

SATURDAY, MARCH 19, 2016

Would Mexico Pay for a Wall? Some Trump Calculus

Donald Trump is regularly mocked for saying he would make Mexico pay for a wall on the U.S. border. What could he be thinking?

Trump estimates the cost of a wall to be \$10 billion, while other estimates suggest the cost might be \$25 billion. The length of the border is approximately 2,000 miles. Israel has completed 330 miles of its wall/fence around the West Bank at a cost of around \$2.6 billion, which would suggest a total cost for Trump's project of around \$16 billion. 344 miles of the Mexican border are already fenced, which would reduce the cost, but difficult terrain in some remaining areas would increase the cost. I will (I think conservatively) assume a cost of \$25 billion.

Mexico will not, of course, simply pay because they are told to, but they do have a significant vulnerability - remittance payments from immigrant workers to their families back home total \$24.8 billion per year. Oklahoma already imposes a 1% tax on these payments that raised \$11.3 million last year. Revenue from the tax has increased steadily since it was enacted in 2009 - on average it has risen 7.8% per year.

Trump has suggested that he would impound remittances from illegal wages, but a simple impound would not raise any revenue because knowing that the money would be impounded, no illegal workers would remit any money. To calculate the revenue that would be earned from a tax on remittances, it is necessary to calculate how much remittances would decline in reaction to the tax.

An estimate of the elasticity of demand for remittances with respect to cost is $-.22$, meaning that a 1% increase in cost reduces remittances by 0.22% . I assume that the current cost of remittances is 4%. In the following simple revenue model, r equals tax revenue, t is the tax rate, R is total current remittances, ϵ is the elasticity of demand, and c is the current cost as a percentage of remittance amount.

Tax revenue will be:

$$r = tR \left(1 + \frac{t\epsilon}{c} \right)$$

The derivative of tax revenue with respect to the tax rate will be:

$$\frac{\partial r}{\partial t} = R \left(1 + \frac{2t\varepsilon}{c} \right)$$

Setting the derivative equal to zero and solving for the tax rate that maximizes tax revenue gives:

$$t = \frac{-c}{2\varepsilon}$$

Using the assumed values of c and ε gives a tax rate of 9.1%, which produces revenue of \$1.13 billion per year. If the cost of the wall is \$25 billion, and the current long term government borrowing rate is 2.7% per year, then the remittance tax revenue would amortize the cost of the wall in 17.6 years.

A problem for this plan is that Trump plans to deport illegal immigrants, which would reduce remittances. The Congressional Budget Office estimates that 73% of all legal residents of the U.S. born in Mexico remit money to Mexico, and 83% of illegal residents do so. The Pew Research Center estimates that 51% of all Mexican born U.S. residents are here illegally. Assuming that the payment amounts are the same per resident, if Trump departs all illegal residents immediately, revenue from the remittance tax would decline by 54.2%, which would increase the time in which the wall could be amortized to 31.3 years.

Trump has other ideas to finance the wall at Mexico's expense. The U.S. sends \$350 million annually to Mexico in economic aid and \$70 million in military aid. Trump has suggested cutting these amounts, and if they were cut to zero, the amortization time would be reduced to 20.4 years.

Trump has also suggested raising tariffs on Mexican goods entering the U.S. It is apparently possible for the president to opt out of NAFTA, and Hillary Clinton has also promised to threaten to opt out unless Mexico agrees to concessions. The value of annual Mexican imports to the U.S. is \$37 billion. A calculation similar to what I did for a remittance tax, but with a larger elasticity of -.86 and existing transport costs of 2% suggests a revenue maximizing tariff of 1.2% which would raise \$144 million per year, reducing the wall amortization time to 18.2 years.

Trump also suggests raising the fee for Mexicans to enter the U.S. Mexico recently raised the fee for Americans to cross into Mexico to around \$28. If the U.S. did something similar it might raise enough to lower the wall amortization time to 17.8 years.

Of course there would also be maintenance costs for the wall, but Trump only said Mexico would pay to

build it, not maintain it. Presumably he would be willing to maintain the wall using U.S. taxpayer money.

Whether the wall is a good idea or not is a different question. It seems to me, however, that Trump is correct that the U.S. has the means to force Mexico to pay for it.

While most Americans have not thought through the details, it is intuitively obvious to them that a powerful country like the U.S. has the ability to squeeze money from a poor country like Mexico. The fact that experts all say it is impossible only convinces voters that experts are clueless. It is obvious to everyone that Trump is no policy expert, but recent failures of experts* have convinced voters that a businessman with common sense could do better.

* See [here](#), [here](#), [here](#), [here](#), and [here](#) for examples.

POSTED BY DAVID BARKER AT 10:02 AM