

# The Most Favored Nations Clause: What Can Trade Theory Tell Us?

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## **Abstract**

This paper considers the effect of the Most Favored Nations (MFN) clause in a world with one large country and two small countries. The small countries face a bargaining friction in dealing with the large country. MFN improves the welfare of each country relative to a time consistent equilibrium without MFN. However, the some countries may prefer a bilateral agreement over time consistent trade with MFN. The results illustrate the tension between Articles I and XXIV of the GATT.

## INTRODUCTION

The principle of Most Favored Nations (MFN) has been the cornerstone of international trade liberalization since the early days of world trade. Jacob Viner (1924) describes the use of the principle going back to the American Revolution. MFN has been codified in the world trade system since the signing of the General Agreement on Tariffs and Trade (GATT) in 1947. The GATT required participating nations to refrain from discriminatory tariff rates.<sup>1</sup> The principle is stated clearly in the very first article of the agreement.

### GATT Article I (1947)

With respect to customs duties and charges of any kind ..., and with respect to all rules and formalities in connection with importation and exportation,...any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties.

Source: [http://www.wto.org/english/docs\\_e/legal\\_e/gatt47\\_e.pdf](http://www.wto.org/english/docs_e/legal_e/gatt47_e.pdf)

Following the MFN principle to the letter, countries would be required to set equal tariffs on goods regardless of the country of origin. This would preclude regional free trade areas, such as the North American Free Trade Agreement (NAFTA), and customs unions, such as the European Union (EU), in which countries eliminate tariffs within the region but impose tariffs on countries outside the region. In the case of a free trade area, tariff rates are set individually by the member countries (Canada's tariff schedule differs from that of the U.S.). In the case of a customs union, the rates

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<sup>1</sup>The GATT has been superseded by the World Trade Organization (WTO) which continues to uphold the basic principles of the original agreement, including MFN.

are centrally determined and are common throughout the region. Recognizing that there may be value to the world trade economy in agreements of this type, the original members of the GATT provided for an exception to the MFN clause. Customs unions and free trade areas are permitted, but even then there are conditions.

GATT Article XXIV (1947)

The contracting parties recognize the desirability of increasing freedom of trade by the development, [of customs unions and free trade areas].

Accordingly, the provisions of this Agreement shall not prevent, as between the territories of contracting parties, the formation of a customs union or of a free-trade area.... Provided that: (a) ... the duties and other regulations of commerce imposed at the institution of any such union ... shall not on the whole be higher or more restrictive than the general incidence of the duties and regulations of commerce applicable in the constituent territories prior to the formation of such union.

Source: [http://www.wto.org/english/docs\\_e/legal\\_e/gatt47\\_e.pdf](http://www.wto.org/english/docs_e/legal_e/gatt47_e.pdf)

Tariffs may be eliminated within the region, while retaining an external tariff as long as the external tariff is generally no higher than it formerly was in the member countries. Not long after the implementation of the GATT, the seminal paper of Viner (1950) considered the problem of trade creation vs. trade diversion in customs unions. The elimination of trade barriers within the area creates trade within the area, but because of this, the member countries may trade less with countries outside the region. This not only lowers world welfare, but may harm welfare in the importing countries in the customs union if the outside countries subject to tariff are lower cost producers.

Some of the literature on MFN addresses this tension between Articles I and XXIV. For example, Gatsios (1990) finds that the MFN clause benefits low cost exporters

(the developed world) at the expense of their trading partners. Developing importers would prefer to discriminate and impose higher tariffs on the low cost producers. Applying MFN across the spectrum takes away their ability to do discriminate. Thus, developed countries are better off with the MFN clause, and MFN can only be supported with the help of side payments from the developed countries to the less developed countries. Such a side payment could be interpreted as foreign aid.

Choi (1995) generalizes Gatsios (1990) by endogenizing technology choice. Importers in the developing world will benefit in the long run from MFN because the exporters will choose a lower cost technology. In the short run, however, there are sunk costs associated with technology choice. This raises the incentive for the importers to levy discriminatory tariffs. MFN may benefit the developed world in the short run, but not necessarily in the long run. The opposite is true for developing countries. This is an example of a time consistency problem, the precise nature of which will be explained in the next section. MFN proves useful as a commitment mechanism which ties the hands of the developing country policymaker preventing them from making a short run decision that is not in the country's long run best interest.

