

The Dangers of Deficits: Reconsidering Outward-oriented Development

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Abstract

This paper examines the causes and consequences of trade deficits, a neglected missing link between the strategy of outward-oriented development (OOD) championed by the international financial institutions and the disappointing growth performance of developing nations during the globalization era. The body of empirical studies concerning the benefits of OOD constitutes one important venue of the globalization debate, but it has represented only the liberal tradition's conviction that OOD allows nations to expand trade volumes and thus accelerate growth. The mercantilist and structuralist traditions, which emphasize the dangers of relying upon foreign markets for goods and capital, directs our attention to another facet of OOD — its propensity to generate balance of trade deficits. The dangers of deficits can manifest themselves in both currency crashes, like those of the East Asian financial crisis of the late 1990s, and the debt-burdened stagnation that has plagued the remainder of the developing world over the past two decades.

This paper reviews past studies and presents new statistical analyses to demonstrate that (1) outward-oriented development strategies are as reliably associated with balance of trade deficits as with trade expansion, and (2) trade deficits dampen future growth at least as much trade expansion accelerates it. The previously documented problem of measuring OOD makes the case for its benefits difficult to sustain, but so too does a focus on GDP growth that omits any consideration of the longer-term welfare effects of the trade deficits it creates.

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For two decades mainstream economists and the international financial institutions have trumpeted the virtues of trade policy liberalization and the benefits of trade expansion. They have been supported by a range of empirical studies designed to show that economies more open to international trade and finance perform better than more sheltered ones.¹ Country after country in the developing world has responded by abandoning trade barriers, capital controls, and market regulation (Rapley, 1996).² The extent of the resulting globalization is captured by unprecedented levels in standard measures of economic openness. For example, the total of imports plus exports now approaches 50% of the GDP of the developing world, but is far higher in the showcase newly industrializing nations (NICs) of East Asia (World Bank, 1999: 222).

Ironically, as liberalization has triumphed, economic growth has all but disappeared from three quarters of the planet. As noted by a World Bank working paper (Easterly, 1999:2-3), "in 1960-79, the median per capita growth in developing countries was 2.5 percent while in 1980-98, it fell to 0.0%." Still, confidence in globalization as a path to growth was sustained by the spectacular performance of its leading practitioners, the NICs of East Asia. "And then previously stellar East Asia had a deep recession at the end of the period—median change in GDP per capita in 1998 of *minus* 3.7 percent." After a brief recovery, the export-dependent economies of southeast Asia have again shown negative growth in the first half of 2001 (Economist, 5 July 2001).

The collapse of the Asian miracle elicited no more unanimity in diagnosis among theorists than had its earlier success. Most liberal theorists seemed anxious to locate the failure in some combination of policy errors and irrational market forces that would leave intact the basic policy strategy of outward-oriented development (OOD) and its underlying theoretical rationale. Given the prominent role played by currency crashes, monetary forces quickly came under scrutiny, especially market manipulation by external agents, inadequate regulatory oversight, and unwise reliance upon fixed exchange rate policies.

Critics of globalization observe, however, that these accounts conveniently ignore the

¹ While the value of trade as an instrument of national development has become an article of faith, the appropriate state role to achieve its expansion remains contested. The precise identification of the winning combination of policies has been muddled by the controversial appearance of newly industrializing countries, especially in Asia, which intervene in the economy far too extensively to please liberals, yet rely far more on trade than is comfortable for mercantilists. Terms like "outward-oriented development" have frequently been employed to label such successful policy mixes, without being too specific about whether emphasis should be placed upon the actual expansion of international exchange (such as export growth) or upon policies that, among other (perhaps more significant) effects, *encouraged* such expansion (Greenaway, 1986). In turn, the identification of policies responsible for success engenders controversy since some commentators emphasized policy liberality (that is, the *absence* of barriers and incentives) and others emphasized the relative *balance* among incentives for exports, import-substitutes, and non-tradeables (Pritchett, 1996).

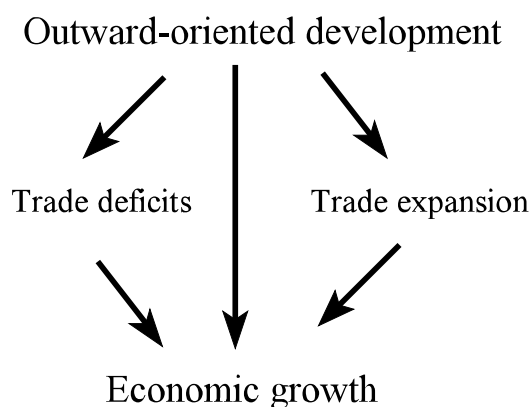
²The debt crisis of the 1980s was undoubtedly a pivotal factor in the wide-spread abandonment of strategies theoretically rooted in mercantilist and structuralist political economy. On the one hand, the crisis itself was seen as an indictment of the import substituting industrialization (ISI) strategies then practiced by most of the major debting countries, especially in Latin America. On the other, the desperate need of insolvent nations for funds to finance stabilization and structural adjustment gave international financial institutions considerable leverage to press their own liberal perspective on best trade practices (Rapley, 1996).

extent to which the earlier successes were built upon the very forces and policies now indicted as the reason for their failure (Moon, 2000a). Monetary deregulation triggered the capital inflows that fueled economic growth by giving free rein to international investors, even while fixed exchange rates reassured them that most of the exchange risk would be absorbed by the state. Moreover, if capital flows *had* been regulated and if exchange rates *had* been allowed to fluctuate, as many now prescribe, capital would have flowed elsewhere in the first instance and there would have been no Asian miracle to collapse. The observation that "one who lives by the sword dies by the sword" is not usually read as an endorsement of swordplay as a livelihood.

An alternative diagnosis of the Asian collapse centers on a condition that seems inextricably tied to the essence of outward-oriented development, namely the persistent and large trade deficits that preceded these very visible recent crashes. Despite achieving the goals established by dominant theory and encouraged by international financial institutions—to liberalize and to expand trade—even the nations most associated with OOD succumbed to the dangers of trade deficits. Furthermore, trade deficits have accompanied the stagnation nearly universal throughout the developing world during this period of globalization. At the same time that trade volumes (imports plus exports) have exploded, trade deficits (imports *minus* exports) have swelled to unprecedented levels as well—nearly 2.5% of GDP throughout the 1990s (UNCTAD, 1999:76-84), higher in the Asian NICs.³

This paper probes whether this combination of liberalized policy, the explosion of trade deficits, and economic crash can best be characterized as the exception or the rule. Were they simply an anomaly or are these three events linked more frequently than prevailing theories acknowledge? Specifically, are liberalizing nations prone to such trade deficits? If so, are trade deficits threatening to economic growth and predictive of crises? Is outward-oriented development responsible for the growth collapse of the globalization era?

These questions, captured by the left side of the accompanying diagram, have been largely overlooked as liberal theorists have focused on the trade expansion mechanism represented on the right side of the diagram. This paper revisits the dangers of trade deficits, a theme associated with both the oldest of theoretical traditions — mercantilism — and the newest — the anti-globalization movement heir to the anxieties of structuralist and dependency theories.



