Policy Brief

International Comparison of Prices for Drug Prescriptions

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Abstract

This policy brief presents a quantitative analysis of the price of drug prescriptions filled in the United States compared to other developed nations. While past comparisons have often focused only on brand-name prescription prices, we evaluate the entire distribution of prices of prescriptions filled across both branded and generic products. Because generic drugs account for approximately 93% of U.S. prescriptions, and because the United States has the lowest generic drug prices among the countries analyzed, U.S. prescription costs are often lower than abroad. This contrasts with international comparisons that consider only brand-name prescriptions. We focus on five peer countries: Germany, France, the United Kingdom, Canada, and Japan. When examining public payers such as Medicare and Medicaid, which are the primary focus of most price control efforts, we find that U.S. prescription prices are actually 18% lower than in these nations. These findings challenge the common narrative that U.S. prescription prices are universally higher and suggest that future international comparisons should take into account the full prescription market rather than focusing solely on the costliest segment.

Section 1: Introduction

This policy brief examines prices for prescription drugs filled in the United States and abroad. We argue that many previous comparisons have approached this question incorrectly, helping to justify U.S. price control proposals. We find that when prescription prices are compared more correctly, prescription prices for U.S. public payers are lower than prescription prices in five developed countries analyzed.

Prescription prices vary widely depending on drug classes and drugs within those classes. Comparing prescription prices across countries, therefore, requires evaluating the entire distribution of prices within a country-- not just a single point. In particular, the distinction between brand and generic drugs is crucial in comparing prescription prices: the United States has the highest generic drug market share (93%) and the lowest generic prices among developed nations. All peer countries have smaller generic shares and more expensive generics.

In the U.S. market, this dynamic is shaped by an intellectual property and regulatory framework that policymakers established decades ago to balance incentives for innovation and long-term affordability. Over time, this framework has encouraged the swift market entry of tens of thousands of low-cost generic drugs while incentivizing the high-risk clinical research necessary to develop innovative brand medicines.

The implication of this framework is straightforward: in over nine out of ten cases, the United States offers the cheapest prescriptions among advanced economies. Because generics dominate the U.S. market, the median and even the higher percentiles of the U.S. prescription price distribution are lower than those of peer countries.

In fact, for the small share of brand-name prescriptions that make up 7% of the remaining volume, U.S. prescription prices can also be lower. This is certain to be the case when a branded drug is available in the United States but not abroad due to restrictions in single-payer systems. In those cases, the prescription is prohibitively expensive abroad or not available at any price -- making the U.S. prescription cheaper. This type of relative price comparison for unavailable goods in general, and foreign prescriptions here, is routinely done by economists analyzing the value of innovation. Lack of availability has the same consequence as a prohibitively expensive price -- in both cases the patient goes without the prescribed drug.

Past policy debates have overlooked these issues in assessing prescription price distributions. They typically focus on average prescription prices but not on the correct average prescription prices. They only consider the average brand-name prescription price, that is, the 7% most expensive prescriptions in the United States. This is like estimating average car prices by looking only at Ferraris and Bentleys. A better approach evaluates the entire prescription price distribution.
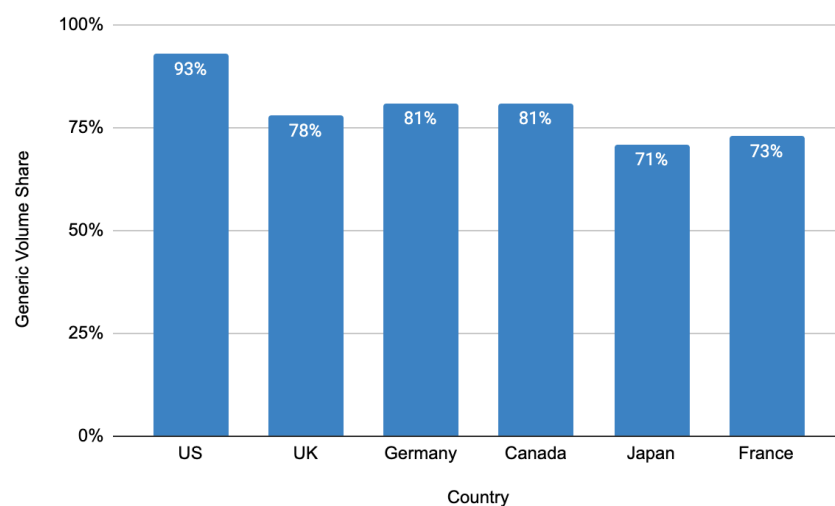
Our analysis attempts to do that. Even if sticking with average prescription price comparisons for the distribution of prescription prices, rather than percentiles, we find that for Medicare and Medicaid, U.S. prescription prices are 18% lower on average than in the United Kingdom, Germany, Canada, Japan, and France. And even that figure may understate the difference, since

it does not fully capture cases where brand-name drugs are simply unavailable for prescription abroad.

