# Macroeconomic Policy and the Question of Tariffs

by

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## Abstract

The question of tariffs and macroeconomic policy is a perennial subject for debate, and never more so than at the present time. This paper seeks to correct a number of miscalculations and misunderstandings about the topic, prevalent in both the policy debate itself and in academia.

## 1. Introduction

In the conference volume published after the *Keynes and Public Policy* conference in Toronto in 1986, organized by Omar Hamouda and myself (Hamouda & Smithin 1988), there was a paper by our York University colleague Bernard M. Wolf[1] and Nicholas Smook entitled 'Keynes and the question of tariffs' (Wolf & Smook 1988).[2] This is the inspiration for the present paper.

Here is what Wolf & Smook (1988, 169) had to say when introducing their own paper:

> It was fitting for the conference to address Keynes's views on tariffs since there is a distinct possibility that a new wave of protectionism reminiscent of the period 1930-3 may soon be unleashed.

Well, they could probably have said the same thing forty years later (in early 2025) given the announced plans/policies of the incoming administration in the United States at the present time. Notice that in the language of economists, 'protectionism' is usually regarded as a bad thing - a 'wave' of it is about to be 'unleashed', and so forth. But is this true, either in the 1930s, 1980s, or now? Like most things it depends on one's point of view.

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[1] Bernie Wolf also played a major role on the committee responsible for the local arrangements for this very large international undertaking.

[2] In retrospect it is remarkable how this paper (and very many others presented at that conference) not only dealt expertly and interestingly with the various issues in macroeconomic theory and policy that had come up in the fifty years since Keynes, but also unerringly foreshadowed many of the developments in the five decades since. It was the first major initiative of this kind that either Omar or I had attempted .

A 'tariff' is usually understood to be a tax, which can be '*ad valorem*' or 'specific', on imports into the domestic economy. The proximate objective is thus to 'protect' domestic industry, that is, to allow them to be more competitive. An important point made by Wolf & Smook was that the Cambridge economist John Maynard Keynes had started life as an ardent 'free trader' - meaning that he was opposed to protectionism. Later in his career, however, during the economic and financial crisis of the early 1930s, he famously reversed his position. Wolf & Smook (1988, 169) describe the views of the early free-trade Keynes as follows:

> Keynes argued for free trade on two counts: … the gains from … [trade] based on comparative advantage, and on the belief that 'an artificial interference with imports must … interfere … with exports or involve an artificial stimulation for capital to leave the country'.[3] Keynes did recognize exceptions … in the cases of dumping, infant industries, overdependence on foreign suppl[y] … the encouragement of … socially desirable industries … [like] … agriculture, … and to obtain trade concessions …

The authors then continue (Wolf & Smook 1988, 169-70):

> It was the issue of the effects of a tariff on employment over which Keynes disagreed most emphatically with protectionists … he strongly argued that ' … if there is one thing that protection cannot do, it is to cure unemployment … There are some arguments for protectionism based upon its securing possible but improbable advantages to which there is no simple answer. But the claim to cure unemployment involves the protectionist fallacy in its crudest form.'

Keynes's apparent *volte face* in the early 1930s therefore did cause something of a stir among professional economists, and in the political world, at the time.

The purpose of this paper will therefore be to try to sort out (in a somewhat more rigourous fashion than one usually sees in the contemporary media) what exactly are the rights and wrongs of the debate over the effects of tariffs. One thing that immediately catches the eye in the two paragraphs from Keynes is that the arguments seem to be a very awkward mélange of both microeconomic and macroeconomic elements. Moreover, they are not entirely consistent with one another. This theme will immediately be taken up in section 2 below. Sections 3 and 4

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[3] The quotes from Keynes are taken from volume XIX of the *Collected Writings* (Keynes 1973).

then go on to specifically discuss the *macroeconomic* arguments which are ultimately decisive. Section 5 summarizes the results and discusses what the implications are for political economy. Section 6 offers some conclusions.

**2. Microeconomics *Versus* Macroeconomics**

In the early years of the twenty-first century my colleague David Barrows and I (with others) were responsible for teaching economics to first year graduate students in the MBA (Masters of Business Administration) program at the Schulich School of Business, York University, Toronto. The 'powers that be' then suddenly decided that the whole of economics should be condensed, into a single one-semester course. From my point of view this decision made no sense at all neither in terms of educational principle nor pedagogy, nor above all for the goal of training competent business executives who might be able to contribute to the nation's economic prosperity. Nonetheless, '[ours] not to reason why, [ours] but to do and die', as the saying goes.[4] Therefore, Barrows and I wrote a textbook *Fundamentals of Economics for Business* (Barrows and Smithin 2009) intended to service this course. Our book at least went into two editions.

As already hinted at in the introduction, the two main divisions of economics are so-called 'microeconomics' which roughly speaking deals with individual firms and markets, and 'macroeconomics', dealing with the big picture. Each of these was supposed to be covered in six weeks! A particularly difficult problem for us was to decide where the discussion of international economic relations should go. In the end we put in three chapters in total on the international economy. The first chapter, in the microeconomics section, was entitled 'The Global Economy I: The Debate over Free Trade'. Then there were two more chapters in the macro section, namely

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[4] From Tennyson's 'Charge of the Light Brigade' a poem about a futile and deadly military action during the Crimean War of the 19th century.