Trade deficits in orthodox theory

The neglect of trade deficits is surprising because exports and imports differ not only in their determinants but also in their effects. Yet, the balance of trade has usually appeared on the agenda of the economics literature only in periodic waves, the product of particular real-world events: the trade deficits that ushered in the debt crisis of the early 1980s, the worrying string of

³ This figure excludes China and oil-exporting countries.

U.S. balance of trade deficits since the late 1980s, and, most recently, the deficits that contributed to the Asian financial crisis of the late 1990s.

These historical episodes have intruded upon a reticence among economists to address the significance of trade deficits — or even to acknowledge their existence. Long ago, Adam Smith remarked that “Nothing ... can be more absurd than this whole doctrine of the balance of trade” (Smith, 1776 [1937]: 456 [bk.IV, ch. III, pt. 2 par. 2]). More recently, Heyne (1983: 705) reluctantly concedes that “Some things matter whether or not they exist. The Loch Ness monster is one. National trade deficits are another.”

“The balance of trade is not a concrete thing like a price or a load of merchandise. It does not obtrude upon untrained eyes. A definite analytic effort is required to visualize it and to perceive its relation to other economic phenomena.” — Joseph Schumpeter, *History of Economic Analysis* (1954: 352)

There appear to be at least two reasons for this inattention. First, trade deficits have no clear standing within classical economic theory. Indeed, citing H. Robert Heller’s (1973) “nine critical assumptions of the microeconomic theory of international trade,” Lippens (1997) points out, “Trade is always and instantaneously balanced in this classical trading world.” The essential impossibility of long-term trade deficits was established conclusively within the liberal tradition at least as long ago as David Hume’s “specie flow adjustment mechanism” a half a century before Adam Smith.⁴ The specie (i.e. capital) flow associated with trade imbalances expands the money supply in one economy and shrinks it in another, producing differential inflation that soon drives prices of tradeables to an equilibrium point at which supply and demand once again restores the balance between imports and exports.⁵ In the modern era of higher capital mobility, greater variety of financial instruments, and more sophisticated monetary policy, this equilibration can take a far more indirect path over a much longer time frame, but the logic of the monetary approach to the balance of payments, introduced in the 1960s, remains similar to the classic specie-flow mechanism of two centuries earlier (Taylor, 1990: chapter 1).⁶ Of particular interest to us, imbalances are temporary — so their limited consequences can be safely ignored — and largely outside the control of government — so their causes are of little policy interest.⁷

Second, trade deficits can mean very different things in different contexts. The source of this ambiguity, as Fisher (1990: 412) puts it, is that “balance-of-payments accounting serves as a tedious reminder that a current account deficit is simply the sum of the capital account surplus and

⁴ Hume’s (1752) contribution was pre-dated by Locke (1691), North (1961), and Gervaise (1720), among others.

⁵ Keynes’ (1936) general theory adds to the price mechanism the equilibrating shift in aggregate demand induced by the income effects of changes in money supply.

⁶ The monetary approach, developed by University of Chicago economists Mundell, Johnson, Laffer, and Frenkel and advanced by the IMF, has been sharply criticized for its unrealistic assumptions, namely “(1) full employment, (2) purchasing power parity in the law of one price, (3) aggregate demand and supply, and thus the balance of payments, are determined by the money supply and demand, (4) and general equilibrium exists in all markets.” (Tsanacas et. al., 2000)

⁷ This does not apply, of course, to the Keynesian view, but its application to growth issues in developing countries has been little noted in the empirical literature. The meaning of “temporary” is discussed below.

the loss of official reserves[, which] under a regime of flexible exchange rates ... is negligible." Taken as a whole, the ledgers always balance, though the individual components — however one chooses to divide or aggregate them — do register imbalances that can be described as surpluses or deficits. Heyne (1983: 356) thus observes that "All concepts of a trade deficit harbor concealed concerns and disguised political judgements" because "every claim of a disequilibrium rests upon an analytic exclusion" (p. 355).⁸

Since the balance between the current account and the capital account is an accounting identity, the causal connection between them is open to different interpretations, centering on two very different scenarios thought to produce trade deficits (Corden, 1994: chapter 6). One accords causal priority to the trade deficit, which is conceived as an indication of an excess of consumption plus investment over production. This requires an inflow of capital to "accommodate" the trade deficit and close the so-called "one gap" between desired investment and available domestic savings. Such a scenario, which implies over-consumption and/or under-saving, identifies the trade deficit as "bad" for long-term growth because it generates an accumulation of liabilities. If in the form of debt, future growth is reduced by the need to service it. If in the form of investment stocks, a flood of future claims creates future inflation and/or exchange rate devaluation and stagnation as capital flows reverse. The historical model is Latin America leading up to the debt crisis of the 1980's.

However, this conclusion must be tempered if the capital inflow supports growth-inducing investment rather than current consumption. This gives rise to the second interpretation, which accords priority to the surplus in the capital account. "Hence, the modern approach to modeling external disequilibria focuses upon the forces influencing the adjustment of an economy's stock of net foreign assets." (Fisher, 1990: 412) Under this interpretation, the trade deficit "accommodates" the capital account surplus, which is thus seen as "good" because it suggests the confidence of foreign investors and because it encourages future growth. Furthermore, the application of modern portfolio theory places the cross-border flow of funds into a framework of investor preferences for various classes of assets in which sizable imbalances can persist indefinitely.

This view has been especially popular in the U.S. since the massive annual American trade deficits began in the early 1970s, with seemingly small impact. The historical image associated with this view is the "Asian miracle" of the 1980s, in which capital inflows played a large role in sustaining growth and persisted as long as Asian investments were perceived to offer higher rates of return than were available elsewhere. A common view suggests that levels of gross domestic investment should adjudicate the "good" vs. "bad" interpretations, a judgement bound to be affected by the southeast Asian financial crisis, because all of the affected countries had savings and investment rates well above the global average.

Even when attention has shifted to currency crashes, in which large and persistent trade deficits are usually implicated and thus seemingly impossible to ignore, most liberals have located the problem not in the volume of trade deficits, but rather in the *composition* of the funds used to finance them. They have argued in the East Asian case, for example, that short-term capital exceeded long-term capital as the funding source, that debt played a larger role than equity, and

⁸ Furthermore, "not only is the deficit a mere symptom of the problem, it is also a symptom of the problem's resolution." (p. 359)

that assets and liabilities were mismatched (between home and foreign currencies, between terms of maturity, etc.). Thus, they advocate reform in the details of economic policy without questioning the reliance upon liberalization and capital inflows as an overall strategy.

The mercantilist and structuralist concern over trade deficits

Both trade and trade deficits are viewed quite differently across theoretical divides, however. Crowley et. al. (1998) observe, for example, that the same variable (total trade as a percentage of GDP) is used to measure quite different concepts in the economics and sociology literatures, even though both examine the effect of trade on growth. Liberal economists call it "openness", considering it a proxy for the absence of trade barriers. It signifies the free flows of knowledge, technology, and market signals that result in greater allocative efficiency as well as the free flows of goods that produce Ricardian gains of trade through comparative advantage. Thus, openness is good. Sociologists call it

"dependence", a proxy for domination, unequal exchange, extraction of surplus value, diminished self-sufficiency, vulnerability to external fluctuations, disarticulation and cleavages involving export-based elites. Thus, dependence is bad.

