International Reference Pricing Medicaid & 340B
Impacts upon jobs and state budgets

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Executive Summary

- If the Most Favored Nation (MFN) policy factors the lowest adjusted international price across a select basket of countries into Medicaid rebates (the "MFN Price").

- Assuming the top 50 drugs by spending receive an MFN price, we would expect to see the following impacts:

  o A loss of over 440,000 U.S. jobs over the period of 2025- 2034, which includes 94,000 direct jobs and over 348,000 indirect jobs.

  o A loss of over $357 billion dollars in taxes paid over those 10 years, with $200 billion lost to the federal government and $157 billion lost to state governments.

  o The largest job losses occur in California, New York, Ohio, and Texas.

- MFN will cause companies who sell products in Medicaid to see a $100 billion reduction in revenues.

- MFN will cause companies who sell products into 340B to see a $250 billion reduction in their net sales, given the same number of projected prescriptions sold between 2025 and 2034

- Our 340B estimate is likely conservative, as demand for the 340B program will likely increase as prices are reduced; as 'profits' of the 340B program are opaque, this increase in demand cannot be calculated with publicly available information.

Reference Pricing under Most Favored Nations

- The Most Favored Nation (MFN) policy is a pricing mechanism that will incorporate foreign prices to determine the maximum allowable net price for any brand drug within the Medicaid program - our assumption that MFN would replace the "best price" portion of the Medicaid rebate formula, with inflation rebates being calculated in addition to MFN.

- We assume that MFN will impact the top 50 drugs by sales in Medicaid.

- MFN takes the lowest, GDP-adjusted international price into Medicaid (the "MFN Price"), based on a basket of countries. For this study, we assume the basket of MFN countries are those within 60% of U.S. GDP per capita, adjusted for purchasing power parity (PPP).

- On this criteria, the February 2024 U.S. Department of Health & Human Services' ASPE report indicates that Luxembourg has the lowest average price, which is 85% below that of the U.S., as Luxembourg's GDP per capita is higher that the U.S., it is unadjusted assuming the same methodology used in the MFN Executive Order from September of 2019.

- Medicaid rebates are also used to establish 340B 'ceiling prices'. As such, Vital Transformation has also incorporated the impacts of MFN on 340B.

- Demand and utilization are highly likely to show a marked increase within the 340B program due to MFN's large price reductions but, given 340B's opacity, the precise increase in 340B utilization after MFN implementation cannot be determined with publicly available data.

Methodology and assumptions

- MFN's potential impact on Medicaid's 'best available price' was extracted from the Assistant Secretary for Planning and Evaluation (ASPE) report from a basket of countries comparing international pricing; the list was expanded by benchmarking against OECD data for countries whose PPP adjusted GDP per capita is within 60% of that of the U.S.

- Medicaid's total beneficiaries by year, spending by branded and generic therapies, and gross spending and rebates by drug delivery by state were extracted from the MACPAC statistical archive and calculated for the top 50 selling drugs in the CMS Medicaid 2023 dashboard, representing 41.57%.

- For this analysis, we assume the ratio of total Medicaid sales at AMP to WAC is 90%, and the ratio of AMP to 'best available price' is, on average, 66%, as drawn from Table 2 in CBO's 2021 publication.

- The Medicaid inflation rebate was computed based the annualized growth of the AMP relative to the CPI-U as outlined by the CBO in their quarterly formula.

- The weighted average federal tax paid by U.S. filers in each state was calculated using data extracted from the U.S. Tax Foundation and IRS. The average state tax rate burden was extracted from the U.S. Tax Foundation.

- 340B discount percentages by year and number of covered entities were sourced from the analysis of Drug Channels.

- Total employment, earnings, and taxable income data for NAICS industries 3254 Pharmaceutical and Medicines Manufacturing, 4242 Drug and Druggist Sundries Wholesale, 5417 Scientific Research and Development (R&D), and 5511 Management of Companies and Enterprises were extracted from the U.S. Bureau of Labor Statistics (BLS) quarterly census data.

- For each NAICS sector, final demand multipliers for total jobs and earnings are from the RIMS II dataset of the Bureau of Economic Analysis (BEA). A weighted average of these multipliers was used, with direct and indirect jobs and earnings calculated using a multiplier of total jobs to direct jobs of 4.69 taken from the IMPLAN model used by Teconomy.

