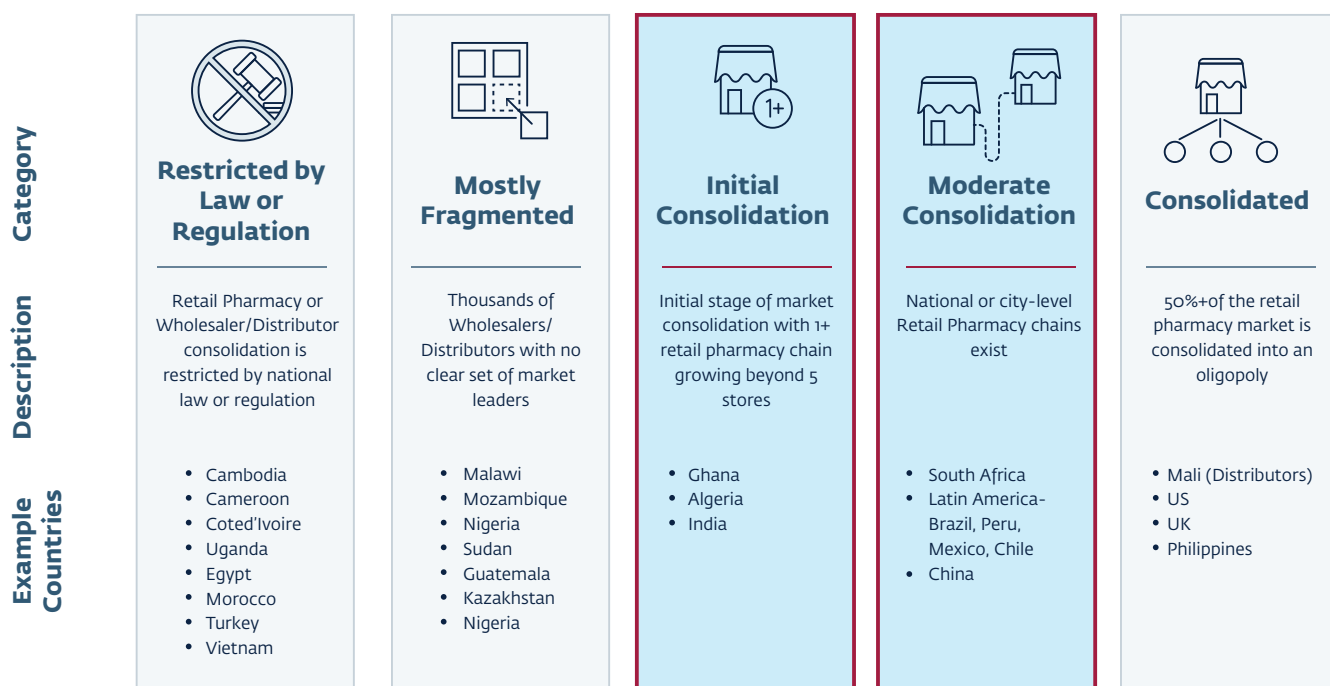
In cases where political decision makers hold investments in pharmacy businesses, officials are increasingly likely to resist consolidation in the pharmaceutical retailing sector.

Countries which have enforcement agents who supplement their income with bribes from small pharmaceutical retailers can also obstruct the process of consolidation and resist the implementation of new laws. While reform and harmonization are often on the agenda of many developing countries, most efforts center on new drug applications, and pharmaceutical distribution and retailing fall much farther down the priority list. When these issues are raised at the national legislative or regulatory level, it is often through the lens of protecting certain industries. For example, retail pharmacies under intense pressure from competition can enjoy increased supply chain efficiencies and reduced operating costs though may not feel an obligation to pass costs savings onto consumers requiring medicine, in the absence of robust national pricing guidelines and legislation.

Digital Supply Chain

Innovation in technology can help drive efficiency across fragmented supply chains. For example, mobile phones, drones and the ‘Internet of Things’ may all have a transformative effect by facilitating collection and reporting of data and improving visibility across the supply chain. This greater understanding of product demand often leads to reduced costs, reduced inefficiency and shorter time to market. Supply chains that leverage mobile technology, for example in countries such as Kenya and Nicaragua, help accelerate communication by submitting data to multiple stakeholders. Information on consumption can be transmitted by health workers in the clinic to the central logistics management unit to inform restocking and future procurement. Mobile technology is not only being used for communication, but has been also widely applied in financial transactions such as M-Pesa, a Kenyan mobile transactions service.^{xxvi} Finally, in countries where transportation infrastructure is an obstacle to efficient distribution of any goods, including pharmaceuticals, drone technology can play a role in the rapid distribution of goods that are infrequently required but can be life-saving within a limited time period, e.g. anti-venoms, HIV testing and treatment at birth, but development of traditional transportation infrastructure is still required to move the bulk of pharmaceuticals (e.g. aspirin, insulin) throughout a country more efficiently.^{xxvii}

FIGURE 4. ILLUSTRATION OF CONSOLIDATION OF PHARMACEUTICAL DISTRIBUTORS AND RETAIL PHARMACY CHAINS



The Economics of Private Sector Pharmaceutical Distribution and Retailing

The global access to medicines movement has had significant victories in scaling up the treatment of HIV, tuberculosis and malaria, by advocating for price reductions by manufacturers. There has also been success in accelerating the creation of competitive generic markets through innovations that impact licensing of pharmaceutical intellectual property.