These differences reflect much older divisions in the evaluation of trade. They are especially sharp in relation to trade deficits, concern about which has historically been more associated with the mercantilist and structuralist theoretical traditions. That concern has a long history, especially if the more modern terms, "trade deficits and surpluses" are equated with their ancestral brethren, the "outflow and inflow of treasure". The obsession of classical mercantilists with the acquisition of "treasure" certainly has been much exaggerated by liberal interpreters such as Heckscher (1934), who parodied it as a "fear of goods," but a desire for an export surplus was undeniably a central mercantilist concern (Viner, 1948; Moon, 2000a). The most famous of the 17th century German mercantilists, Johann Joachim Becher made it the third of his "mercantilist rules and axioms that it is always better to sell goods to others than to buy goods from others, for the former brings a certain advantage and the latter inevitable damage." About 1628, Thomas Mun wrote, "...we must ever observe this rule: to sell more to strangers yearly than we consume of theirs..."¹⁰ This emphasis on trade surpluses is not found in the best known of the neo-mercantilists, List and Hamilton, but was resurrected later, especially during the Great Depression

"He shewed me a very excellent argument to prove, that our importing lesse than we export, do not impoverish the Kingdom, according to the received opinion; which, though it be a paradox, and that I do not remember the argument, yet methought there was a great deal in what he said" — Samuel Pepys, Memoirs, 29 February 1663

⁹ *Politische Discurs*, 2nd edition (Frankfurt, 1673), Part III chapter I, as translated and quoted by Heckscher (1934:116)

¹⁰ *England's Treasure by Forraign Trade*, originally published in 1664. Heckscher (1934:116) quotes "a few pages before" p.27 in chapter 4 of the 1895 Ashley edition. Taylor (1990:4) quotes the same passage, identifying it as coming from chapter 2.

of the 1930s.¹¹

Since an excess of imports over exports implies that current consumption can exceed current production, trade deficits have not usually been regarded as a problem from the standpoint of immediate welfare. Indeed, they enhance it. Instead, the principal concerns over trade deficits have revolved around three other flows associated with them.

First, a net import of goods corresponds to a net "export" of employment opportunities, an effect thought to be more or less coterminous with the deficits themselves.¹² Of course, in the Ricardian world, which *assumes* full employment, employment effects do not arise, but policy-makers, following first the classical mercantilists and later Keynes, have universally seen trade deficits and unemployment as inextricably linked.¹³ Modern protectionist impulses are almost always motivated to a considerable degree by unemployment concerns, for which trade deficits function as a convenient symbol of potential state policy action.

Second, trade disequilibria imply a corresponding imbalance in the supply and demand for external currencies, a perspective associated with so-called "two-gap" models that address the potential for development to be derailed by a foreign exchange "bottle-neck" (McKinnon, 1964; Chenery and Strout, 1966; Mills and Nallari, 1992). A trade deficit usually signifies a shortage of the hard currency required to import the foreign capital goods and technology necessary for long-term growth.¹⁴

Third, a trade deficit (unless fully funded by depleting foreign exchange reserves) requires a contemporaneous inflow of capital, which registers as a liability in balance-of-payments accounting because it implies a future stream of capital outflows. Thus, in the modern age, the effects of adverse capital flows have generally been thought to lag deficits, which complicates the task of identifying them. Indeed, trade deficits are sometimes referred to as "inter-temporal trade", the exchange of goods over time rather than across nations. Deficit nations are said to be consuming future goods in the present, suggesting that measures of the current income and welfare of such countries systematically overstate their actual performance.

But those effects vary with the identity of the off-setting flows, since both the inter-temporal terms and the lag length are markedly different among the financing alternatives (Turner, 1991). For example, if the deficit is funded by a decline in official reserves, no time preference premium need be paid. If trade deficits are funded by borrowing, the "debt overhang" proposition suggests that heavy debt burden reduces the incentive to save and invest, with a corresponding

¹¹ As in Keynes (1933: 236) famous declaration: "I sympathise, therefore, with those who would minimise, rather than those who would maximize, economic entanglements between nations. Ideas, knowledge, art, hospitality, travel—these are things which should of their nature be international. But let goods be homespun whenever it is reasonably and conveniently possible; and, above all, let finance be primarily national."

¹² Closely related to the employment question is concern over the growth of productive capacity, especially in industry, which has implications for long-term growth. However, this is usually seen in terms of the *composition* of imports and exports, as in List (1837), rather than the *balance* between their volumes.

¹³ Employment concerns arise with all factors of production, not just labor.

¹⁴ The constraints of the two-gap model are cited explicitly by Esfahani (1991) and implicitly by Riezman et. al. (1996) as a motivation for encouraging export growth. Exports ease the bottle-neck, by increasing the volume of imports possible given any particular sustainable trade deficit.

slowdown in growth.¹⁵ Foreign direct investment is thought to be a more permanent transfer than short-term portfolio investment (Sarno and Taylor, 1999). Because of these differences, the effects of trade deficits are theoretically indeterminate in the liberal tradition, varying with the form of financing and the uses to which it is put.

Trade deficits are less ambiguous in theories arising from the mercantilist and structuralist veins, in part because all trade deficits carry unmistakable implications of power, dependence, transfer of surplus value, distributional effects, potential instability and debt.¹⁶ All eventually involve a net outflow of resources, since repayments exceed initial inflows by the rate of interest for debt instruments and by the rate of repatriated profit for equity instruments. (Of course, the net growth effect would still be positive if the social rate of return, including invisible externalities, exceeds the cost of capital, as liberals assume.)

Trade deficits and the capital flows associated with them have so many economic externalities and social consequences, however, it is certainly inadequate to evaluate them within such a narrow microeconomic framework. Both the orthodox and dependency literature is rife with these considerations, though the former mostly emphasizes positive effects and the latter negative ones. For example, the accumulation of liabilities to foreigners increases a nation's dependence on external actors and markets to supply funding to replace the constant, if irregular, stream of outgoing capital. Perhaps most damaging, the timing of both the initial and replacement inflows and the eventual outflows are determined at least as much by uncontrollable external "push" factors associated with the interests of foreign investors as by internal "pull" factors more plausibly associated with the real needs of the economy. The volatile pattern of capital flows, largely driven by external factors, has been well documented among trade deficit countries from Latin America in the 1980s to Eastern Europe, southeast Asia and (again) Latin America in the 1990s and beyond.

As a result, dependent countries — made even more dependent by external liabilities — face greater volatility from external "shocks", which are costly in terms of diminished economic growth, lower human and physical capital investment, greater inequality, higher poverty, and increased social and political stability (Hausmann and Gavin, 1996; Morley, 1994). The disruptive effect of the debt crisis of the 1980s, including distributional implications, a myriad of political effects, and forces which endured long after the so-called "lost decade" of the 1980's, is illustrative of the dangers of trade deficits. Volatility has been credited with a downward pressure on long-term growth rates, for example, in the range of 1% per year (Mendoza, 1994; Ramey and Ramey, 1994; Hausmann and Gavin, 1996). It is telling that this danger was foreseen by Raul Prebisch (1971: 11), whose work inspired both the mercantilist ISI strategy and the structuralist and radical dependency theory which followed: "if the next few years are to witness a transition to a satisfactory rate of development, investment with domestic resources will have to increase...