'The Global Economy II: The Balance of Payments and Exchange Rates', and 'The Global

Economy III: Some Topics in International Finance'. In those days, it should be noted, it was

more-or-less mandatory to use the expression 'global', somehow, somewhere, when talking

about international affairs. This arrangement seemed to us to be very unsatisfactory. It was

certainly only when we got to the macro part, for example, that it was possible to talk at all

sensibly about the current issues of the day, including the question of tariffs as an instrument of

macroeconomic policy. As far as tariffs themselves were concerned a big problem was that most

of the actual technical economic discussion had to be in the micro section. As in the two quotes

from Keynes above, the micro and macro components seem always to be conflated or confused,

and the discussion inevitably lacks clarity.

In the micro chapter ('The Global Economy I'), one of the objectives was to present the

standard argument for free trade based on comparative advantage, as already mentioned in the

quote from Wolf & Smook above. We imagined two hypothetical economies which trade with

each other and can each produce two commodities, 'wheat' and 'steel'. These were meant to

stand for agricultural products and industrial products generally. The point about comparative

advantage is to look at the domestic opportunity cost of shifting resources from one line of

production to another. On this basis, if wheat (say) is relatively cheaper to produce in the

domestic economy than is steel then the domestic economy is supposed to specialize entirely in

wheat and trade with the other economy to get the steel they need. Both economies are then

thought to be somehow better off.

But it is quite obvious, or so it has always seemed to me, that this is all based upon highly

abstract reasoning which tends to fall apart as soon as any considerations of practical common

sense are taken into account, The first quote from Smook & Wolf above lists a whole string of

'exceptions to the rule' of free trade that were identified by Keynes even in the days when he was a strong advocate. But surely from a logical point of view each of them taken singly - let alone cumulatively - undermines the whole argument? Somehow this did not seem to bother Keynes at the time, nor has it worried any of the thousands of textbook writers before and since. We can immediately give a simple and straightforward illustration. Suppose that at some point our two partner countries eventually have a serious dispute that ends up with war breaking out. What then? The wheat producing country will have no problem in feeding itself and will also presumably have at least some stocks of steel built up from past trading, which they can turn into weapons (the opposite of 'swords into plowshares'). Clearly, however, these will run out after a while. The steel producing country will have no problem with producing armaments but will only have a limited stock of food, which will also run out sooner or later. Who is going to win? Who knows? This is the kind of thing that is emblematic of the real practical importance of each of the various caveats and exceptions listed in such a dry scholarly fashion in the textbooks.

The usual microeconomic analysis of the effects of a tariff, imposed on imported products competing with those of an individual domestic industry, is usually carried out *via* a diagram such as that in Figure 1. This purports to show the effects of the tariff on price, output, and income distribution in the domestic economy. Price, *P,* is shown on the vertical axis and quantity, *Q*, on the horizontal axis. Before the tariff, the good is supposed to be trading at the 'world price' *Pw*. Domestic consumption of the good is at *Qd1* but domestic production is only at *Qs1*. Imports are therefore equal to *Qd1 – Qs1*. After the tariff, *T*, is imposed the price paid by domestic consumers rises to *Pw + T*. More domestic firms can be competitive at this price (they are 'protected'), such that domestic production increases to *Qs2*. At the same time total demand

falls to *Qd2* because of the higher price. Therefore, imports fall to *Qd2 – Qs2*. Who gains and

who loses from this change?

*Figure 1*: The Effect of a Specific Import Tariff on the Domestic Industry
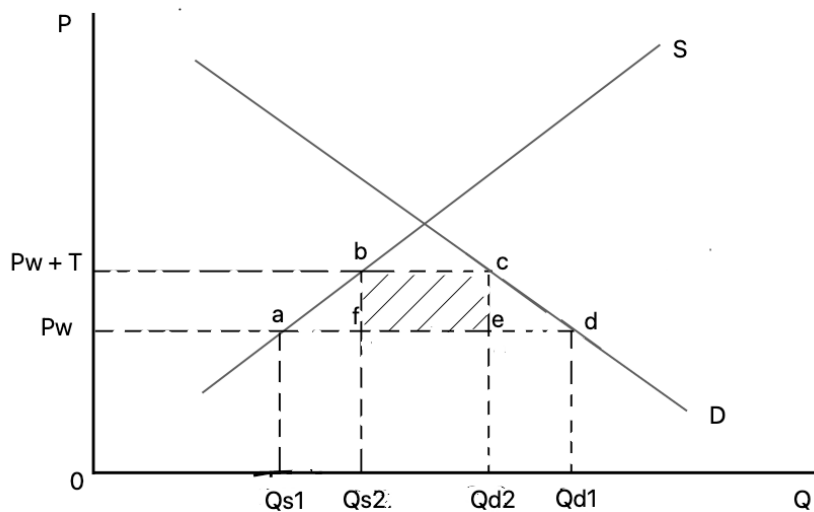


The purpose of the tariff was to protect domestic firms and increase their output. The

domestic firms do, in fact, gain so-called 'producer surplus' equal to the triangle *a,b,f*, which is

the area in the diagram below the supply curve, above the initial price, and below the final price.

