



A Supply and Demand Exposition of a Constitutional Tax Loophole: The Case of Tariff Symmetry¹

ROBERT A. MCGUIRE

Department of Economics, University of Akron, Akron, Ohio 44325, USA

rMcGuire@uakron.edu

T. NORMAN VAN COTT²

Department of Economics, Ball State University, Muncie, Indiana 47306, USA

tvancott@bsu.edu

Abstract. The U.S. Constitution permits import tariffs but bans export duties. Yet import taxes are *de facto* export taxes, just as export taxes are *de facto* import taxes. Access to this symmetry proposition has been limited by its illustration being in daunting analytics largely restricted to international economics. This is unfortunate. Tariff symmetry exposes a tax loophole of constitutional proportions, a case where economics “trumps” the intentions of America’s Founding Fathers. Moreover, tariff revenue was the U.S. government’s pivotal revenue source from 1789 until the 1913 constitutional sanctioning of the income tax. Because U.S. exports were heavily agricultural, tariff symmetry implies that federal taxation had an export dimension with disparate economic and regional consequences. By making tariff symmetry more accessible, this paper lowers the “cost” of examining important issues.

JEL classification: K10, F13, H20, N41.

1. Introduction

The United States Constitution permits import duties (Article 1, Section 8, Clause 1) but prohibits duties on exports (Article 1, Section 9, Clause 5). Constitutional scholars ascribe the export tariff prohibition to the influence of southern delegates to the 1787 Constitutional Convention in Philadelphia, arguing that the prohibition was part of a larger compromise. To wit, southern delegates accepted a simple-majority voting rule for laws regulating trade (instead of a super-majority rule) in exchange for the export tariff prohibition and a twenty-year moratorium on federal interference in the African slave trade. In addition, some have mentioned that the fugitive slave clause was part of this compromise. In any event, the objective of the ban on export tariffs was to shield southern export interests from federal taxation.

Buried in the archives of the international economist is the proposition that import taxes are *de facto* export taxes, just as export taxes are *de facto* import taxes.³ The proposition applies with special force to the above provisions. Indeed, it means that economics “trumps” the original intent of the Constitution’s tariff clauses, creating a tax loophole of constitutional proportions. Constitutional economists and public finance scholars appear to ignore this example of the irrelevance of *constitutionally* proscribed tax incidence, even though constitutions embody a political order’s fundamental rules, as discussion of symmetry cannot be found in those literatures.

The oversight is understandable, however. Tariff symmetry has long been explained in offer curve diagrammatics or its underpinnings, an analytical construct that is the preserve of the international economist.⁴ The explanation presents a daunting threshold; even international economists now omit symmetry analysis from many of their texts. There is *no* discussion of tariff symmetry in Carbaugh (1998), Gerber (1999), Husted and Melvin (2001), Krugman and Obstfeld (2000), Pugel and Lindert (2000), and Yarbrough and Yarbrough (1997).

Understandable or not, the lack of attention to this constitutional loophole goes beyond simple intellectual curiosity. The tax loophole figured prominently in U.S. fiscal history, as federal government tax revenue from import tariffs was pivotal from the nation's inception until the constitutional sanctioning of the income tax in 1913. Indeed, prior to 1860, tariffs were the largest source of revenue every year except in 1836, when land sales generated more revenue. From 1866 to 1910, tariffs were the largest revenue source in 37 of the 45 years. Because U.S. exports were heavily agricultural *and* southern, import tariffs had a *de facto* export tariff dimension with disparate economic and regional consequences.⁵ If constitutional scholars are correct about the origins of the export tariff prohibition clause, the southern delegates' "deal" at the Philadelphia Constitutional Convention in 1787 might be a classic example of economic miscalculation, or worse, ignorance.⁶

The objective of this paper is to increase constitutional economists and public finance scholars' access to the symmetry proposition by explaining it in supply and demand diagrammatics. To our knowledge, no one has ever done so, a void in the literature we find astounding given the symmetry proposition's importance in U.S. constitutional and fiscal history.⁷

2. Laying the Supply and Demand Groundwork

Let the United States be the tariff-imposing country. Given the daunting nature of offer curve explanations of symmetry, our overriding objective is to keep what follows as straightforward as possible. We lump all U.S. exports under agriculture (A). Similarly, we lump all U.S. imports under manufactures (M). We denominate export and import prices in dollars. Assume the dollar values of exports and imports are equal prior to any tariffs. Also assume there are no net capital flows. Let the foreign exchange rate (the dollar price of foreign currency) be flexible, which means, given the above, that the initial exchange rate is the equilibrium rate.