¹⁵ This moral hazard argument assumes debt heavy enough to drive a wedge between the face value of outstanding debt and its market value (because full repayment is uncertain). Then nations will not reduce consumption in order to save because partial servicing of the debt will only benefit the creditor by improving the price of the debt in the secondary market (Hofman and Reisen, 1991).

¹⁶Giraldo and Mann (1989) report a correlation of .51 ($t=3.1$) between current account deficits as a percentage of exports in one year and net change in debt levels as a percentage of exports in the following year. Net foreign liabilities and debt levels are also colinear.

[T]o allow a considerable external debt to pile up ... would be to invite deplorable consequences.”

In short, trade deficits create myriad pressures which must be managed by policymakers as well as by private actors. It is an empirical question whether the management arrangements made are usually sufficient to contain those pressures. It is the hunch of mercantilists and radicals that they are not.

Recent treatments of current account deficits

Current account deficits have been recently addressed by macroeconomists who “have been frantically developing crisis ‘early warning’ models.. [in response to the] inability to predict major financial collapses[, which has been] an embarrassment to the economics profession.” (Edwards, 2001: 1) However, relatively few empirical studies have investigated the consequences of deficits and almost all of them have focused on their (surprisingly still contested) role in currency collapses. There remains doubt that current account deficits are relevant to longer-term developmental issues. Moreover, most recent investigations of their causes are set against a backdrop of theoretical models that describe the causes of deficits in terms of innocuous — and inherently temporary — “consumption smoothing” in response to temporary shocks.¹⁷

Recent discussions of the consequences of the current account — relatively rare as they are — have taken an odd focus, devoted largely to the question of just how big a trade deficit can be while still being considered “sustainable”. The seeming presumption is that trade deficits — or, better said, the capital flows that balance them — are desirable right up until the point that their magnitude so alarms investors that they refuse to continue them, triggering a crisis.¹⁸ This is because capital inflows increase current consumption, which has immediate welfare benefits, and increase current investment, which has future welfare benefits through growth. Typical is Pitchford’s (1995: 34) self confident assertion of the causes and consequences of deficits:

“In a competitive environment without restrictions on international capital movements, capital will tend to flow towards those countries and sectors with higher rates of return. A real capital transfer between any two countries can only occur when the current account of the lender is in surplus and of the borrower is in deficit. Such capital flows can be shown to maximise world income ... and to raise the income of both borrower and lender. Moreover, given discount rates and profit schedules, it will in general pay some countries to be net lenders and others to be net borrowers indefinitely.”

Efforts to determine the limits on deficits include such criteria as the 5% of GDP offered as the danger point by Larry Summers in the aftermath of the 1994/95 Mexican crisis and subsequently labeled “conventional wisdom” by Milesi-Ferreti and Razin (1996). Another “oft-quoted rule of thumb” is a debt/GDP ratio of 40% (Reisen, 1996: 191). Still another is the

¹⁷ See Obstfeld and Rogoff (1996) for a review of modern models of the current account as an “intertemporal phenomena”.

¹⁸ Indeed, one popular perspective, dubbed “Lawson’s Doctrine” after Margaret Thatcher’s chancellor of the exchequer Nigel Lawson, held that even massive current account deficits don’t matter unless they are used to fund fiscal deficits resulting from irresponsibly large government expenditures. Otherwise, even huge current account deficits are not cause for concern because they merely reflect the (presumably sound) judgement of investors concerning the investment opportunities available. This doctrine seems to have been discredited by recent currency crises, especially in Asia, where the folly has been mostly in the private sector (Reisen, 1998).

warning to maintain the ratio of the annual deficit to total debt at a level equivalent to the growth rate minus the interest rate on that debt. Pitchford (1995: 126) labels all these criteria "folklore", instead urging a more elaborate, theoretically explicit model, the simplest of which is the "arithmetic of insolvency" (Debelle and Faruquee, 1996:3,fn3):

1. Definitionally, a current account deficit adds to the net stock of foreign liabilities. Thus, $CA_t/Y_t = \Delta NFA/Y_t$, where CA is the current account balance in a given year, Y is GDP, and NFA is the stock of net foreign assets.
2. Any given deficit is defined as sustainable if it produces a stable stock of foreign liabilities over time (measured as a percentage of contemporaneous GDP). That is, $\Delta(NFA/Y) = 0$ or $(NFA_t/Y_t) = (NFA_{t+1}/Y_{t+1})$.
3. $\Delta(NFA/Y) = 0$ implies that $CA/Y = 0$ only if Y is not growing. But with macroeconomic growth, the current account deficit can grow proportionately to the stock of foreign liabilities and the growth rate. Specifically, $CA/Y = (\Delta Y/Y) * (NFA/Y)$.¹⁹

A variety of elaborations and extensions have incorporated additional factors to sharpen the estimate, especially applications of the modern intertemporal model of current account determination, which combines the assumption of perfect capital mobility and consumption-smoothing behavior to predict that the current account acts as a buffer to smooth consumption in the face of shocks to output, investment, and government expenditure (Ghosh, 1995; Glick and Rogoff, 1995) Unanticipated increases in government spending or investment should lead to current account deficits in order to smooth consumption, which would otherwise fall in response to such shocks.

However, most such models prescribe optimal current account deficits, resulting debt levels and future trade surpluses that are an order of magnitude greater than historical experience establishes as the maximum achievable, let alone sustainable. Edwards (2001), for example, cites estimates of steady-state trade surpluses of 45% of GDP, an optimal current account deficit of 60% of GDP, and debt equal to 15 times GDP, among other wildly implausible results. Meanwhile, he notes that even the more conservatively estimated danger point of 5% of GDP was met in only 12 of 35 nation-years during 1990-96 in southeast Asia and in only 3 of 10 in two previous years, yet that did not prevent the East Asian financial crisis. The limitations of the "arithmetic of solvency" and "flow equilibrium" approaches to sustainability are also described by Calderon et. al. (1999: 2-4) and Milesi-Ferretti and Razin (1996).

Clearly, it is not enough for the ratio of external debt to GDP to be stabilized — it must be stabilized at a level that accords with the preferences of investors. Further, the desirability of holding foreign assets will vary across nations and over time — sometimes plunging explosively as interest rates, perceived risk, and the availability of alternative investments change. Thus, as investor tastes and judgement changes, the current account must move very rapidly to reduce the

¹⁹ To illustrate, suppose that net external debt is equal to 50% of GDP and macroeconomic growth is 4% per year. Then, because $CA/Y = .04 * .50 = .02$, a current account deficit equal to 2% of GDP can be sustained indefinitely. If growth is higher, the sustainable current account deficit is higher. For example, a 10% growth rate would allow a CA deficit of 5% of GDP to sustain a debt of 50% of GDP. Higher debt permits a higher sustainable CA deficit. A 100% of GDP debt and growth of 4% a year permits a CA deficit of 4% of GDP to be sustainable.

debt levels that are suddenly considered excessive, with the painful consequences associated with contraction and stabilization (Milesi-Ferretti and Razin, 1998). Attempts to assess these factors have produced widely varying estimates of current account deficit sustainability, but are seldom above 4% of GDP and often much less.