This sum is often interpreted as the cost to 'society as a whole' from inefficient production in the

domestic industry. However, from the point of that industry and their workers it is money in their

pockets. The foreign firms, meanwhile, pay tax revenue equal to the shaded rectangle *b,c,e,f*

which is a cost to them, but a benefit to the domestic government itself. *If* the money is well

spent this is presumably a benefit to the domestic society as well. There thus remains only what

is sometimes called a 'deadweight loss' of consumer surplus, the triangle under the demand

curve *c,d,e*. This is a loss of consumer satisfaction that is supposed to occur from consuming less

of the item at a higher price and which is not compensated for by an increase in revenue to either

domestic firms or the domestic government. It is very important to note that this is, of course, purely notional, it is *not* an actual sum of money which changes hands. It is therefore difficult to imagine anyone in the 'real world' getting too excited about this. (Unless, I suppose, they are panicked into it by propaganda from politicians and the media, as we do often see in the present day). This, therefore, is what the case against tariffs amounts to, when looked at from the microeconomic point of view. As with the idea of comparative advantage, it may well not seem all that convincing in the world of practical affairs and *realpolitik*.

One thing that the analysis has done, however, is to unambiguously establish the equivalence of tariffs and *taxes*. This suggests that, as indeed seemed to be hinted at by Keynes even when he was a free trader, that the most significant impact of tariffs might be like that of the macroeconomic effect of taxes.

## 3. Alternative Explanations for Economic Growth

Therefore, turning now to the crucial macroeconomic issues, it will be useful first to briefly sketch out the two main alternative approaches to the theory of economic growth, and the consider their implications for international economic relations. These are (1) a '*Keynes-type*' theory which validates the three important propositions - that investment drives saving, that fiscal expansion leads to growth, and that a *trade surplus leads to growth*[5] – and, alternatively, (2) a '*Classics-type*' theory which suggests more-or-less the opposite (Smithin 2022, 61-66).

To illustrate the two alternative equations for growth recall that the definition of real value-added, on a flow of funds basis,[6] is as follows:

(1)                          $Y = C + I + G + (EX - IM)$.

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[5] Note the emphasis.
[6] The purpose of making this assumption is to ensure so-called 'stock-flow consistency' (at least in theory) in the national accounts.

Where $Y$ = real GDP, $C$ = real consumption expenditure, $I$ = real 'investment' expenditure, $G$ = real government expenditure on goods and services, and $EX - IM$ = real net exports.[7]

　　　But here we are primarily interested, not in the level, but in the growth rate of real GDP given by $y = (Y - Y_{-1})/Y_{-1}$. From this starting point, the Keynes-type growth equation can be derived by the straight-forward device of specifying a lagged consumption function. If $T$ now stands for total tax collection we could, for example, write:

(2)　　　　　　　　　　$C = C_0 + c(Y_{-1} - T_{-1})$,　　　　　　　　　　$0 < c < 1$

where $C_0$ is the intercept term in the consumption function, and $c$ is the marginal propensity to consume out of (lagged) disposable income.

　　　Next, define the 'total autonomous expenditure of the private sector', $X_P$, as:

(3)　　　　　　　　　　$X_P = C_0 + I$.

Then, using equation (1) in (2), dividing through by the lagged level of real GDP, re-arranging, and noting that $c = 1 - s$ (where $s$ is the marginal propensity to save), we can obtain:

(4)　　　　　　$Y/Y_{-1} - (Y/Y_{-1})[X_P/Y + G/Y + (EX - IM)/Y] = (1 - s)[1 - (T_{-1}/Y_{-1})]$.

The ratio $T_{-1}/Y_{-1}$ is the average tax rate $t$, and let $g = G/Y$, $x_P = X_P/Y$ and $ex - im = (EX - IM)/Y$. The ratios $g$, $x_P$, and $ex - im$ are therefore government spending, autonomous private sector expenditure, and the trade surplus respectively, as percentages of GDP. Thus:

(5)　　　　　　　　$(1 + y)[1 - x_P - g - (ex - im)] = (1 - s)(1 - t)$.

　　　Finally, taking natural logarithms, using approximations such as $ln(1 - s) = -s$, and re-arranging, this will yield the Keynes-type growth equation we have been looking for. This is:

(6)　　　　　　　　　　$y = (x_P - s) + (g - t) + (ex - im)$.

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[7] These are the conventional symbols used in the textbooks. Elsewhere (*e.g.*, in Smithin 2025a) I have discussed in more detail the different interpretations often placed on these magnitudes in Keynesian and Classical economics respectively.

In my *Beyond Barter* (Smithin 2022, 63), I summed up these important results by saying real

GDP growth will occur when any of the following occurs:

[A]  … there is a trade surplus as a percentage of GDP (hence the expression 'monetary mercantilism'),

[B]  … the total autonomous spending of the private sector as a percentage of GDP is greater than the marginal propensity to save,

[C]  … there is a primary budget deficit as a percentage of GDP.

These are not just accounting identities but genuine causal relationships. The ultimate

exogenous variables are the parameters of monetary and fiscal policy at home and abroad,

productivity shocks, national and international liquidity preference, *etc.* Equation (6) does not

mean that growth cannot possibly occur in the presence of a budget surplus, a trade deficit, or a

high propensity to save. It does mean, however, that if there is to be growth, at least one of the

above terms must be positive, and large enough to outweigh the other two. This statement, while

unassailable in terms of the algebra, runs directly contrary to the advice often given to

policymakers. They are usually told to aim for trade balance, or to pursue a 'sound' fiscal policy,

and so on.