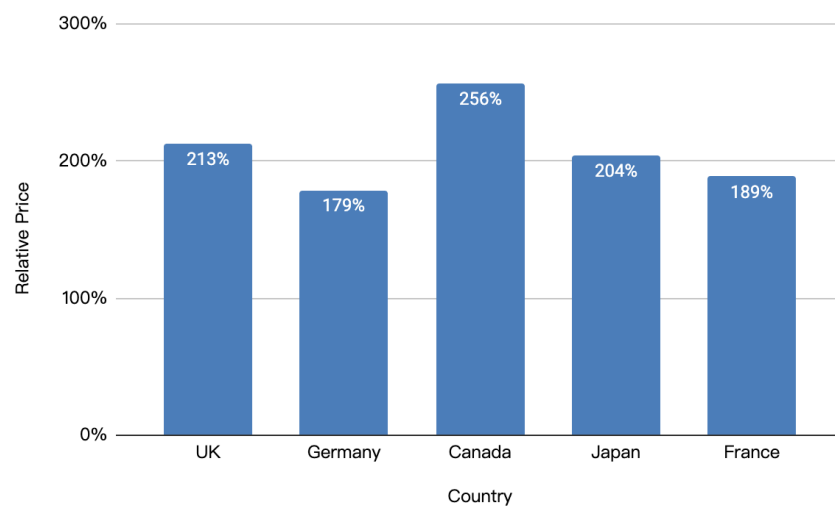## Section 2: Evaluating the Distributions of Prescription Prices Across Countries

In this paper, we focus on comparing the distribution of prescription prices in the United States, Canada, France, Germany, Japan, and the United Kingdom. One major difference that drives differences in the distribution of prescription prices between the United States and abroad is that the United States has both a larger share of generics as well as cheaper generics compared to other countries. Figure 1 below depicts the market shares of generics in selected countries and Figure 2 depicts the price of foreign generics as a multiple of the price of U.S. generics.

Figure 1: Volume Shares of Generic Drugs in the Selected Countries

Source: Table 2.2 in *the International prescription drug price comparisons: Estimates using 2022 data* by RAND (2024)

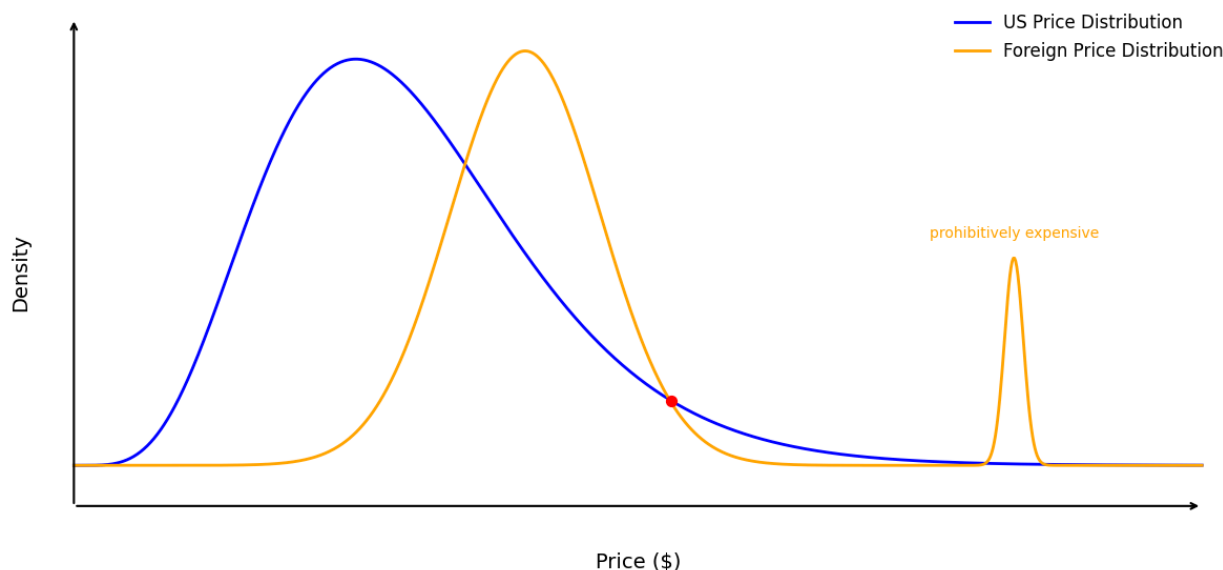*Figure 2: Foreign-to-U.S. Relative Prices of Generic Drugs*