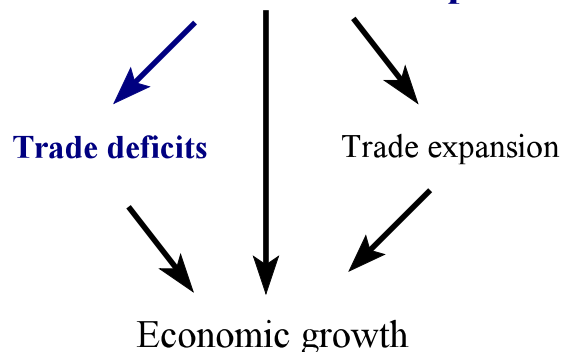
These factors make solvency and sustainability difficult to assess, but one further consideration suggests even greater caution in running trade deficits: a deficit may be sustainable without being optimal for growth (or even desirable). It seems likely that the pressures of a large trade deficit will induce long-term economic decline before reaching the dimensions that initiate a financial crisis or collapse — even if we could identify that level with certainty. Consider, for example, that the above formula indicates that the higher the level of existing foreign liabilities, the higher a current account deficit can be considered *sustainable*. But higher debt levels are more precarious, in part because they make re-evaluations by lenders more likely, and in part because the repayments make it more difficult to maintain high steady-state growth. Thus, it seems equally plausible that higher debt levels make current account deficits less *desirable*, even though they do make them technically *sustainable* (that is, stable in relation to GDP). In fact, it is the suspicion of mercantilists and structuralists that *any* level of debt, foreign liabilities, and trade deficits are *potentially* dangerous and undesirable.

But, to return to our central question, do policy measures like those surrounding outward-oriented development incline a nation toward trade deficits? It is to that question we now turn.

The effect of outward-oriented development on trade deficits

It certainly cannot be a surprise that liberalization would worsen the trade balance. In fact, van Wijnbergen (1992: 626) opens his piece with the observation that “Rapid and comprehensive reduction in barriers to international trade has often been followed by a sharp deterioration in the current account.” The reasons are not hard to find, emanating from both the current account and the capital account. Liberalization almost always reduces import barriers more than export barriers, not least because they are invariably higher to begin with.²⁰ This alone would shift the trade balance. Moreover, such deficits are likely to be accommodated by capital

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²⁰ Indeed, Calderon et. al. (2000: 14) show that even when export expansion occurs, it has only a tiny positive effect on the current account balance. This seems to imply that export revenues are converted into imports almost immediately; thus, export expansion should not be seen as a likely source of improvements in the current account. One might have expected the many studies that have used a gravity model to identify the positive effect of preferential trade agreements (PTAs) on trade levels to have differentiated import and export effects of liberalization, but only Soloaga and Winters (2001) examine import levels and export levels separately. Because they are focused more on distinguishing trade creation from trade diversion and general liberalization effects from intrabloc effects, they offer no definitive answer to the question of whether liberalization leads to trade deficits or not. However, it appears that these PTAs had some tendency to move the trade balance in a negative direction.

inflows resulting from both the capital account liberalization that usually accompanies trade liberalization in an OOD package and the increased confidence of foreign investors in a liberalizing economy.

Surprisingly, however, little empirical research has attempted to identify the effect of outward-oriented policies on trade deficits. Indeed, only one previous study directly addresses the effects of liberalization on trade deficits. By estimating equation [1] in a pooled time-series analysis of 15 countries from 1970 to 1995, UNCTAD (1999: 95-98) showed a strong tendency for open economies to run balance of trade deficits. The results of their analysis are displayed in Table 1, where the key predictor is their dummy variable for liberalization, which is a composite derived from three studies, the most prominent of which is Sachs and Warner (1995). The remaining elements of the model control for known effects, especially the tendency of trade deficits to swell during periods of growth in the home country (when imports expand along with income) and to shrink when trading partners grow (since *their* imports expand).

$$[1] \quad \frac{TB}{GDP} = \alpha + \beta_1 \Delta GDP + \beta_2 Exports + \beta_3 LIBERAL + \beta_4 \Delta GDP_{IC}$$

where:

TB = Trade balance, Δ
 GDP = growth rate, Δ
 GDP_{IC} = growth rate of
 industrial countries, GDP =
 real gross domestic product,
 Exports = exports
 purchasing power²¹
 LIBERAL = dummy for
 liberalization

Column 1 displays their simplest model, but there is little change with the fixed effects model of column 2 that utilizes dummy variables for each nation, allowing a separate intercept for each. The coefficient on the Liberalization variable indicate that "open" countries are likely to run trade deficits nearly 3% of GDP higher than closed ones; with t values

approaching 5, the effect is highly significant. Columns 3 and 4 appear to show that openness increases the impact of the other variables but the change in r^2 is small and the analysis omits the

	Random	Fixed	Random	Fixed	2SLS	S-W only
ΔGDP	-0.24 (4.35)	-0.24 (4.30)	-0.16 (2.47)	-0.15 (2.38)	-0.96 (2.45)	-0.10 (2.83)
PPExports	0.02 (4.60)	0.02 (4.60)	0.03 (6.96)	0.03 (7.05)	0.01 (2.90)	0.07 (13.90)
Liberalization	-2.68 (4.92)	-2.71 (4.97)				
Growth _{IC}	0.75 (4.94)	0.75 (4.94)	0.65 (4.25)	0.65 (4.23)	1.28 (4.45)	0.66 (5.51)
LIB x ΔGDP			-0.20 (1.7)	-0.21 (1.81)		-0.23 (2.99)
LIB x PPExp			-0.02 (5.23)	-0.03 (5.24)		-0.05 (9.64)
LIB x Growth _{IC}			0.72 (2.48)	0.73 (2.52)		0.80 (3.60)
Constant	-3.78 (2.27)		-5.37 (3.21)			-15.00 (10.58)
r^2	.04	.68	.04	.70	.57	
N	416	416	416	416	416	1352

²¹using "income, rather than barter, terms of trade, in order to capture the effects of both relative prices and export volumes and to assess the impact of liberalization on import propensity (p.95)"

main effect, so it is hard to tell how substantial this effect really is. Column 5 introduces an instrumental variables estimation that reduces the size of these effects somewhat. Column 6 expands the sample to 52 countries by utilizing only the Sachs and Warner openness measure rather than the composite one. These intriguing results are quite stable across the various specifications and estimation techniques but the liberalization measure remains controversial.²²

That is because a large literature developed to demonstrate the superior growth performance of OOD instead has demonstrated how difficult it is to define the OOD policy approach with enough clarity to measure reliably and validly the degree of "liberality" or "outwardness" of different countries at different times.²³ Partly this is because one central element of "outward orientation", the bias in incentives contained in the relative prices of exports, import-substitutes, and non-tradeables, can be accomplished by a considerable variety of policies in a wide range of substantive areas. But it is also due to the ambiguity and confusion inherent in the theoretical position itself.²⁴

One leading approach to detecting OOD has been to build a composite indicator of liberal policies by employing proxies of various kinds, especially the existence of distortions in prices that are plausibly policy induced. The earliest of these efforts were dogged by the criticism that the various alternative measures of "liberality" were poorly correlated with one another. Harrison (1991) examines the relationships among five measures of "openness", only 1 of 5 which was significantly related cross-sectionally to actual trade levels at even the .15 level. Furthermore, only five of the fifteen correlations among these measures were significant at .15 and only 3 of those at .05. When she examined *changes* in openness, she found that only four of 21 correlations among alternative measures (including actual trade) were significant at .05. Other researchers report similar divergences. Dollar (1992: 532) constructs the most ambitious price-based measure of outward orientation and concludes that "[his] division of countries is highly consistent with the [Greenaway and Nam, 1988] categorization and with other studies." However, he cites a rank correlation with Greenaway and Nam of only .51 and with Leamer (1988) of only .41 — even after removing 2 cases with *opposite* codings. Harrison notes (1991: 13) "The lack of a perfect (or even appropriately signed) correlation between all these measures is likely to indicate that they are not capturing the same aspects of 'openness'." Moon (1998) comments, "I would go further: there is little evidence that they are even measuring the same concept."