We should just pause for a moment to ask how the causal growth equation above, relates

to the familiar 'injections equal withdrawals' version of the GDP identity? This is:

(7) $$I \;+\; G \;+\; EX \;=\; S \;+\; T \;+\; IM.$$

Dividing through by $Y$ and introducing new notation such that $inv = I/Y$ (investment as a

percentage of GDP), and $sa = S/Y$ (the average propensity to save), this yields:

(8) $$0 \;=\; (inv - sa) \;+\; (g - t) \;+\; (ex - im).$$

Comparing this expression to the growth equation we can see that they are indeed consistent with

one another. The reason is that the terms *inv* and *sa* are not the same as $x_P$ and $s$. The point is

ultimately that while it is true that the sectoral balances must always sum to zero this is not so for the growth equation.

Equation (6) immediately gives us preliminary answers to a couple of very important questions. Firstly, why it is that many people argue that aiming for a trade surplus would be a good thing. They are not wrong, in principle. If a trade surplus can be achieved it will indeed lead to higher growth, lower unemployment, and higher real wages. Secondly we can make a start in considering the issue of whether the imposition of tariffs, protectionism in the conventional sense, can assist in achieving these goals. There is an immediate problem. One thing that the analysis of Figure 1was able to achieve was to show decisively that a 'tariff' is effectively a 'tax'. It provides tax revenue to the central government of the domestic economy and raises prices in the industry in which it is imposed. Plausibly, then, an imposition of tariffs on a wide scale at the macroeconomic level will *increase* the average tax rate, *t*. But, if so, it is clear from equation (6) that this is going to *reduce* the growth rate of real GDP and thereby *increase* unemployment and *reduce* real wages. This is not, presumably, the sort of result that those wishing to protect domestic industry would have been looking for. It might perhaps be argued that there could be some offsetting effect on the trade balance [*i.e.*, the second term in equation (6)], as just discussed, but this neglects the possibility (or rather probability) of exchange rate adjustments. As always, we should remember that the issue is not so much whether a trade surplus as a percentage of GDP will lead to economic growth. There is no question that that is true. The real question is how that surplus is to be achieved.

Given this disturbing result, at least from the conventional bureaucratic point of view, that an increase in total tax/tariff collection as a percentage of GDP will reduce economic growth and increase unemployment, we need to briefly comment again on current affairs with respect to

the incoming administration in the USA (2025-2029), and to their announced or supposed attitude to tariffs. It is often argued that in their previous term in office (2017–2020) the tariff policy was a success. How can this be? There is a simple answer, which is that although tariffs were indeed increased this was more than offset by reductions in other taxes elsewhere.

For the purposes of comparison with the Keynes-type approach to economic theory (which, to be clear, is not in favour academically at the current time, even if I personally am confident of its validity) we can also derive a generic version of the standard 'Classics-type' theory by going back to the Harrod-Domar literature of the late 1930s and 1940s, and to Hicks's *A Contribution to the Theory of the Trade Cycle* (Hicks 1950). The significance of this literature, in historical context, was to overturn the emphasis that there had been in Keynesian economics on the relation between output and employment (and unemployment), the human dimension if you will, and to return economic theory to its 'classical' concern with the abstract notion of so-called 'capital accumulation'. This although no-one, before Keynes or since, has ever been able to explain what this mysterious thing called 'capital' really is!

Implicit in Keynesian theory was a 'production function' in the form of $Y = F(N)$, or $Y = AN$, where $Y$ is the level of output, $N$ is the level of employment, and $A$ is the average product of labour. This makes perfect sense, as these are all measurable magnitudes which do exist and can simple be read off from the national accounts. Contrary to the views expressed in the mainstream textbooks, this procedure by no means neglects the contributions of machines, computers, raw materials, land, or what have you. These are simply rolled up either in the functional form or in the coefficient $A$. It is also immune to any claims that automation, robots, artificial intelligence, or whatever, will rend the human factor obsolete. There is always going to be a figure quoted in the national accounts for total employment (this, of course, will be dependent on the bureaucratic

definitions of what constitutes employment – hours worked, full-time *versus* part-time, *etc.*) It does not matter in the least what the job titles are. They can be computer programmers, professors, the bureaucrats themselves, media personalities, line cooks, or salesclerks. Neither does it matter (all that much) what they actually do. The main point is simply that they exist, they have to be paid, and if the economy is to function it will have to generate enough output to be able to do this. Regardless of their individual contributions it goes without saying, of course, that therefore an increase in the aggregate '*A*' coefficient, whether this is caused by machines, computers, or anything else, is unambiguously good for the economy.

Harrod, on the other hand, used a version of the so-called the '*AK*' production function:

(9) $$Y = AK. \hspace{6cm} A > 0$$

But this is an expression, contrary to $Y = AN$, which is extremely difficult (in fact impossible) to make sense of because of insuperable difficulties in defining the capital stock, '*K*'. The coefficient $A$ is now supposed to stand for the marginal product of capital which, however, is going to be meaningless unless we can define what the capital stock is.

To explain, these arguments relied not only on the assumption that it is possible to quantify the capital stock, but also that all firm spending on 'investment' adds directly to this stock. In other words, they presume that none of it misfires, or is simply disguised consumption spending, such as redecorating the boardroom, or buying a corporate jet. In reality a very a large part of supposed 'investment spending' (better to call it 'firm spending') is precisely of this nature and adds to monetary demand just like anything else.