However, the pharmaceutical price charged by the manufacturer only tells part of the story. The final price of a medicine paid for by a consumer is a combination of the manufacturer’s price, and mark-ups by importers, wholesalers and distributors, and retail pharmacies plus any applicable dispensing fees (Figure 5). Health Action International notes from its survey and analysis of medicine prices that mark-ups can account for up to 90 percent of the final price to the consumer in extreme cases, but often is in the 30-50 percent range in countries with unregulated mark-ups (Figure 5).^{xxviii} Often countries will regulate the mark-ups applied to pharmaceuticals

with variations dependent upon whether the medicine is reimbursed, is branded or generic, or has an exceptionally high price.^{xxix, xxx, xxxi}

In contrast, pharmaceutical distributor mark-ups in the UK, Denmark, Sweden, Finland and the Netherlands among other countries are in the range of 2-24 percent.^{xxxii} In the competitive but highly consolidated US market where the top three companies cover 85-90 percent of the pharmaceutical market have wholesaler / distributor mark-ups averaging 3 percent in their most recent fiscal years, as an example for the floor for distributor mark-ups.^{xxxiii,xxxiv} Each pharmaceutical distributor adds its own mark-up to account for their operational costs and profit requirements; thus vertical integration of distributors can drive down pharmaceutical distribution mark-ups. However, in emerging markets, the pharmaceutical distributor and/or retailer consolidation can, but does not always, yield cost savings or a markedly improved experience for the customer, as retail pharmacy chains may simply increase their profit margin rather than passing on distribution savings to customers.^{xxxv} Thus, increased competition and potentially regulation in the retail pharmacy sector

are also critical to ensure the consumer benefits through lower prices and, or better service, in addition to market consolidation.

Pharmacy chains have the scale to invest in platforms (e.g., e-commerce) that provide more varied services for consumers, and this is one example of where the consumer’s experience can be improved through market consolidation. In Latin America, pharmacy chains, such as Femsa in Mexico, have rapidly expanded, often through inorganic growth (i.e., mergers and acquisitions), while bringing a mass retailing approach, such as diversified product selections (e.g., perfume, household goods), e-commerce, longer store hours, additional services such as vaccinations or in-house clinics to consumers. This strategy is forcing traditional neighborhood pharmacies to prioritize which additional services to offer, such as home delivery or more personalized attention, to remain competitive.

Safety and Security of Medicines Throughout the Supply Chain

The World Health Organization describes medical products as “Substandard, Spurious, Falsely labelled, Falsified and Counterfeit” (SSFFC) if they do not meet quality standards as defined by a National Medicines Regulatory

Authority. This can happen for a number of reasons, such as manufacturing errors, medicine degradation through poor storage, or deliberate and fraudulent manufacture and/or labelling of the medicine. Estimates of the prevalence of SSFFC medicines vary. However, a robust pharmaceutical supply chain is critical for helping to curb SSFFC medicines through measures such as the appropriate storage of medicines so they do not degrade and become substandard, or secure tracking and tracing systems, so that counterfeit medicine producers do not have the opportunity to distribute their products through legitimate pharmaceutical supply chains. Tracking and tracing technologies, such as 2-D barcodes and RFID, have been piloted by Pfizer, the government of Turkey and others. Digital and mobile technology have the potential to decrease the upfront capital investment required to implement tracking and tracing systems.^{xxxvii}