The most cited of the studies in this vein is Sachs and Warner (1995:22), who create a widely-used, if ought criticized, binary measure of trade liberalization by considering a nation "closed" if it has any of the following characteristics: (1) non-tariff barriers over 40% or more of trade, (2) average tariff rates of 40% or more, (3) a black market exchange rate premium of 20% or more on average during the 1970s and 1980s, (4) a socialist economic system, or (5) a state monopoly on major exports. Dollar (1992) and Sachs and Warner (1995) are subjected to a

²²It is not clear whether the estimates are corrected for auto-correlation.

²³ It is especially difficult to distinguish "outward-oriented" policy from market-oriented domestic policy. For a review of this issue, see Moon (1998).

²⁴ Indeed, Krueger (1978) contended that "a regime could be fully liberalized and yet employ exceedingly high tariffs." Sachs (1987) "questioned the premise that trade liberalization is a necessary component of successful outward oriented strategies." (Quoted in Edwards (1993: 1360).

withering assault by Rodriguez and Rodrik (1999), who question whether "trade liberality" is conceptually coherent and empirically measurable, especially because it appears impossible to isolate trade liberality from broader aspects of economic policy. Moreover, they show that the components of the "openness" measure do not produce the same results as the composite.²⁵ Still, the Warner and Sachs measure represents the most widely used of these measures; thus any analysis concerning the propensities of outward-oriented development must include both it and its leading elements.

To verify UNTAD's findings that outward-oriented development induces trade deficits, however, it is necessary to lodge the effect of openness within a better specified control model of trade balance determination. Until very recently, the only candidate for such a model was Kahn and Knight's (1983) analysis of current account deficits (excluding official transfers and normalized as a percentage of exports), a model later adapted by both Pastor (1989) and Giraldo and Mann (1989).²⁶ As Calderon et. al. (2000: 1) note, "This lack of cross-country empirical evidence is surprising given the fact that the position of the current account is typically used as one of the main leading indicators for future behavior of an economy and is part of the everyday decision process of policy makers." Kahn and Knight estimated the following equation for 32 non-oil developing countries for 1973-1980 (256 observations). It incorporates the growth rate of industrial countries but, unlike the UNCTAD study, omits a term for the growth of the nation itself. In its place, they include a measure of fiscal deficits (actually the government budget *surplus*), reflecting the widespread belief that excessive government spending was heavily responsible for trade imbalances. They also included changes in the terms of trade, a measure of real world interest rates discounted by export prices, and a term for time trend. They used a separate intercept (dummy) for each country while estimating equation [2].

$$[2] \quad \left(\frac{CA}{EXP}\right)_t = \alpha_1 \ln TOT_t + \alpha_2 \Delta GNP_{IC} + \alpha_3 RIR_t + \alpha_4 \ln RER_t + \alpha_5 \frac{GDEF}{GNP} + \alpha_6 Time$$

where:

CA = current account balance (excluding official transactions)

EXP = value of merchandise exports

TOT = terms of trade

ΔGNP_{IC} = real growth rate in OECD countries

RIR = foreign real interest rate²⁷

RER = real effective exchange rate index

GDEF = government fiscal deficits

GNP = nominal GDP

Time = linear time trend

²⁵ Furthermore, Rodriguez and Rodrik makes a powerful case that these measures are themselves endogenous; that is, they measure successful growth in the past, not the policies likely to produce it in the future.

²⁶ Though there may be a considerable difference between the trade balance and the current account balance, a similar model would be appropriate because many of the same forces affect each.

²⁷ The 3 month Eurodollar deposit rate adjusted for changes in the individual countries' export price index.

Pastor (1989) estimates a similar equation for 19 Latin American countries over 1973-84, with several small differences in indicators and the addition of a term for the availability of foreign capital, operationalized as the ratio of last year's net inflow of long-term capital to last year's GNP.²⁸ Giraldo and Mann (1989) estimate a very similar model for 11 Latin American countries from 1973-84. They correct for autocorrelation, but do not report t values. The model behaves somewhat differently in 1980-84 from 1973-79, and differently in oil exporters.

The results for all three studies, shown in Table 2, are generally in agreement and the parameter estimates are as theoretically expected. The current account balance is enhanced by improved terms of trade, growth of trading partners, and a fiscal (government budget) surplus. The current account is driven to deficit by overvalued exchange rates, high interest rates, and, in Pastor's analysis, the availability of capital.

A wave of studies seeking to identify the sources of persistent current account deficits have appeared in the aftermath of first the peso crisis and then the East Asian currency collapse (DeBelle and Faruqee, 1996; Reisen, 1998; Chinn and Prasad, 2000; Calderon et. al., 1999, 2000). Their attempts to incorporate elements of all the disparate theoretical approaches to the balance of payments yield a similar model. All use a terms of trade and/or a real effective exchange rate effect representative of the "elasticities" approach to explaining changing trade balances for a given country. As expected, trade balances improve when export prices increase more rapidly than import prices and when the exchange rate moves in a favorable direction. Keynesian approaches emphasizing demand factors are represented by indicators of growth in the home country and in trade partners, the former leading to an increase and the latter a decrease in trade deficits. Similar Keynesian notions imply inclusion of the fiscal balance, where government budget deficits are expected to fuel excessive aggregate demand and inflation, both of which are manifested in trade deficits.²⁹

	<u>K&K</u>	<u>P</u>	<u>P</u>	<u>G&M</u>
Terms of trade	.53 (4.5)	.26 (2.8)	.23 (2.5)	0.15 (**)
Δ GNP _{IC}	1.45 (1.9)	2.17 (3.5)	1.90 (3.2)	5.30 (**)
Interest rates	-0.35 (-2.9)	-0.39 (-2.5)	-0.39 (-2.5)	-5.01 (**)
LnRER	-0.60 (-3.3)	-0.67 (-6.6)	-0.66 (-6.6)	-0.76 (***)
Fiscal surplus	1.48 (2.8)	0.86 (1.8)	0.40 (.8)	1.03 (*)
Time trend	-0.01 (-1.9)	0.01 (1.2)	0.01 (1.6)	-0.14 (***)
Capital availability		-1.15 (-4.0)	-0.71 (-2.3)	
Lagged CA			1.22 (3.6)	
R ²	.91	.51	.54	.80
S.e.e.	.26			.24
N	256			
*/**/** = statistically significant at .10, .05, .01				

²⁸He used U.S. growth in place of industrial country growth and the U.S. prime rate in place of LIBOR. He also employed a different version of the terms of trade index, and the real exchange rate is not trade-weighted but computed from the CPI of the country, the US CPI, and the nominal exchange rate.