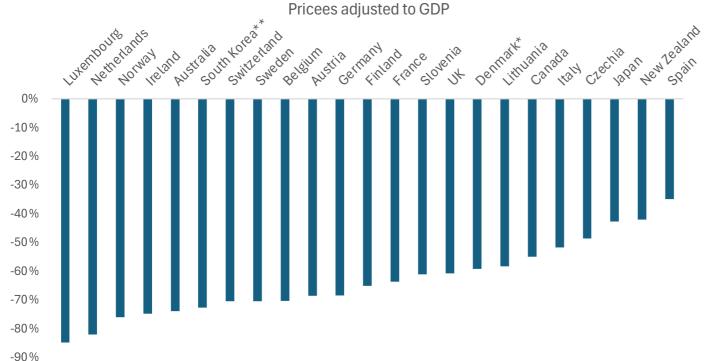- The raw data used in the calculations for this report can be downloaded here.

The impact of MFN reference pricing on jobs & state budgets

Reference Pricing under Most Favored Nation

MFN comparison basket countries
ASPE report - Countries by 60% of US GDP (PPP)
Pricees adjusted to GDP

Source https://www.theglobaleconomy.com/rankings/gdp_per_capita_ppp/OECD/
*Denmark price taken from "A Painful Pill to Swallow..." House Ways and Means, 9/2019
Israel, and Iceland have been excluded from this analysis as they were not included in the ASPE report.
** South Korea listed as Korea in ASPE report.

- Under most favored nation (MFN), Luxembourg with its payment of 15.1% of U.S. prices would be the basis of the calculation of Medicaid's 'best available price' before the application of an inflation rebate.

- This price would also factor into the determination of the ceiling price for drugs being placed into 340B entities.
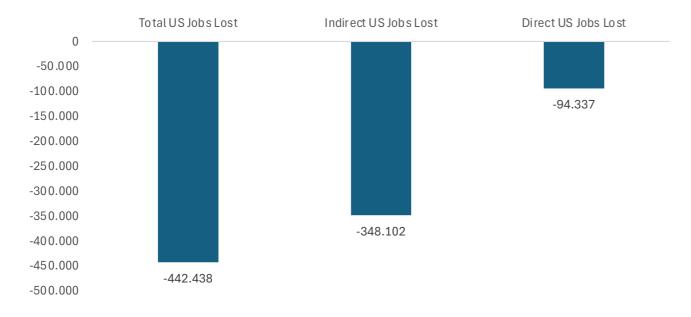
- Prices have been adjusted for GDP.

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MFN's use in Medicaid & 340B will lead to over 440,000 lost jobs.

MFN Impact on Total US Jobs Lost: 2025-2034
-$180 Billion NPV

- If incorporated into the rebate formula for the top selling 50 drugs in Medicaid, revenue losses due to the reference price in Luxemburg will lead to over 440,000 U.S. jobs lost.

- Multipliers for total jobs and earnings for NAICS categories are from the RIMS II dataset of the Bureau of Economic Analysis (BEA) using a weighted average of each sector's final demand multiplier; direct and indirect jobs were calculated using the multiplier 4.69 taken from the IMPLAN model used by Teconomy.

- For every job lost in direct pharmaceutical employment, 3.7 indirect jobs are also lost.

MFN Impact on U.S. biopharma jobs by state - $180 billion NPV reduction 2025 – 2034