Nonetheless, if we are willing to make the assumptions in equation (9) for the purpose of argument – which is exactly what the literature of the supposed 'neoclassical synthesis' in the mid-twentieth century was indeed prepared to do - we can come up with two further expressions

that logically follow. These are, namely, a (spuriously) precise definition of capacity utilization in the form of a capital/output ratio, and also the so-called 'accelerator' investment function, both of which simply slide over the basic problem of measurement of the capital stock. These are:

(10) $\qquad\qquad\qquad O = K/Y \qquad\qquad\qquad\qquad\qquad\qquad\qquad (= 1/A)$

(11) $\qquad\qquad\qquad I = K_{+I} - K$

And the same writers also typically used a proportional saving function:

(12) $\qquad\qquad\qquad S = sY.$

Next, use equations (10), (11) and (12) in (7) to obtain:

(13) $\qquad\qquad\qquad O(Y_{+I} - Y) = s(Y - T) + (T - G) + (IM - EX).$

Divide through by $Y$ and reverting to the in lower-case notation used above, this gives:

(14) $\qquad\qquad\qquad y = s(1 - t)/O + (t - g)/O + (im - ex)/O.$

This is the 'Classics-type' growth equation. However, when written out in full like this it gives very strange results. Equation (14) says not only that an increase in the savings propensity leads to growth, but also that a budget *surplus* and a trade *deficit* both lead to growth. The argument that savings are needed for growth is made on familiar grounds. This is not accurate, but traditionally it had at least some superficial plausibility. However, there is no real rationale for the other two propositions.

It is true that the conventional wisdom on economic policy does not actively argue for a trade deficit, nor for a budget surplus *per se*. It simply takes for granted that budget balance ($g = t$) is a 'good thing' and that trade balance ($ex = im$) is also good. As mentioned, the standard argument for free trade is that both sides benefit from the supposed 'gains from trade' even when exports and imports are equal. What tends to happen in actual policy discussion, therefore, is that the final two terms on the right-hand side (RHS) of (14) simply disappear from the discussion.

What emerges is nothing other than the so-called 'supply-side' argument for economic growth, which came to prominence in the public policy debates of the 1980s. The following expression, in fact, corresponds to the supposed 'natural rate' of growth that was enthusiastically canvased by the supply-siders of forty years ago.

(16) $$y = s(1 – t)/O.$$

They argued that the rate of economic growth can only be improved in three ways, by (a) more 'thrift', (b) productivity improvements, or (c) tax cuts to provide incentives.[8] But no argument was ever offered as to why the seemingly perverse logic of actual budget *surpluses* and trade *deficits* should not apply. Comparing equation (6) the Keynes-type approach, and (16), exposes the underlying problems with the classical approach to thrift. The latter is a *reductio ad absurdum*. The underlying worldview is that saving is always 'good', that it is the only route to virtue, prudence, and prosperity. But if so, the logical problem has always been why should we not take this idea to its logical conclusion and save 100% of money income? Unfortunately, in that case there would be no spending at all - and no economy! To firmly establish their favoured views about economic progress it should surely have been incumbent on the supply-siders, mainstream economists, Austrians *et al.*, to come up with some sort of solution to the paradox. This, however, has never been convincingly done. Simply eliminating the offending terms does not achieve this.

## 4. An Open Economy Version of the Alternative Monetary Model (AMM) with a Sovereign Currency and Flexible Exchange Rates

We can now set out a complete open-economy version of the alternative monetary model (AMM) of Smithin (*e.g.*, 2013, 221-33) in equations (18) through (24) below. One useful way of

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[8] The Keynes-type approach also recommends tax cuts, but for different reasons.

thinking about the international economy is as a set of competing currency networks, each with its own central bank. Exchange rates between the different currencies can either be *floating* (flexible) or *fixed*. It follows that there are four main alternative configurations for international economic relations as shown in Table 1.

Table 1:  *Alternative Configurations for International Economic Relations*

(i)    A Floating (or Flexible) Nominal Exchange Rate
(ii)   A 'Fixed but Adjustable' Nominal Exchange Rate (sometimes called a 'Crawling Peg')
(iii)  An Irrevocably Fixed Nominal Exchange Rate (or 'Hard Peg')
(iv)   A Currency Union

Also, if we define the nominal exchanges rate $E$ as the domestic currency price of one unit of foreign exchange, then another important concept, the real exchange rate $Q$, is defined as:

$$(17) \qquad\qquad Q \; = \; EP/Pf,$$

where $P$ is the domestic price level and $Pf$ is the foreign price level.

In the case of flexible exchange rates, the nominal exchange rate between any two national currencies is proximately determined by their relative demands and supplies in the international financial markets. In the case of a fixed exchange rate, the relationship is kept within narrow limits according to some international agreement or convention. The domestic central bank must stand ready to take whatever is needed to force the nominal value of the currency to remain within bounds, such as buying and selling their own currency as required.

As an alternative to the 'extremes' of an irrevocably fixed exchange rate regime and a pure floating rate regime, there are also advocates of some sort of compromise between the two in the guise of a 'fixed-but-adjustable' exchange rate regime. [9] This is sometimes also called a 'managed float' or 'crawling peg' or something like that.

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[9] Extreme is not really the right word here, however. A floating or flexible exchange rate is a viable/workable system, but an irrevocably fixed exchange or 'hard peg' is not. Such a system is unstable and will inevitably end in a foreign exchange crisis.