²⁹ These fiscal effects can also be interpreted in the monetary terms described below since budget deficits usually imply monetary expansion and affect incentives to save and invest.

Monetary approaches, which generally treat the current account as a passive accommodation to the movements in the capital and investment accounts, give priority to issues involving savings and investment. Some of these are structural, such as the inclusion of relative factor endowment/stage of development indicators (GDP or capital stock) to represent a core idea of this perspective (DeBelle and Faruquee, 1996: 3):

“a small open economy which is initially capital (and income) poor, provided it has access to international capital markets, will run current account (and trade) deficits for a sustained period of time in order to build its capital stock while maintaining its long-run rate of consumption. ... [A] relatively high marginal product of capital domestically will attract capital inflows and raise external indebtedness. Eventually, as output grows ... and the return on capital converges to its value abroad, the current account will improve toward (zero) balance as net exports move sufficiently into surplus to pay the interest obligations on the accumulated external debt.”

Monetary approaches also suggest the inclusion of a range of factors that affect savings and investment rates. These include the age composition of the population, where high dependency rates imply low savings and a need for capital inflows to sustain investment, or the depth of financial markets, quality of financial institutions, and terms of trade volatility (all of which imply high savings and thus trade surpluses). World interest rates bear upon many of these considerations in complex and unpredictable ways. This collection of variables appears to offer a reasonable control framework for our study of the effect of trade liberalization on trade deficits.

Our analysis generally follows this control model, the results of which are illustrated in column 1 of Table 3, and adds to it, in turn, several measures related to outward-orientation. Specifically, the model includes the growth rate of both the home country and a trade-weighted average of the growth rate of its trading partners, as well as change in the terms of trade index, the government budget surplus, and two indicators of international interest rates (real rates in the United States and the change in real rates from the previous year, reflecting the observation that changes in those rates were responsible for the sizable capital flows that precipitated the crises in both Mexico and southeast Asia in recent years). Rather than include a separate dummy for each nation, a rather atheoretical approach, this analysis includes in its place the logged GDP per capita for each nation in 1970 to represent the hypothesized tendency for capital to flow from rich to poor nations in pursuit of investment opportunities. The dependency ratio, which captures life cycle theories of savings and investment, is the percentage of the population older than 64 and younger than 15. All the data was obtained either from the World Bank's Economic Growth web site or World Development Indicators 2001 CD-ROM. For details, see the data appendix. The model was estimated with an unbalanced pooled time series over the 1975-1999 time period. Because the data matrix is marked by considerable missing data, the variables of interest to the main thesis are entered one at a time, with the result that the sample changes somewhat with each estimation. The analysis assumed a first-order autocorrelation process.

The results for the variables that constitute the control model are largely in accord with theoretical expectations and previous studies. More importantly, the results clearly show that outward-oriented nations run larger balance of trade deficits, even after controlling for other known determinants. Column 2 includes Sachs and Warner's (1995) measure of openness, the most frequently cited of the composite measures. Column 4 uses the size of the foreign sector (imports plus exports as a percentage of GDP), the most frequently used indicator based upon

aggregate data. In between, following the approach of Dollar and Kray (2001), column 3 uses change in trade percentage over the previous five years. Each displays a strong, statistically significant negative estimate, indicating that open economies are more likely to run balance of trade deficits. The

Sachs-Warner openness measure, for example, shows that the trade deficit in open economies is larger than in more closed economies by about 2.09% of GDP. This result is consistent with other studies. UNCTAD (1999) found it to be 2.68% to 2.71%. Moon (2000), with a smaller sample, leaner control model, and a different sample of nations and years, found the figure to be 2.31%.

Columns five through seven contain measures characterized as "inward orientation" to clarify that the expected sign is opposite to that expected with the previously discussed measures, even though each is similar to a component of the Sachs-Warner measure. The first two are direct indicators of trade barriers, the revenue

Table 3 - Determinants of trade deficits

	Open (S&W)	Δ Trade	Total trade	BMP	Export duties	Import duties	BMP
Outward orientation	-2.092 (-3.2)	-.076 (-7.3)	-.041 (-6.2)				
Inward orientation				.051 (1.7)	.073 (2.3)	.015 (2.4)	
Relative GDP per cap	5.606 (3.3)	5.316 (2.9)	3.963 (2.4)	5.19 (3.1)	4.499 (2.6)	5.369 (2.9)	5.884 (3.4)
Δ GDP	-.048 (-2.2)	-.020 (-.8)	-.055 (-2.5)	-.039 (-1.8)	-.065 (-2.6)	-.068 (-2.7)	-.036 (-1.6)
Δ GDP trade partners	.258 (3.3)	.272 (3.3)	.244 (3.1)	.240 (3.1)	.262 (2.8)	.273 (2.9)	.275 (3.4)
Budget surplus	.248 (7.3)	.228 (6.5)	.250 (7.3)	.265 (7.8)	.268 (7.4)	.252 (6.9)	.219 (6.2)
Dependency ratio	-5.40 (-2.2)	-10.68 (-4.0)	-8.48 (-3.7)	-7.32 (-3.1)	-9.51 (-3.7)	-9.53 (-3.7)	-6.75 (2.8)
Δ Terms of Trade	.062 (10.3)	.056 (9.0)	.063 (10.4)	.063 (10.5)	.051 (7.3)	.053 (7.4)	.058 (9.3)
Overvaluation	.003 (.7)	.005 (1.1)	-.002 (-.5)	-.001 (.1)	.008 (2.0)	.004 (.9)	.003 (.8)
US interest rates	-.024 (-.3)	-.060 (-.6)	-.141 (-1.8)	.014 (.2)	.043 (.5)	.057 (.7)	-.081 (-1.0)
Δ US interest rates	-.032 (-.4)	-.046 (-.5)	.030 (.3)	-.030 (-.4)	-.108 (-1.2)	-.126 (-1.3)	-.046 (-.5)
Constant	-.699 (-.3)	3.873 (1.4)	3.463 (1.5)	3.467 (1.4)	1.708 (.7)	.980 (.4)	-.060 (.0)
N	1699	1463	1677	1699	1477	1419	1512
Rho	.79	.79	.77	.79	.79	.79	.79
R sq	.70	.70	.68	.70	.70	.70	.70

derived from import and export duties as a percentage of the respective trade volumes. The last is the black market premium of the nation's currency. Each generates the expected positive effect on trade balance — trade controls result in smaller trade deficits — though export duties falls just below the level of statistical significance.

These results concerning trade deficits are also consistent with previous studies that bear upon the effect of liberalization or openness on current account, as opposed to trade, deficits.³⁰ Chinn and Prasad (2000:10-11 and Table 2) show that trade openness (trade/GDP) is negatively related to current account balances among developing countries in both a cross-sectional regression and in a panel design. Calderon et. al. (2000: 14) find that nations with higher levels of trade tend to larger current account deficits in a sample of 126 observations consisting of five-year averages of 41 LDCs. Their pooled design also shows that increases in the black market premium are associated with a *smaller* current account deficit, suggesting that liberalism may increase deficits.³¹

Similarly, they show that real exchange rate depreciation — another staple of the Washington Consensus — has only a small effect on the current account (sometimes significant, sometimes not, under alternative specifications and estimation techniques) and no evidence of a J-curve response to changes. There are indications from Chinn and Prasad (2000) and Milesi-Ferreti and Razin (1998) that capital controls (the antithesis of OOD) may dampen current account deficits but the effects are not usually statistically significant.³² In the five-year samples, Calderon et. al. (2000: 19) find the effect to be much larger (around .025, with a T between 2 and 3), showing that "balance of payments controls" are associated with smaller deficits.