McCalman's (2002) approach to the problem looks at MFN from the perspective of multilateral negotiations, which is relevant to the approach taken in the present paper. Despite the fact that MFN induces a free rider problem during negotiations (as countries benefit from overall trade liberalization and tariff harmonization), MFN can be welfare enhancing. In a many country world with bargaining frictions, large countries would prefer to negotiate terms bilaterally against smaller trading partners, especially as the number of countries increases. This is precisely when the world is better off under MFN. In his paper, McCalman (2002) recasts the question succinctly: "Therefore the challenge is not to quantify how poorly the MFN clause performs in a first best environment, but rather to consider the potential advantages and disad-

vantages it may have compared to other institutions in a world where negotiations encounter frictions” (p.152).

It is from this point that the present paper discusses a slightly different time consistency problem associated with the MFN issue. When bargaining over trade and when production costs are sunk, large countries have an incentive to extract concessions over time from smaller trading partners. This adds a particular sort of friction which may influence the type of benefits that accrue to countries under the MFN clause. This paper will analyze the effect of MFN on the bargaining position of smaller countries. The tension between Articles I and XXIV of the GATT is particularly prominent here. Small countries benefit from multilateral MFN in the sense of McCalman (2002), but would not want to give up the ability to band together in regional agreements.

## MODEL

The model is motivated by two papers in the trade literature that deal with time consistency. Lapan (1988) was the first to identify a time consistency problem associated with the incidence of sunk costs prior to a renegotiation of a trade agreement. In his paper, both countries suffered welfare loss due to the higher *ex post* tariff. McLaren’s (1997) approach was more stark in both its assumptions and its conclusions. With Ricardian technology and a small country bargaining with an asymptotically large country, the large country can in some cases extract all the utility from the small country, leaving the small country worse off than under autarky. Despite some important differences, both models emphasize the role of sunk costs in creating a time consistency problem. The model described in this section retains McLaren’s (1997) asymptotically large country, but does not assume a linear Ricardian technology.

There are 3 countries: 1 asymptotically large (meaning that it can set the world price) and 2 price takers. Label the price taking countries *A* and *B*. All coun-

tries have a production technology for producing 2 goods,  $X$  and  $Y$ , which can be expressed as a convex production possibility set,  $Y^i = F^i(X^i)$  where  $F$  is decreasing and concave. Countries differ in the shape of the production possibility frontier. The utility functions in the small countries are increasing and concave in the consumption of each good.

Small countries can trade with each other. Without loss of generality, assume that  $A$  exports  $X$  and  $B$  exports  $Y$  in bilateral trade. Good  $Y$  is the numeraire and the price of  $X$  relative to  $Y$  is labeled  $P$ . The large country is willing to trade either good at the external price that it is free to set. Assume that the marginal rate of transformation for the large country is  $Z$ . Thus,  $Z$  would be the world's free trade price. The large country can offer the small countries a price greater than or less than  $Z$ , but with MFN, they must offer the same relative price to both countries. It is standard in this literature to assume an *ad valorem* tariff. An *ad valorem* tariff on  $X$  ( $Y$ ) lowers the world price of  $X$  ( $Y$ ) proportionally. Thus, all that matters is the ratio of the tariff rates, and even this can be more efficiently expressed in terms of the world price vector that the tariffs imply. All of the optimization problems will be cast in terms of choosing  $P$ . When choosing  $P$ , the small countries' production levels are given. This represents sunk costs of production and is an assumption that is common to Lapan (1988) and McLaren (1997).