State	Total Jobs Lost	Direct Jobs Lost	Indirect Jobs Lost	State	Total Jobs Lost	Direct Jobs Lost	Indirect Jobs Lost
California	47,935	10,221	37,715	Oregon	6,057	1,292	4,766
New York	30,173	6,434	23,740	Kansas	5,156	1,099	4,056
Ohio	28,893	6,160	22,732	West Virginia	5,155	1,099	4,056
Texas	25,939	5,531	20,408	Maryland	5,091	1,086	4,006
Pennsylvania	20,981	4,474	16,507	Utah	4,695	1,001	3,694
Virginia	19,875	4,238	15,637	Iowa	4,618	985	3,633
Florida	18,935	4,037	14,897	Mississippi	3,889	829	3,060
Michigan	17,045	3,634	13,411	Idaho	3,791	808	2,983
Louisiana	16,693	3,559	13,134	North Dakota	3,736	797	2,939
Illinois	14,752	3,145	11,607	South Carolina	3,692	787	2,905
Indiana	11,490	2,450	9,040	Arkansas	3,093	659	2,433
Massachusetts	10,797	2,302	8,495	New Mexico	2,927	624	2,303
Kentucky	10,663	2,273	8,389	Nebraska	2,726	581	2,145
North Carolina	10,392	2,216	8,176	Alabama	2,626	560	2,066
Missouri	9,818	2,093	7,724	Maine	2,534	540	1,994
Wisconsin	9,652	2,058	7,594	Montana	2,406	513	1,893
Connecticut	8,532	1,819	6,713	New Hampshire	1,621	346	1,275
Arizona	8,215	1,752	6,463	South Dakota	1,468	313	1,155
Minnesota	7,994	1,705	6,290	Rhode Island	1,427	304	1,123
Washington	7,753	1,653	6,100	Hawaii	1,224	261	963
Georgia	7,049	1,503	5,546	Delaware	1,092	233	860
New Jersey	6,889	1,469	5,420	Vermont	829	177	652
Oklahoma	6,781	1,446	5,335	Alaska	771	164	607
Colorado	6,381	1,360	5,020	District of Columbia	661	141	520
Tennessee	6,345	1,353	4,992	Nevada	617	132	486
				Wyoming	566	121	445

NAICS industries 3254, 4242, 5417, and 5511 with multipliers from the RIMS II dataset

MFN's Impact on Medicaid & 340B earnings, state taxes, and federal taxes

MFN Impact on State & Federal Taxes an Earnings, 2025-2034
$2024 US Millions, -$180 Billion NPV

Chart showing:
- Earnings Lost ($2024 Mil.): -$1.442.987
- Total Taxes Lost ($ Mil): -$357.444
- Federal Taxes Lost ($ Mil): -$200.766
- State Taxes Lost ($ Mil): -$156.678

- Total lost earnings due to reduced economic activity exceed 1.4 trillion dollars over 10 years if the 50 drugs with the largest expenditure in Medicaid are impacted by an MFN price.

- Federal taxes lost are roughly $200 billion over 10 years; total state taxes lost are roughly $157 billion over 10 years.

NAICS industries 3254, 4242, 5417, and 5511 with multipliers from the RIMS II dataset

MFN Impact on U.S. biopharma earnings and contributions to state and federal taxes
$180 billion NPV reduction 2025 – 2034