Finally, there is another point of view which unfortunately became popular in the late twentieth and early 21st centuries (unfortunate because of the dire practical consequences) involving a doubling down on one of the extremes. That is to push the concept of fixed exchange rates to its logical conclusion, and question whether there is any merit in different political jurisdictions having separate currencies in the first place. This leads to the advocacy of a currency union between different states that nonetheless theoretically retain separate national governments. The result is simply a mess which ultimately benefits no-one except perhaps for the international/globalist bureaucrats responsible for administering the system.

In an economy with a floating exchange rate the effects of most policy changes (including the effects of changes in tariffs/taxes) and other macroeconomic changes will be qualitatively the same as those in the equivalent closed-economy case. This is a case of full monetary sovereignty for the domestic economy. In the case of a fixed-but-adjustable exchange rate the results will also resemble those of the closed economy, which again allows there to be some domestic control over monetary and fiscal policy. In both case the real exchange rate can adjust in whatever direction is necessary to accommodate policy changes.

These considerations completely overturn the old idea, derived from the Mundell-Fleming model of the 1960s, that monetary policy can be assigned to a floating and fiscal policy to fixed exchange rate. In the light of both theoretical considerations and the practical experience of the past sixty years that notion has been proven to be entirely misleading.

We should be clear that the results to be derived below are applicable mainly to the first configuration discussed above namely, (i) floating exchange rates. As already mentioned, due to technical reasons of international finance (specifically, the continued existence of a currency risk premium) results in the case of a fixed-but-adjustable exchange rate will also be qualitatively

similar to those of the flexible rate regime.[10] The other two configurations, (iii) and (iv), however, are unstable and will ultimately collapse. There is not much point in discussing tariff policy, or macroeconomic policy generally, in either case. Whatever is done, or tried, is not going to work anyhow. (Basically, these systems are set up to fail.)

With these preliminaries out of the way, the full open-economy macro system is going to be that set out in equations (18) through (24). Once again recall that tariffs enter the system via the variable '$t$', total tax collections as a percentage of GDP.

(18) $\qquad\qquad y = e_0 + e_1 k - e_2 q + (g - t),\qquad\qquad 0 < e_1 < 1, \ \ e_2 > 0,$

(19) $\qquad\qquad k = a - r - w_{-1},$

(20) $\qquad\qquad p = p_0 + w_{-1} - a,$

(21) $\qquad\qquad w - t = h_0 + h_1 y - h_2 q,\qquad\qquad 0 < h_1 < 1, h_2 > 0,$

(22) $\qquad\qquad r = m_0 + m_1 r_0 - (1 - m_1)p,\qquad\qquad 0 < m_1 < 1,$

(23) $\qquad\qquad b = b_{-1} + e_2 q + (r - y)b_{-1},$

(24) $\qquad\qquad q = q_{-1} + r - r_f + z_0 + z_1 b_{-1},\qquad\qquad z_0 > 0, z_1 > 0.$

The endogenous variables in the system, seven in all, are listed in Table 2.

Table 2:  *List of Endogenous Variables*

$y =$ the growth rate of real GDP,
$k =$ the natural logarithm of the aggregate profit mark-up,
$w =$ the natural logarithm of the average real wage rate,
$p =$ the inflation rate,
$r =$ the real prime interest rate,
$b =$ the foreign debt position as a percentage of GDP,
$q =$ the natural logarithm of the real exchange rate (the natural logarithm of $Q$)

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[10] Which begs the question of why bother with trying to fix the exchange rate at all, even temporarily? It seems like an unnecessary complication.

The exogenous variables may be conveniently grouped into three broad categories, involving policy changes, changes in real costs and productivity, and changes in market psychology, respectively. These are listed in Tables 3, 4, and 5.

Table 3:  *Exogenous Variables: Policy*

$g$ = government spending as a percentage of GDP,
$t$ = the average tax rate,
$r_0$ = the target for the real policy rate of interest as set by the central bank.

Table 4:  *Exogenous Variables: Real Costs and Productivity*

$m_0$ = the commercial bank mark-up,
$r_f$ = the foreign real interest rate,
$w_0$ = the natural logarithm of the base real wage rate,
$a$ = the natural logarithm of average labour productivity.

Table 5: *Exogenous Variables: Market Psychology*

$e_0$ = a measure of 'animal spirits', that is, net autonomous spending by the private
  sector of the domestic economy as a percentage of GDP,
$p_0$ = a measure of the state of liquidity preference in domestic financial markets,
$z_0$ = the intercept in the expression that explains the 'currency risk' premium in
  international financial markets, this is essentially a measure of international
  liquidity preference.

Finally, the given parameters of the system are shown in Table 5. The signs and magnitudes of these parameters are based on the logical requirements of the model, and on empirical plausibility.

Table 6:  *Parameters*

$e_1$ = the sensitivity of firm spending to profitability,
$e_2$ = the sensitivity of the trade balance as a percentage of GDP to the natural logarithm
  of the real exchange rate,
$h_1$ = the sensitivity of the natural logarithm of the average after-tax real wage rate to lagged
  real GDP growth,
$h_2$ = the sensitivity of  the (natural logarithm of) the domestic real product wage to
  the (natural logarithm of) the real exchange rate,
$m_1$ = the pass-through coefficient in the monetary policy transmissions mechanism,
$z_1$ = the sensitivity of the currency risk premium to the real foreign debt position
  as a percentage of GDP.