FIGURE 5. AVERAGE PRICE MARK-UPS FOR MEDICINES IN EMERGING MARKETS

at Each Stage of the Supply Chain Postmanufacturing
Range from 10% - 75%

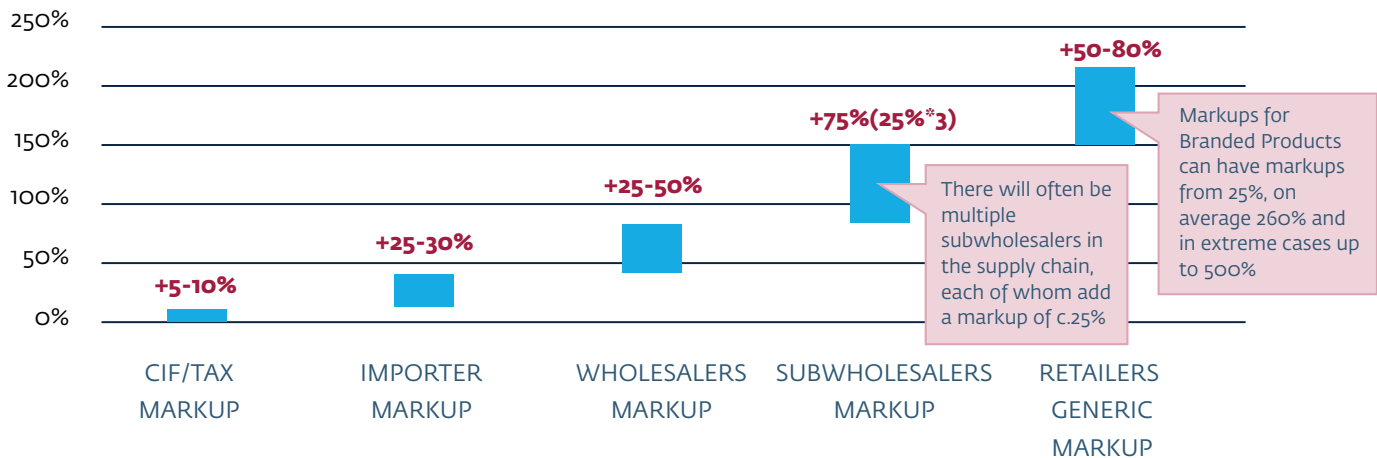




Photo © Jorge Royan | Pharmacy in Varanasi Benares, India.

CONCLUSIONS

Health is a basic human need. But too many people in emerging markets have limited access to life saving medicine, and too many are left impoverished by paying for it. In its most recent health strategy, the International Finance Corporation expanded its focus to include pharmaceutical distribution and retail pharmacy. There is a strong case for increasing direct and indirect investment in private sector pharmaceutical distributors and retail pharmacies in emerging markets, which have a combined \$94 billion market size (\$66 billion in the pharmaceutical distribution sector plus \$28 billion in the retail pharmacy sector) based on an analysis of profit pools.

Global pharmaceutical market growth is being driven by emerging markets and can be explained by volume growth

of inexpensive generic medicines used to treat chronic diseases, the increased ability to pay for needed medicines through government programs, and increased household wealth that can be allocated toward healthcare in the growing global middle class. Demand for medicines is also growing due to increased population size and longer life expectancies.

Operational challenges remain in numerous emerging markets and in order to capitalize on investment opportunities while reducing the cost of drugs and increasing availability of medicines for consumers, we believe there are four key areas that must be addressed.

- 1.** We suggest a **reduction in the layers of distribution**. The use of multiple sub-distributors increases the number of pricing mark-ups and in extreme cases leads to an exponential rise in the final price of medicine for consumers. Distributors often have deep relationships with sub-distributors, which makes dismantling layers of distribution difficult. Reducing these layers can also help limit incidents of corruption in the supply chain.
- 2.** It is important to introduce **stronger competition**, especially in private sector pharmaceutical distribution. Competition among a consolidated set of strong players can increase efficiency across the supply chain, cut the time it takes to deliver pharmaceuticals to consumers, and lower prices.
- 3.** More **market-friendly regulations** are key to driving improvements across pharmaceutical distribution and retail pharmacy systems in emerging markets. Regulators need to permit the consolidation of pharmaceutical distributors and retail pharmacies without reducing competition. They could also cap pharmaceutical distribution and retail pharmacy margins to protect consumers and increase their ability to buy life-saving medicines. Regulators need to increase enforcement capacity.
- 4.** Finally, **technological innovation** can increase transparency and efficiency across the pharmaceutical supply chain. Numerous innovations, ranging from mobile payment platforms, to devices connected to the internet, to drones could increase productivity. Technological innovation could have a notable impact in emerging markets with long-standing infrastructure deficiencies. Technology in such regions can ‘leapfrog’ pain-points in the pharmaceutical supply chain.

IFC is committed to increasing its focus on the pharmaceutical value chain, an often overlooked market segment, and can help bring best practices and increase private-public-donor-third party logistics providers' collaboration in the sector to improve supply chain efficiency and thus the external environment for rapidly scaling businesses. With a range of offerings including

Investment Services and Advisory Services, IFC is well placed to provide value-added support to private pharmaceutical distribution and retail pharmacy in emerging markets.

Supply Chain Problem	Direct or Indirect Financial Solutions	IFC Advisory Services
Fragmented market for both pharmaceutical distributors and retail pharmacies	<ul style="list-style-type: none"> • M&A financing 	<ul style="list-style-type: none"> • Fostering enterprise creation and growth by reducing barriers to business entry, expansion and exit • Support for companies to formulate a strategy and pursue new opportunities to enter or grow in emerging markets through mergers, acquisitions, and partnerships • Outsourcing government pharma distribution to private players
Working capital challenges for pharmaceutical distributors	<ul style="list-style-type: none"> • Working capital financing 	
Quality assurance – reducing SSFFC medicines in the supply chain	<ul style="list-style-type: none"> • Financing of anti-counterfeit technologies and tools 	<ul style="list-style-type: none"> • Sustainable business practices advisory
Concentration of distributors and retailers in cities.	<ul style="list-style-type: none"> • Financing of expansion, including infrastructure, in new regions 	

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