State	Earnings Loss ($2024 Mil.)	Federal Taxes Lost ($ Mil)	State Taxes Lost ($ Mil)	Total Taxes Lost ($ Mil)	State	Earnings Loss ($2024 Mil.)	Federal Taxes Lost ($ Mil)	State Taxes Lost ($ Mil)	Total Taxes Lost ($ Mil)
California	$135,593	$24,984	$18,305	$43,289	Utah	$18,595	$2,428	$2,250	$4,678
Ohio	$105,756	$11,699	$10,576	$22,274	Kansas	$16,291	$1,983	$1,825	$3,808
Texas	$93,152	$13,436	$8,011	$21,447	Alabama	$16,145	$1,644	$1,582	$3,226
New York	$84,451	$16,372	$13,428	$29,800	Iowa	$15,538	$1,678	$1,740	$3,418
Florida	$66,486	$10,784	$6,050	$16,835	West Virginia	$15,193	$1,323	$1,489	$2,812
Louisiana	$66,427	$6,889	$6,045	$12,934	Maryland	$14,151	$2,215	$1,599	$3,814
Pennsylvania	$63,860	$8,513	$6,769	$15,282	South Carolina	$13,127	$1,366	$1,168	$2,534
Virginia	$60,803	$9,200	$7,600	$16,800	Arkansas	$11,909	$1,223	$1,215	$2,437
Michigan	$57,751	$6,853	$4,967	$11,820	Idaho	$11,797	$1,321	$1,262	$2,583
Illinois	$46,921	$7,227	$6,053	$13,279	Mississippi	$11,309	$951	$1,108	$2,059
Indiana	$40,224	$4,218	$3,741	$7,959	North Dakota	$11,291	$1,403	$994	$2,397
North Carolina	$34,394	$3,964	$3,405	$7,369	New Mexico	$10,004	$950	$1,020	$1,970
Wisconsin	$34,255	$3,976	$3,734	$7,710	Maine	$9,607	$998	$1,191	$2,190
Kentucky	$32,791	$3,157	$3,148	$6,305	Nebraska	$9,183	$1,053	$1,056	$2,109
Missouri	$31,330	$3,561	$2,914	$6,474	Montana	$8,611	$964	$904	$1,868
Arizona	$30,783	$3,765	$2,924	$6,689	South Dakota	$4,889	$590	$411	$1,001
Massachusetts	$29,098	$6,102	$3,346	$9,448	New Hampshire	$4,307	$674	$414	$1,088
Oklahoma	$27,454	$2,783	$2,471	$5,254	Rhode Island	$3,343	$427	$381	$808
Minnesota	$25,884	$3,526	$3,132	$6,658	Hawaii	$3,160	$381	$446	$827
Georgia	$25,849	$3,133	$2,301	$5,433	Vermont	$2,792	$314	$380	$694
Washington	$23,717	$4,320	$2,538	$6,858	Alaska	$2,302	$297	$106	$403
Connecticut	$23,338	$5,231	$3,594	$8,825	Delaware	$2,275	$275	$282	$557
Tennessee	$22,409	$2,672	$1,703	$4,375	Nevada	$2,052	$298	$197	$495
Colorado	$20,876	$3,254	$2,025	$5,279	Wyoming	$1,889	$350	$142	$492
Oregon	$20,288	$2,456	$2,191	$4,647	Wash DC	$478	$124	$57	$181
New Jersey	$18,860	$3,461	$2,489	$5,951					

NAICS industries 3254, 4242, 5417, and 5511 with multipliers from the RIMS II dataset
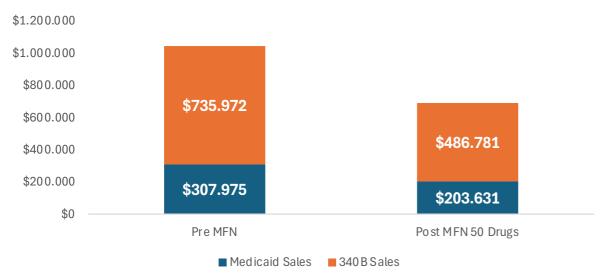
Sector impacts of MFN reference pricing on Medicaid and 340B

MFN reference pricing reduces Medicaid and 340B net revenue by -$350 billion
Top 50 drugs by spending, 2025 - 2034

Projected MFN Impact on Revenue by Program
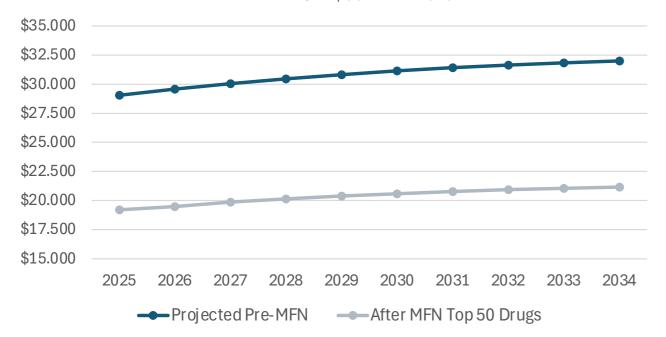**Top 50 Drugs by Spending**
2024 $USD, in millions

- MFN will cause companies who sell products in Medicaid to see a reduction in their net sales, given the same number of prescriptions sold between 2025 and 2034.

- MFN will cause companies who sell products into 340B to see a reduction in their net sales, given the same number of prescriptions sold between 2025 and 2034.

- Substantial reductions in profitability of this size would likely cause firms to avoid selling products in countries that are to be included as a possible reference benchmark in the MFN program.