The relevant supply and demand schedules for U.S. imports and exports, S_M , D_M , S_A , and D_A , are shown in Figure 1 and Figure 2, respectively.⁸ Lest we forget, countries export in order to import. Exports are the cost of trade and imports are the benefit, not the other way around. Accordingly, the height of S_M indicates foreigners' minimum acceptable price *in terms of dollar values of A* when selling manufactures to Americans. Dollar values of A are also the yardstick for heights of D_M because Americans ultimately pay for imports with exports. Although ostensibly about imports, the "export dimensions" that attach to S_M and D_M are the linchpin of a symmetry exposition in terms of Figure 1.

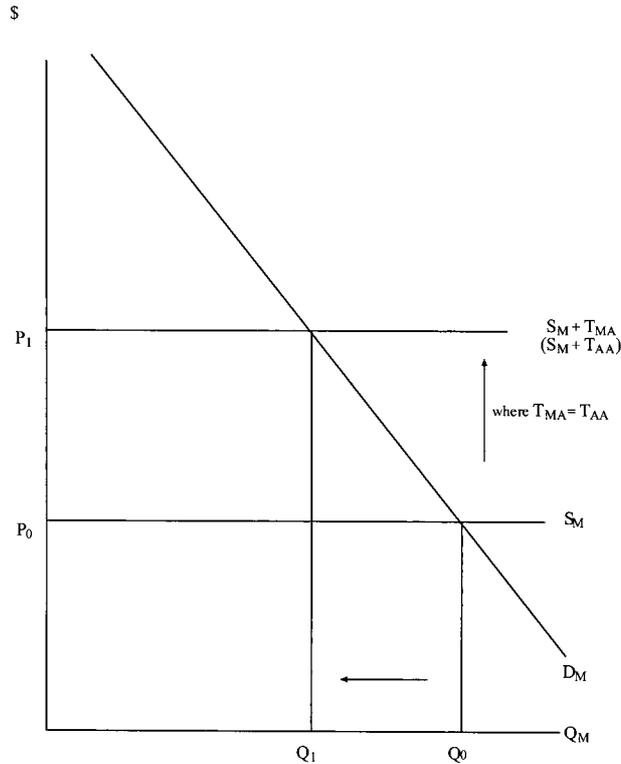


Figure 1. U.S. import market.

That countries export in order to import also means that dollar values of M measure the height of D_A in Figure 2. Likewise, heights of S_A in Figure 2 measure dollar amounts of M that Americans must obtain to induce them to export successive amounts of A to foreigners. The “import dimensions” that underlie S_A and D_A are the linchpin of a symmetry exposition in terms of Figure 2.

3. Enacting the Tariffs

Assume tariffs are specific duties (a specific dollar amount per unit of the commodity), and that their legal incidence is on foreigners. Recall that the yardstick for the heights of S_M and D_M in Figure 1 is dollar values of A . This means that Figure 1 is the appropriate venue for analyzing tariffs (import or export) whose proceeds are collected in A . Similarly, because the heights of S_A and D_A in Figure 2 measure dollar values of M , Figure 2 is the appropriate venue for tariffs (import or export) whose proceeds are collected in M .⁹

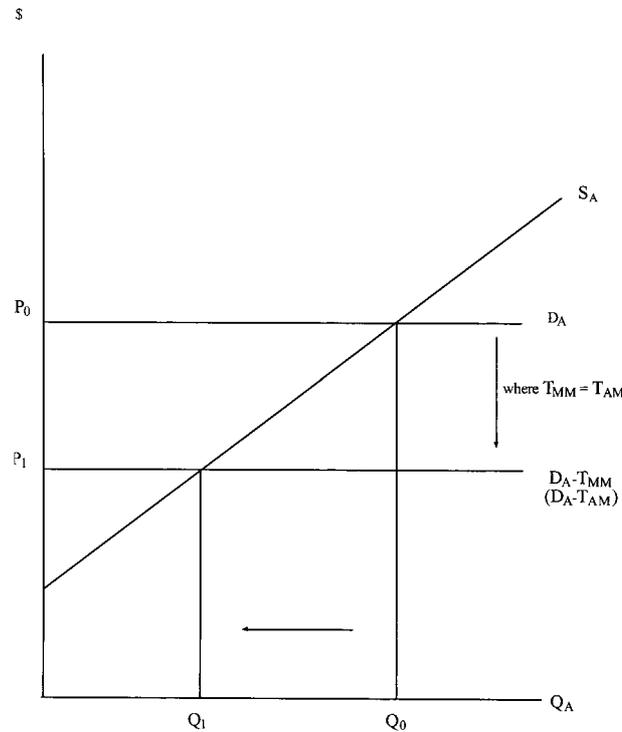


Figure 2. U.S. export market.