It is important to note that the large country's objective in this problem is to maximize tariff revenue resulting from tilting the world price vector. This is the case only because the production and consumption distortions at home are asymptotically small.<sup>2</sup> If the large country were not the world's sole price setter, the objective would be to maximize domestic utility balancing the marginal gain from the terms of trade advantage against the production and consumption distortions. The methods and

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<sup>2</sup>Since they are asymptotically large, trade with the small countries is negligible relative to their domestic production and consumption.

results would be similar. Since the emphasis is on the small countries, the assumption of an asymptotically large country puts the focus squarely on the price distortions in the small countries, not the large one.

The time consistency problem is most closely related to that in McLaren (1997). In general, a time consistency problem emerges when the action of a policymaker at time  $t = 0$  induces that policymaker (or a successor) to make a decision at time  $t = \hat{t} > 0$  that is optimal from the perspective of time  $\hat{t}$  given the past decision, but would not be optimal  $\hat{t}$  policy from the perspective of time  $t = 0$ .<sup>3</sup> In such a case, the economy would benefit from a mechanism to commit the policymaker to choosing an optimal sequence of policies from time  $t = 0$  forward that maximize long run utility. Here, the problem is that the large country can offer free trade prior to the time when the small countries' production levels are set. The acceptance of free trade induces the small countries to specialize in the export sector.<sup>4</sup> This increases their dependence on the export sector. Once production levels are set and the small countries' bargaining position weakened, the large country would want to renegotiate the agreement to obtain more favorable terms of trade. The result is that a small country may find itself worse off ex post than they would have been under autarky because a small country cannot commit to refrain from specialization.<sup>5</sup> If they could make a commitment to specialize only a small amount they would gain.

With one small country, the large country's optimization problem (given production levels) yields a well-known result. Consumption in the small country is labeled  $c$ . Assume trade in  $X$ .

$$\max_P (Z - P)(X - c(P)) \tag{1}$$

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<sup>3</sup>The classic paper exposing the time consistency problem in a general form is Kydland and Prescott (1977).

<sup>4</sup>In McLaren (1997) with a linear production technology, specialization was complete.

<sup>5</sup>The reader will note the similarity to the familiar "hold up problem" in industrial organization.

The first order condition of the problem in (1) is

$$\begin{aligned} -(X - c(P)) + (Z - P) \left( -\frac{dc}{dP} \right) &= 0 \\ \frac{(X - c(P))}{P} \left( -\frac{dc}{dP} \right)^{-1} &= \frac{Z}{P} - 1. \end{aligned} \tag{2}$$

The condition in (2) states the familiar result that the large country's tariff rate,  $\frac{Z}{P} - 1$ , is equal to the export elasticity of their trading partner. Since production is fixed, export elasticity only involves the derivative of the consumption function.

In models with time consistency issues, the timeline is crucial.

1. Small countries commit to free trade with each other if they face unfavorable terms of trade from the large country. Essentially, this is a fall-back position – an outside option should negotiations go badly.
2. Small countries set production levels and agree on price (bilateral terms of trade).
3. Large country sets its tariff (sets external price it presents to the small countries) optimally.
4. Trade and consumption takes place.

**Remark** For a time consistent equilibrium with trade, the price at step 3 must be the same as the price in step 2. The small country cannot regret its production choice after the tariff is set.

**Remark** Because the prices must be the same at step 2 and 3, the small countries always diversify exports. That is, one country exports  $X$  and the other exports  $Y$ . In the event that the price from the large country is too low, they need to

have an outside option, and in equilibrium, the large country offers a price at which the small countries could trade bilaterally.

The solution method is backward induction. This insures that the prices at steps 2 and 3 of the timeline are equal and the small country does not regret its production decision.

1. Compute small country consumption decision rules given prices and production levels.
2. Compute large country tariff rates given the small country decision rules.
3. Compute production levels given the tariff.

Efficient production would require that the small countries' marginal rates of transformation are equal to the price that the large country offers. Since the large country can always tilt the price in their favor once production levels are set, the small country cannot set their MRT equal to the free trade price. If they did, they would not receive the world free trade price in equilibrium, and the result would not be time consistent. This is the essential insight of Lapan (1988).