MFN reference pricing on top 50 drugs by sales leads to -$100 billion reduction in revenue
2025 – 2034, constant 2024 $U.S.D

Projected Impact of MFN on Medicaid Revenue

2024 $USD in Millions
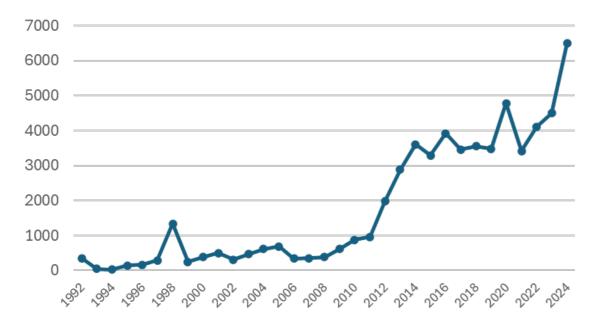
Legend: Projected Pre-MFN — After MFN Top 50 Drugs

- MFN will cause companies who sell products in Medicaid to see a reduction in their net sales for the same number of units sold.

- For our top 50 drugs by revenue, the addition of an inflation rebate on top of a now much higher basic Medicaid rebate can result in Medicaid rebates that exceed 100% for those drugs impacted by reference prices.

- Substantial reductions in profitability of this size would likely cause firms to avoid selling products in countries that are to be included as a possible reference benchmark.

340B will likely see a large jump in demand with the implementation of MFN
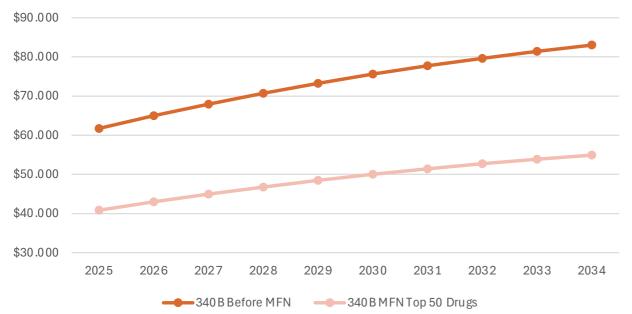## 1/1/2018 – 8/16/2024

340B Parent Entities per Year

- 340B has experienced exponential growth in covered entities participating in the program since its inception in 1992.

- Companies will see a reduction in their cumulative 340B net sales - a reduction of $61 billion.

- The lower ceiling prices within 340B will likely lead to increased demand for utilization of the channel.

- Given the current opacity of the 340B program, a GAO report has stated that they cannot, "confirm compliance with 340B Program requirements at contract pharmacies."

Reference pricing will cause a -$250 billion reduction in 340B revenues if the top 50 drugs are impacted, which will lead to further demands to use the program

Projected Impact of MFN on 340B Revenue
2024 $USD in Billions

Legend: 340B Before MFN · 340B MFN Top 50 Drugs

- MFN will lower the Medicaid 'best available price', which will then serve as the ceiling price for products in 340B.

- Companies will see a $250 billion reduction in revenue over 10 years if the top 50 drugs are impacted by a reference price.

- According to a recent report released by the office of Senator Cassidy, "[340B] covered entities purchased $124.1 billion (at WAC pricing) in covered outpatient drugs in 2023."

- Given the current opacity of the 340B program, a GAO report has stated that they cannot, "confirm compliance with 340B Program requirements at contract pharmacies."

- It is highly likely that these calculated losses are understated, as demand for the 340B program will likely increase as prices are reduced. Given that the 'profits' of the 340B program are unknown, this shift in demand cannot be calculated with publicly available information.

Disclosure

- Vital Transformation, an international health economics and strategy consultancy, was asked to urgently conduct an analysis of the impact of the announced intention of the Trump Administration to sign an <u>executive order</u> implementing most favored nations (MFN).

- Our focus was the impact of MFN on the U.S. biopharma ecosystem and unintended consequences on jobs, wages, and economic activity.

- The analysis was performed by Vital Transformation's Consulting Economist Dr Harry P Bowen, Research Partner Gwen O'Loughlin, and CEO Duane Schulthess.

- The opinions included in this work are those of Vital Transformation LLC.

- The data behind this study can be accessed <u>here</u>.