Equation (18) again illustrates what we called above a 'Keynes-type' theory of economic growth. It suggests that the economy will grow (a) if firms are more profitable, (b) if there is an up-turn in 'animal spirits' (a spontaneous increase in the autonomous spending of the private sector as of percentage of GDP), (c) if the government is running a primary budget deficit as a percentage of GDP, and/or (d) if there is a trade surplus as a percentage of GDP.[11]

Equation (19) is a log-linear adding-up theory of income distribution. The (natural logarithm of) average labour productivity resolves into three components, the (natural logarithm of) the average/aggregate mark-up of business firms, the real rate of interest, and the (natural logarithm of) the average real wage rate.

Next, equation (20) explains inflation. Given endogenous money there is inevitably a significant cost-push component to inflation. However, inflation is also influenced such by things as liquidity preference on both sides of the money market. In this context the term $p_0$ is a composite variable that reflects the net effect of these money demand and supply parameters.

Equation (21) then exhibits a wage function which suggests that the (natural logarithm of) real wages will increase when the socio-political power of labour increases (for example, because of such things as legislation favourable to labour, or an increase in the rate of unionization, *etc*.). Real wages will also tend to increase in a growing economy - in this case because of the increased bargaining power of labour in such circumstances. The real wage rate will fall if the real exchange rate depreciates.

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[11]  The domestic economy will tend to shrink if the real exchange rate appreciates (making domestic goods less competitive). If $e_2 > 0$, the implication is that this effect is greater than any possible offsetting impact on domestic costs.

Equation (22) shows firstly that real interest rates in the marketplace will increase if the central bank increases its target for the real policy rate in pursuit of a tight money policy. On the other hand, the market real rate of interest will fall if the inflation rate increases. This last phenomenon is nothing other than the historical 'forced savings effect' which, in the twentieth century, came to be called the 'Mundell-Tobin effect' after two Nobel Prize winning economists (Smithin 2013, 185-6).

The final two equations, (23) and (24), illustrate the dynamics of the balance of payments and the real exchange rate, respectively.  Equation (23) describes the balance of payments situation, and therefore the consequent changes in the foreign debt position as a percentage of GDP, under a situation of flexible exchange rates. The debt position will worsen if a real appreciation causes the current account to deteriorate. It will also deteriorate if the real interest rate exceeds the rate of GDP growth, thereby exacerbating the interest burden on the foreign debt. Equation (24) describes how international capital flows affect real exchange rates. The real exchange rate will appreciate if the domestic real interest rate is greater than the foreign real interest rate *minus* the currency risk premium, and *vice versa.*

## 5.  Summary of the Results

Given the various arguments about stability and real interest rates as set out above we can now proceed to work out the equilibrium or steady-state solution. To focus specifically on the tariff issue, all the other exogenous variables may conveniently be set to zero. The system becomes:

(20) $$y = e_1 k - e_2 q - t,$$

(21) $$k = -r - w,$$

(22) $$p = w,$$

(23) $$w - t = h_1 y - h_2 q$$

(24) $$r = -(1 - m_1)p,$$

(25) $$-e_2q = (r - y)b,$$

(26) $$r = -z_1b,$$

Successive substitution will then reduce the system to just four simultaneous equations in $y, p, q,$ and $b$ (that is, in the real GDP growth rate, the inflation rate, the real exchange rate, and the foreign debt position as a percentage of GDP):

(27) $$y = -e_1m_1p - e_2q - t$$

(28) $$p - t = h_1y - h_2q$$

(29) $$-e_2q = -(1 - m_1)pb - yb$$

(30) $$-(1 - m_1)p = -z_1b$$

Next, totally differentiate equations (27) through (30):

(31) $$dy + e_1m_1dp + e_2dq = -dt$$

(32) $$h_1dy + dp + h_2dq = dt$$

(33) $$bdy + (1 - m_1)bdp - e_2dq + [(1 - m_1)p - y]db = 0$$

(34) $$-(1 - m_1)dp + z_1db = 0$$

In matrix form the system can be written as:

(35)
$$\begin{vmatrix} 1 & e_1m_1 & e_2 & 0 \\ h_1 & -1 & h_2 & 0 \\ b & (1 - m_1)b & -e_2 & [(1 - m_1)p - y] \\ 0 & -(1 - m_1) & 0 & z_1 \end{vmatrix} \begin{vmatrix} dy \\ dp \\ dq \\ db \end{vmatrix} = \begin{vmatrix} -1 \\ 1 \\ 0 \\ 0 \end{vmatrix} \begin{vmatrix} dt \\ \\ \\ \end{vmatrix}$$

The determinant, *DetB*, of the left-hand side (LHS) matrix *B* is as follows:

(36) $$DetB = e_2z_1(1 + e_1h_1), \qquad > 0.$$

Given the sign of *Det B* it is then possible to work out the results of the model in the form of

long-run multipliers as follows. These are:

(37)                    $dy/dt = -2e_2z_1/DetB$                                                $< 0$

(38)                    $dp/dt = e_2h_1z_1/DetB$                                             $> 0$

(39)                    $dq/dt = h_1(1-m_1)b/DetB$                                     $\gtrless 0\,?$

(40)                    $db/dt = 0/DetB$                                                    $= 0$

Looking at these results we can certainly see, firstly, that an increase in taxes, including

tariffs, as a percentage of GDP will (as we have already argued) reduce the growth rate of real

GDP. At the same time the inflation rate increases. The worst of all possible worlds?