Given small country utility  $U^i$ , the small country's decision rules are found by solving

$$\begin{aligned} \max_{c_X^i, c_Y^i} U^i(c_X^i, c_Y^i) \\ \text{s.t. } P_i c_X^i + c_Y^i = P_i X^i + Y^i \end{aligned}$$

At this stage,  $X^i$  and  $Y^i$  are taken parametrically. The first order conditions imply

$$P_i = \frac{U_1^i}{U_2^i} \text{ for all } i$$

This together with the resource constraints,  $X^A + X^B = c_X^A + c_X^B$  and  $Y^A + Y^B = c_Y^A + c_Y^B$ , yield the decision rules,  $c_j^i(X^A, X^B, Y^A, Y^B, P_A, P_B)$ ,  $i \in \{A, B\}$ ,  $j \in \{X, Y\}$ . The arguments of the consumption functions will be suppressed in the rest of the analysis.

Extending the tariff choice problem to two countries and letting the superscript on  $c$  stand for the country and the subscript stand for the good,

$$\max_{P_A, P_B} (Z - P_A) (X^A - c_X^A) + \left( \frac{P_B - Z}{P_B} \right) (Y^B - c_Y^B) \quad (3)$$

The first order conditions in (3) are

$$-(X^A - c_X^A) + (Z - P_A) \left( -\frac{dc_X^A}{dP_A} \right) = 0 \quad (4)$$

$$\frac{Z (Y^B - c_Y^B)}{P_B^2} + \frac{P_B - Z}{P_B} \left( -\frac{dc_Y^B}{dP_B} \right) = 0 \quad (5)$$

In this case, without MFN, the large country can discriminate and maximize the revenue extraction from each country individually. Essentially, they can “divide and conquer,” and the outcome is as in McLaren (1997) played out in two countries. With MFN, the problem is the same, but add the constraint  $P_A = P_B$ . The first order condition becomes

$$-Z (X^A - c_X^A) + \left( \frac{Z}{P} \right)^2 (Y^B - c_Y^B) + Z(Z - P) \left( \frac{1}{P} \frac{dc_Y^B}{dP} - \frac{dc_X^A}{dP} \right) = 0 \quad (6)$$

**Proposition 1** *Assuming that the offer curves of A and B are concave functions of their respective export price,  $P=Z$  is the unique solution to (6).*

**Proof.** If the offer curves are concave functions of export prices, the second derivatives of (3) will be negative in  $P_A$  and  $P_B$ . With MFN, the prices are equal, and the

second derivative of (3) is the sum of  $\frac{d \left[ -(X^A - c_X^A) + (Z - P_A) \left( -\frac{dc_X^A}{dP_A} \right) \right]}{dP}$  and  $\frac{d \left[ \frac{Z(Y^B - c_Y^B)}{P_B^2} + \frac{P_B - Z}{P_B} \left( -\frac{dc_Y^B}{dP_B} \right) \right]}{dP}$

which is the sum of two concave functions. Thus,  $(Z - P)(X^A - c_X^A) + \left(\frac{P-Z}{P}\right)(Y^B - c_Y^B)$  achieves a unique maximum where  $P$  satisfies (6). With  $P = Z$ , (6) reduces to  $-P(X^A - c_X^A) + (Y^B - c_Y^B)$  which is the trade balance condition and must equal 0. Finally,  $\frac{dc_Y^B}{dP}$  and  $\frac{dc_X^A}{dP}$  are of opposite sign. Thus,  $P = Z$  is the unique solution to (6).

■

The implication of Proposition 1 is that with MFN, free trade price is time consistent. The large country cannot benefit from putting a tariff on both goods because MFN restricts the way that relative tariffs can be set. They must offer the same schedule to each country, even if in equilibrium the small countries only export one of the two goods. If the large country raises the tariff on one good, it decreases the revenue gain from the tariff on the other good, *ceteris paribus*. Put another way, MFN implies that the large country no longer chooses two nominal prices, but one relative price.