3.1. An Import Tariff Collected in A

Suppose the U.S. government imposes an import tariff on M, collecting it in A. Denote this tariff as T_{MA} . An analysis in terms of Figure 1 is straightforward (the plot thickens when we consider an export tariff collected in A). With foreigners bearing T_{MA} 's legal incidence, their supply price for selling M to Americans rises by T_{MA} , shifting S_M upward to $S_M + T_{MA}$ in Figure 1.

3.2. An Export Tariff Collected in A

Instead of an import tariff, let the U.S. government enact an *export* tariff on A, where the proceeds are collected in A. Denote this tariff as T_{AA} . It may appear incongruous to some to analyze such a tariff in terms of Figure 1, since Figure 1's ostensible focus is on M. Yet recall that the height of S_M in Figure 1 measures the minimum dollar claim over A that foreigners must realize to induce them to sell M to Americans. Given that foreigners bear the legal incidence of T_{AA} , however, it follows that the tariff raises their minimum acceptable price for selling M to Americans by T_{AA} . In Figure 1, S_M shifts to $S_M + T_{AA}$.

Note that regardless of whether the tariff (collected in A) is levied on imports (M) or exports (A), S_M in Figure 1 shifts up by the amount of the tariff. This is the essence of tariff symmetry. At a minimum, import tariff T_{MA} and export tariff T_{AA} have identical qualitative effects on the price and quantity of imports. Were T_{MA} and T_{AA} equal (as is the case in Figure 1), the two tariffs' quantitative effects also are identical.

The perceptive reader will realize that the analysis does not end here. *Either* tariff elicits a surplus in the U.S. trade balance at the initial foreign exchange rate, leading to a fall in the dollar price of foreign currency. But the exchange rate adjustment has *no* effect on symmetry. Rather, it restores trade balance equilibrium at a reduced level of trade compared to the pre-tariff situation. We now turn to tariffs collected in M.

3.3. *An Import Tariff Collected in M*

Let the U.S. government enact an import tariff on M, collecting it in M. Denote this tariff as T_{MM} . As should hopefully be clear by now, Figure 2 is the appropriate venue for this analysis even though its ostensible focus is on A. Dollar values of M are the yardsticks for the heights of S_A and D_A . Given that: 1) D_A measures the maximum amount of M that foreigners will offer for successive amounts of A; and 2) the legal incidence of the tariff is on foreigners, it follows that the tariff causes foreigners' demand for A *exclusive of the tariff* to shift down by T_{MM} . The new demand schedule is shown as $D_A - T_{MM}$ in Figure 2. The tariff-exclusive demand schedule, in conjunction with S_A , determines the post-tariff quantity of exports.¹⁰

3.4. *An Export Tariff Collected in M*

The final case is an *export* tariff, where the government collects it in M. Denote this tariff as T_{AM} . The analysis of this export tariff should be straightforward. With foreigners bearing the legal incidence of T_{AM} , their demand price for A *exclusive of the tariff* falls by the amount of the tariff. The new demand schedule for this tariff is shown as $D_A - T_{AM}$ in Figure 2.

It follows that the qualitative effect of tariffs collected in M is the same regardless of whether it is assessed on imports or exports. This is the essence of tariff symmetry in terms of Figure 2. Were T_{MM} equal to T_{AM} (as is the case in Figure 2), the two tariffs' quantitative consequences also would be identical.¹¹

4. Concluding Comment

The rationale for this paper is compelling. Although the U.S. Constitution prohibits tariffs on exports, economics tells us that the consequences of this proscribed tax are approximated by a tax that the Constitution allows—import tariffs. In other words, economics trumps the intentions of America's Founding Fathers, exposing a constitutional tax loophole. The importance of tariff revenue from imports until 1913 along with the concomitant regional concentration of U.S. exports means *de facto* export tariffs played

an active role in U.S. fiscal history for the country's first 125 years. Unfortunately, constitutional economists and public finance scholars have been silent about the tax loophole and its consequences.

We believe that this silence traces in part, if not wholly, to the intimidating nature of international economists' explanation of tariff symmetry. To lower this barrier, our paper has demonstrated that symmetry can be analyzed in a straightforward supply and demand setting. This reduces the "cost" of examining the first 125 years of the U.S. constitutional experience. The simplification represents a long-overdue step forward.