Because of these patterns, the vast majority of prescriptions in the United States are lower-priced than abroad. Conceptually, the typical distribution of prices would look like the pattern shown in Figure 3 below.

Figure 3: Basic Features of Price Distributions of Prescription Drugs: United States vs. Foreign

Compared to the foreign price distribution, the figure shows a U.S. distribution of prices for a given set of molecules as compared to a foreign price distribution. The United States one has a lower median and lower percentiles due to more frequent and lower-priced generic versions of the molecules. But the U.S. distribution has a fatter tail for having higher priced brands for certain drugs. However, the foreign distribution has some drugs not available at any price, i.e., are prohibitively expensive, when not available abroad. The average price difference of the two distributions is ambiguous, depending on whether the larger market share of cheaper generics dominates the smaller market share of more expensive brands and how one would anchor the prohibitively expensive price abroad. We therefore consider empirical evidence determining average price differences in the next section.

Section 3: International Average Prescription Price Comparisons

This section analyzes average prescription prices between the United States and several reference countries such as Canada, Germany, France, Japan, and the United Kingdom.

Section 3.1 Methodology
Our objective is to measure whether prescriptions in the United States are more expensive, on average, than in other countries. To do this, we focus on comparing the *average net prices per prescription fill*, not only for branded drugs but also accounting for generics, which dominate prescription volume in all countries.

In our original approach, we compute the average prescription price as the weighted average of branded and generic drug net prices, using their respective volume shares. The international comparison is thus calculated as:

$$R = U.S. \ Prescription \ Price \ as \ \% \ of \ Foreign \ Prescription \ Price = \frac{S \cdot P + (1 - S) \cdot p}{S' \cdot P' + (1 - S') \cdot p'}$$

Where:
- S, S' are the volume shares of branded drugs in the United States and a foreign country,
- P, P' are the average net prices of branded drugs,
- p, p' are the average net prices of generic drugs,
- and R is the ratio of the U.S. to foreign average prescription price.

To utilize more readily available data to estimate this ratio, we reformulate this expression in terms of relative prices and generic-to-brand ratios. Specifically, we define:

$$x_1 = \frac{P}{P'}, \ x_2 = \frac{p}{p'}, \ x_3 = \frac{P}{p}$$

These are the price ratio between branded drugs across countries (x_1), the price ratio between generics across countries (x_2), and the relative generic-to-brand price ratio within the United States (x_3).

In the Appendix, we show that the relative price ratio R can be rewritten in terms of these often-documented ratios as:

$$R = \frac{[(x_3 - 1)S + 1]x_1 x_2}{x_1(1 - S') + x_2 x_3 S'}$$

To calibrate x_3, the relative price of branded to generic drugs, we use available spending and volume data. Specifically, we multiply the ratio of spending on branded versus generic drugs ($\frac{SP}{sp}$) by the ratio of generic to brand prescription volume ($\frac{s}{S}$).

Section 3.2 Data for Average Prescription Price Comparisons
In this section, we use our methodology to compare the average prescription prices across countries. We use relative list prices for branded and generic drugs from the 2024 RAND International Prescription Drug Price Comparison report, as shown in Table 1. Specifically, because most selected foreign countries operate under single-payer or national-level public systems, we focus on comparing prescription prices in the U.S. public sector and foreign countries. To achieve this, we align our analysis by adjusting branded drug relative prices using rebates for Medicare Part D and Medicaid, as well as foreign rebates.