However, the time consistent equilibrium prevents the small countries from achieving production efficiency. The threat of tariff forces them to specialize differently than if there were no bargaining friction. Production must be chosen so that the large country chooses to offer the free trade price in equilibrium. This means choosing  $X$  and  $Y$  so that the bilateral trade price is  $Z$ . The maximization problem takes the consumption decision rules as given (indicated by \*) and solves

$$\max_{X^i, Y^i} U^i(c_X^{i*}, c_Y^{i*})$$

$$\text{s.t. } Zc_X^{i*} + c_Y^{i*} = ZX^i + Y^i$$

$$Y^i = F^i(X^i).$$

Together with balanced trade and the aggregate resource constraint, this fully characterizes the time consistent equilibrium.

In summary, the small countries benefit from MFN in that the large country will offer them the free trade price in equilibrium rather than offering them discriminating tariffs. However, the countries do not achieve production efficiency, so world utility could still be improved by adding a commitment mechanism so that the large country cannot threaten a tariff.<sup>6</sup> We cannot say anything in general about the utility gains or losses for the individual small countries, as the following example illustrates.

### AN EXAMPLE

Let the production possibility frontiers of the two countries be as follows.

$$A : Y^A = (400 - .25X^{A^2})^{(1/2)}$$

$$B : Y^B = 2(625 - X^{B^2})^{(1/2)}$$

Let the utility functions in the two countries be logarithmic.

$$A : U^A = \ln c_X^A + \ln c_Y^A$$

$$B : U^B = \ln c_X^B + \ln c_Y^B$$

Finally, let  $Z = 1$ .

Solving the model yields the results summarized in the following tables.

Table 1. Bilateral Trade

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<sup>6</sup>McLaren (1997) suggests that even in modern trade negotiations, this can be difficult.

$X_A =$	36.3259	$X_B =$	11.9179
$Y_A =$	8.37302	$Y_B =$	43.9538
$c_X^A =$	22.0229	$c_X^B =$	26.221
$c_Y^A =$	23.8863	$c_Y^B =$	28.4396
$U^A =$	6.26538	$U^B =$	6.61434
MRT	-1.08461	MRT	-1.08461
Price	1.08461		

Table 2. Time Consistent Trade with the Large Country (MFN)

$X_A =$	37.0506	$X_B =$	13.0878
$Y_A =$	7.53749	$Y_B =$	42.6009
$c_X^A =$	22.294	$c_X^B =$	27.8444
$c_Y^A =$	22.294	$c_Y^B =$	27.8444
$U^A =$	6.20864	$U^B =$	6.65326
MRT	-1.22888	MRT	-1.22888
Price	1		

As the tables make clear, A loses from time consistent trade while B gains relative to bilateral trade. This can be explained by the fact that A is the exporter of X and is facing a lower price of X. While they have a comparative advantage in X, the production distortion causes them to specialize even more as the price is falling. Total utility falls just slightly when trading with the large country due to the production distortion ( $MRT \neq P$ ).

## CONCLUSION

This model sets up a framework for thinking about time consistent trade and considers whether MFN can be beneficial in the presence of certain trade frictions. The main friction is in the bargaining. Without a commitment mechanism, the large country has an incentive to raise the tariff on the small countries once production

levels are set. The main theoretical result derived in this paper shows that the time consistent price is, in fact, the free trade world price (the large country's MRT). However, the fact that the large country cannot commit to this price ahead of time implies that the small countries will be required to adjust their production, distorting it away from the efficient level in each sector.

Clearly, since MFN adds a constraint to the large country's optimization problem, the result for the small countries under MFN can be no worse than when there is time consistent trade without MFN. However, the results indicate that some countries will gain from MFN relative to bilateral trade. This illustrates the tension between Article I and Article XXIV of the GATT. Some countries will prefer to enter into small regional agreements and set high tariffs against the larger developed countries because of the bargaining friction. These countries would support liberal application of Article XXIV. Other countries would rather see universal MFN treatment since they gain from free trade prices in a time consistent equilibrium.

Possible extensions of the model include adding additional countries and examining the effect of tariff reduction among small countries. This model assumed the small countries trade freely from the start. In reality, this may not be the case. Implementing this type of extension to the model would provide another useful lens through which to consider the classic argument of trade creation vs. trade diversion.

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