Notes

1. We thank Cecil Bohanon, Mark Brandly, James Dunlevy, William Hutchinson, and Alex Tabarrok for their comments and suggestions. We remain responsible for any errors.
2. Telephone: (765)-285-5370; fax: (765)-285-8024.
3. Formal development of the tariff symmetry proposition owes to Lerner (1936).
4. See Nobel Laureate James Meade's 1952 classic, *The Geometry of International Trade* for a quintessential example of these diagrammatics.
5. Cotton and tobacco accounted for almost half of all U.S. exports between 1820 and 1860, while cotton, tobacco, and wheat comprised almost half of U.S. exports between 1866 and 1894. Data on tax revenue and the composition of exports come from the United States Department of Commerce (1975).
6. Most economists and historians explain the pre-civil war "tariff issue" in terms of the South paying higher prices for imports. This ignores the fact that the import tariff had consequences similar to those the export tariff prohibition clause was intended to prevent. Interestingly, the foremost antebellum spokesman for southern interests, John C. Calhoun, never argued that the U.S. Constitution's tariff clauses were flawed. Rather, Calhoun argued that lawmakers misinterpreted the U.S. Constitution to permit import tariffs for *protective* purposes rather than solely for *revenue* purposes. For Calhoun, unconstitutional import tariffs produced unconstitutional *de facto* export tariffs. For a full statement of Calhoun's position, including a statement of the symmetry proposition *circa* 1829, see his "Exposition and Protest" in Lence (1992).
7. This is not to suggest that economists ignore connections between exports and imports. For example, it is common to see the idea that U.S. import tariffs evoke retaliatory foreign import tariffs. However, tariff symmetry is *not* about retaliation. Likewise, it is common to see the idea that U.S. import tariffs, by reducing foreigners' dollar earnings, reduce U.S. exports. But symmetry is *not* an income effect either. Symmetry is a relative *price* proposition.
8. Note that S_M and D_A are horizontal. This means the United States is assumed to be a price taker as an importer and exporter. The substance of our exposition is unaffected if the United States has price-making capabilities as an exporter or importer. A price-taking assumption keeps the analysis from becoming ensnared in optimum tariff issues.
9. Collecting a tariff in both A and M would necessitate using both diagrams simultaneously. This unnecessarily complicates the symmetry exposition. That tariffs must be collected in A or in M follows from the export dimensions and import dimensions that underlie the supplies and demands for imports and exports, a fact that is uniformly ignored in standard supply and demand explanations of tariffs. This oversight does not plague offer curve analysis of tariffs; see Clement, Pfister, and Rothwell (1967: 132–135).
10. Note that the gross price foreigners pay for A is unaffected by the tariff. The economic incidence of the tariff is entirely on U.S. exporters.
11. As was the case with tariffs collected in A, there are foreign exchange rate repercussions of either tariff. A balance of trade deficit emerges at the initial exchange rate, leading to a rise in the dollar price of foreign currency. Again, however, symmetry is unaffected. The exchange rate adjustment restores trade balance equilibrium at a reduced level of trade relative to the pre-tariff situation.

References

- Carbaugh, R. (1998) *International Economics*. Cincinnati, OH: South-Western.
- Clement, M., Pfister, R., and Rothwell, K. (1967) *Theoretical Issues in International Economics*. Boston: Houghton Mifflin Company.
- Gerber, J. (1999) *International Economics*. Reading, MA: Addison Wesley Longman.
- Husted, S., and Melvin, M. (2001) *International Economics*. Reading, MA: Addison Wesley Longman.
- Krugman, P., and Obstfeld, M. (2000) *International Economics: Theory and Policy*. Reading, MA: Addison Wesley Longman.
- Lence, R. (ed.) (1992) *Union and Liberty: The Political Philosophy of John C. Calhoun*. Indianapolis: Liberty Fund.
- Lerner, A. (1936) "The Symmetry of Import and Export Taxes." *Economica* 3: 306–13.
- Meade, J. (1952) *A Geometry of International Trade*. London: George Allen and Unwin.
- Pugel, T., and Lindert, P. (2000) *International Economics*. New York: Irwin McGraw-Hill.
- United States Department of Commerce (1975) *Historical Statistics of the United States, Colonial Times to Present*. Washington, D.C.: Government Printing Office.
- Yarbrough, B., and Yarbrough, R. (1997) *The World Economy: Trade and Finance*. Fort Worth, TX: The Dryden Press.