Meanwhile, contrary to popular belief the effect on the real exchange rate is ambiguous.

It depends upon initial conditions. However, there is *no* long-run effect on the foreign debt

position! When all is said and done the trade surplus or deficit does not change due to the

appropriate exchange rate adjustments, apparently contrary to the beliefs of either the

protectionists or free traders. All we are left with is lower growth, higher unemployment, lower

real wages, and higher inflation. Not, perhaps, the results that would have been anticipated by

either camp in the partisan debate to start with?

## 6. Conclusion

What, then, are we to make of the outcome of all of the above discussion?

Firstly, what to say about the foundational proposition that to achieve a trade surplus as a

percentage of GDP is good for economic growth? Has this now disappeared altogether at the end

of the analysis? The answer to this question is no. To explain, I would like to refer to a recent

contribution by myself and Steven Pressman (Pressman & Smithin 2022b) in a volume edited by

ourselves entitled *Debates in Monetary Macroeconomics: Tackling Some Unsettled Questions* (Pressman & Smithin 2022a). The premise was to identify five of the most important of these 'unsettled questions.'[12]  We asked ten expert authors, drawn both from academia and also including practitioners, to defend or argue for both sides of each question, so that the audience would be able to make up their owns mind. The specific question about free trade/protectionism (Pressman & Smithin 2022b, 7) was as follows:

> *Should trade and financial policies always aim for a current account surplus?*

My own view is that the correct answer to this question is YES, while Professor Pressman took the opposite position. Earlier in the present paper I already explained my reasons for arguing in this way, but that is not the point that I wish to make here. The attentive reader will have noticed that this is a 'trick question' to some extent. The most important part of the sentence is evidently the innocuous little word 'aim'. Those responsible for policy should always *aim* to achieve a a trade surplus. As we have seen from equation (6) above, to the extent that a trade surplus as a percentage of GDP [$(ex - im) > 0$) is duly achieved and is greater than the other two terms in the equation, there will indeed be economic growth. Therefore, it is certainly a desirable policy goal. But there no implication that it will necessarily be sustainable for ever. Suppose, for example, that the other trading partners in the system also have exactly the same objectives? It is clearly quite possible (depending on the specific circumstances, and the specific policies that have been pursued) that exchange rate adjustments will eventually balance trade all round. But, no matter, the growth that has been achieved is not going to go away. It has already benefited the economy. Moreover, even if exports continue to equal imports ($ex = im$) for ever

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[12] The reference, and the choice of the number five itself, is obviously to John Stuart Mill's iconic *Essays on Some Unsettled Questions of Political Economy* (Mill 1844).

afterwards there can still be continued growth, indefinitely. This if one, or both, of the two remaining terms in equation (6) is positive. Both of these conditions themselves, of course, are precisely questions of policy.

To 'aim for' a current account surplus is therefore a 'no brainer'. On the other hand, to alternatively acquiesce in trade deficits over long periods of time, and still worse to pursue policies (perhaps designed for other purposes) that are likely to lead to trade deficits - is simply foolish. The damage is done, and the lost output and employment is never coming back. The outstanding example of the former type of policy stance is the supposed 'privilege' of a reserve currency nation to be able run a trade deficit 'forever'. And, an equally obvious example of the latter would be a high real interest policy, which might be justified on the need to fight inflation or some such thing. However misguided, these sorts of arguments have clearly been influential in North America over the past few decades, to the great detriment of the development of that continent and its place in the world economy.

On the other hand, the other important takeaway from our analysis is, to repeat, that even if we have established that a trade surplus is a good thing, it does not follow that the methods supposedly employed to achieve that result, such as tariffs, will necessarily work. The analysis of section 5 has shown unambiguously that if an increase in tariffs leads to an overall increase in the average tax rate (total tax collections as a percentage of GDP) the result will be detrimental to the economy. The growth rate will fall, the unemployment rate will rise, inflation will rise, and the average real wage rate will fall. Moreover, in the long run there will be no lasting effect at all on the final oreign debt position! The only way that these problems could be avoided would be by large offsetting tax cuts in other sectors of the economy.

In fact, the most reliable method of permanently improving the balance on current account is by financial or monetary means – a monetary policy of reducing the real rate of interest in the domestic economy. This leads to capital outflow, implying an increase in the foreign debt position, the counterpart of which is a current account surplus. In several previous contributions (*e.g*., Smithin 2018, 2022) I have called this a policy of 'monetary mercantalism', that is, as opposed to mercantilism as such. As long as the real interest rate is less that the economic growth rate, ($r < y$) in our notation, the process is convergent and therefore sustainable. One method of achieving this result would be the 'Smithin Rule' (so-called by others in the literature) which implies that the nominal policy rate of the central bank should always be adjusted one-for-one with the inflation rate. rending the real policy rate zero (Smithin 2025).

Surely the most absurd response to the imposition of tariffs would be to respond with 'retaliatory' tariffs, *i.e.,* to initiate a trade war? This is usually done in a spirit of 'pseudo-patriotism' as we might call it, flag waving, and seems to be done surprisingly often by those domestic politicians whose previous interests and inclinations were apparently entirely globalist. But one of the clearest results of our analysis has been that just stated - that the imposition of tariffs *per se* not offset by reductions in taxes elsewhere will damage the economy which imposes them - not anybody else. Those who talk in this way, therefore, are just 'shooting themselves' (and their economies) 'in the foot'.

## Acknowledgments

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