Table 1: U.S.-to-Foreign Relative Prices for Branded Drugs List Prices and Generic Drugs

Country	P / P'	p / p'
U.K.	385%	47%
Germany	387%	56%
Canada	324%	39%
Japan	464%	49%
France	445%	53%

Source: Figure 3.2 and Figure 3.3 in RAND (2024)
Note: These ratios overapproximate the differential because the U.S. net prices are overstated. Besides, RAND reports that U.S. unbranded generics prices are 67% of those in foreign countries. However, the prices are the same as the reference countries when including branded generics.

MACPAC (2024) reports that the average rebate amount in Medicaid is about 53%. For Medicare, MedPAC (2024) states in its July data book that the total Part D rebate rate was 31% in 2022. We also collect the rebate rates for the selected foreign countries, as shown in Table 2 with indicated sources. We thereby adjust the branded price ratios P / P' by multiplying them with the ratios between the U.S. discount $(1 - \frac{31\% + 53\%}{2}) = 58\%$ and foreign discounts $(1 - foreign\ rebate\ rate)$. Meanwhile, the generic price ratios p / p' remain unchanged. We then have x_1 and x_2, as shown in Table 3.

Table 2: Foreign Rebate Rates

Country	Rebate Rate
U.K.	22.90%
Germany	20.00%
Canada	24.50%
Japan	0.00%
France	20.00%

Source: The U.K. rebate rate is reported by the Department of Health & Social Care (2024). The German rebate rate is retrieved from a policy evaluation by TRINITY (2023). The Canadian rebate rate is approximated by the policy brief submitted by Carleton University (2024). The French rebate rate is approximated based on the report by the Commonwealth Fund (2019).
Note: In Japan, the initial and later prices paid by the government are incorporated into the National Health Insurance (NHI) list prices.

Table 3: Adjusted U.S.-to-Foreign Relative Prices x_1 and x_2

Country	x_1 (P / P')	x_2 (p / p')
U.K.	290%	47%

Germany	281%	56%
Canada	249%	39%
Japan	269%	49%
France	323%	53%

The branded and generic drug shares are taken from the data in Figure 1, Section 2, as shown in Table 4.

Table 4: Branded and Generic Drug Volume Shares

Country	Generic Share s & s'	Brand Share S & S'
U.S.	93%	7%
U.K.	78%	22%
Germany	81%	19%
Canada	81%	19%
Japan	71%	29%
France	73%	27%

Source: Table 2.2 in RAND (2024)

RAND (2024) reports that in the United States, the sales volume shares are 87% for branded drugs and 13% for generic drugs. Therefore, we have $SP = 87\%$ and $sp = 13\%$ in the x_3 formula. Combining with the US volume shares $s = 93\%$ and $S = 7\%$, we then compute $x_3 = \frac{SP}{sp} \cdot \frac{s}{S} \approx 88.91$.

Section 3.3 Average Prescription Price Comparisons
Based on the data prepared in Section 3.2, including the values of x_1, x_2, x_3, and volume shares, we apply them to our formula to obtain the final results. These results are summarized in Table 5.

Table 5: U.S.-to-Foreign Prescription Net Price Ratios

Country	U.S.-to-Foreign Price Ratio
U.K.	85%
Germany	96%
Canada	81%
Japan	65%
France	81%
Average	82%

On average across countries, the U.S. net prescription price in the public sector is 18% lower than foreign net prescription prices.

Section 4: Conclusion

This policy brief has argued that prior assessments comparing prescription price distributions in the United States and abroad are misleading, largely because they focus on the 7% of prescriptions that are the most expensive. In reality, 93% of U.S. prescriptions are filled with generics, giving American patients access to some of the lowest-priced prescriptions among developed nations -- even as brand-name prescription prices remain high to support the innovation that eventually yields those generics.

Importantly, the prevalence of generics in the United States is no accident. It reflects a distinctively competitive American intellectual property and regulatory framework -- most notably the Hatch-Waxman Act. This law strikes a careful balance: it encourages generic entry once patents and other exclusivity periods expire, while preserving strong incentives for pharmaceutical R&D. Lower average prescription prices in the United States are driven not just by the high volume of generics, but also by the negotiating power of private Medicare plans and mandatory discounts in Medicaid, both of which reduce net prices for brand-name prescriptions.

This structure contrasts with systems that cap prescription prices to fit single-payer, government-controlled budgets -- often relying on health technology assessments to justify such controls -- while depending on the U.S. market to sustain the global incentives needed for future innovation. Global health would be higher and drug spending lower if foreign countries adopted the US model of encouraging innovation with higher brand prices while allowing competition to cut generic prices.

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