In sum, there is good reason to believe that nations opting for outward-oriented development are also choosing to run a substantial balance of trade deficit. We now ask if this should be a cause for concern.

The effect of trade deficits on growth

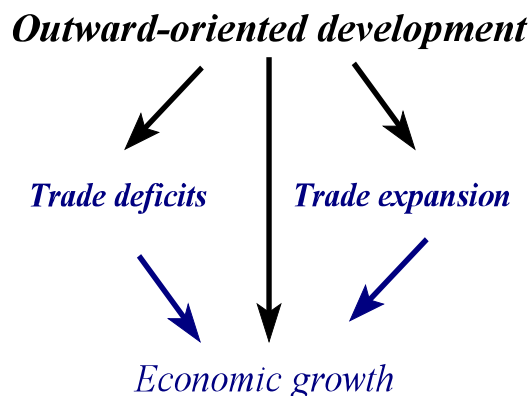
The contention that OOD offers superior growth prospects is well known, despite both

³⁰There search designs of these studies were not chosen to detect the role of outward-oriented policy. Debelle and Faruqee (1996) suggest that a cross-sectional analysis, averaging the values of a country over a long time period to identify the determinants of the current account balance, represents a long-run equilibrium while panel data using short-run variables does not. However, such a design prevents an analysis of the impact of policies which change over time.

³¹ In the five-year samples, however, larger black market premiums are associated with larger current account deficits (though the Ts appear insignificant).

³²They also show that initial levels of net foreign assets are positively related to subsequent current account balances, a finding which suggests that reversing trade deficits to smooth consumption or to repay debts is not as easy as orthodox treatments of sustainability imply. If deficits tend to feed on themselves, the harmful effects of deficits may be very long-lived.

theoretical and empirical weaknesses. For a review, see Moon (1998). Theoretically, the source of this advantage is contested, some emphasizing the macro-economic effects of trade expansion itself, others emphasizing the microeconomic effects of learning and technology associated with the new growth theory (Romer, 1986). Most formulations of the case for OOD also draw attention to the capital inflows thought to follow from it, but little attempt has been made to single out their role.³³ These inflows expand investment above the level that could be sustained by domestic savings and, given the strong theoretical and empirical support



for an investment - growth linkage, can generate more rapid growth. However, these capital inflows can be seen in a different theoretical light as well: as an accounting identity, capital inflows are the additive inverse of a current account deficit, nearly always driven by a deficit in trade of goods and services. Outside of their role in currency crashes, however, the effect of trade deficits have not attracted much attention from empirical researchers in the liberal tradition.³⁴

This section explores whether alternative theoretical currents on the growth effects of deficits have merit.³⁵ The analysis proceeds by identifying influential and persuasive studies in the liberal tradition and then asking whether the data contained in them also offers evidence for the negative role of trade deficits suggested by the mercantilist and dependency traditions. Essentially the analyses consist of adding trade deficits to existing models of export-induced growth.

We begin by examining the studies that link exports with growth directly. Growth accounting within a neo-classical production function has been the most dominant form of empirical analysis represented in the literature, though sometimes this is said to reflect a Solow-type theory and other times the modern endogenous growth theory usually associated with Romer (1986). Research designs may be divided generally between purely cross-sectional designs (with

³³ Afxenitou and Serletis (1996) investigate the effect of debt on growth, using six measures of debt levels. Borensztein et. al. (1998) show that foreign direct investment improves growth, in interaction with human capital. Dixon and Boswell (1996a,b) and Firebaugh (1996) also debate the effect of FDI.

³⁴ For a review of currency crises, see Kaminsky et. al., 1997. See Demirguc-Kunt and Detragiache (1997) for a review of banking crises.

³⁵ Of course, if trade deficits do contain adverse future consequences, analyses which use short- to intermediate- term growth in *gross* domestic product as the adjudicator of the relative benefits of alternative policies may overstate the welfare effect. Better would be a measure of *net national* product that discounts accumulated future liabilities. Four additional critiques of the outward-oriented development claims are beyond the length constraints of this study to address. First, OOD may promote growth but not real development, especially in generating inequality and weakening the public sector. Second, OOD may require initial conditions typically absent from LDCs that have not experienced long periods of self-sustained development (Helleiner, 1986). Third, OOD may require special external conditions not present in all time periods (Gray and Singer, 1988). Fourth, the fallacy of composition—especially the so-called “adding up” problem for primary and labor-intensive exports—make this policy self-defeating when pursued by large numbers of nations at the same time (Cline, 1982).

variables measured at a single point in time), panel designs (which use cross-sections but measure growth over an interval), and time-series designs (including pooled samples).

The most recent study to use the purely cross-sectional type of specification is Frankel and Romer's (1999) piece in the *American Economic Review*. It is especially noteworthy not only because of Romer's prominent status as a proponent of the new growth theory but also because development studies appear so seldom in the flagship journal of the American Economic Association. They report OLS estimates for equation [3], estimated with 1985 data:

[3]

$$\ln Y_i = \alpha + \beta T_i + c_1 \ln N_i + c_2 \ln A_i + \mu_i$$

where:

Y_i = real GDP per capita

T_i = total trade (exports + imports) as a percentage of GDP

N_i = economically active population,

A_i = total land area³⁶

Their results, reported in the first column of Table 4, show that nations with higher levels of trade had higher per capita income levels in 1985. The parameter estimate is statistically significant, though the r^2 is quite low. Furthermore, the authors, sensitive to the criticism that cross-sectional designs invite inflated estimates of causation due to simultaneity bias, also performed an instrumental variable analysis designed to remove the endogeneity of trade.

(The "instrument" is derived from the geographic and size elements of the standard gravity equation model frequently used to predict bilateral trade volumes.) The estimates are broadly similar to the OLS ones shown here and they report that on the basis of a Hausman test "the hypothesis that the IV and OLS estimates are equal cannot be rejected ($t=1.2$)" (p. 388) The parameter estimate for the key variable, trade share, is more than twice as large under the IV estimate as the OLS one, but the standard error is about four times as large. Thus, while the results suggest that the direction of causation runs from trade to growth, the parameter estimate "is marginally rejected at conventional levels ($t=2.0$)" (p. 387). To verify that the results reported below do not reflect peculiarities of the data or sample, the second column reports the replication of the OLS analysis done for this paper.³⁷ Despite a different (smaller) sample, the estimates are nearly identical.

Table 4 -Replication and extension of Frankel and Romer (Dep. variable: Logged GDP per capita, 1985)

	F&R		Replication			Extensions	
	1	2	3	4	5		
Exports + imports	0.85 (3.4)	0.95 (3.9)		.91 (4.1)	.74 (3.3)		
Exports - imports			.027 (4.5)	.026 (4.7)	.045 (5.7)		
Ln population	0.12 (2.0)	0.12 (1.8)	-.074 (-1.3)	.58 (1.0)	.48 (.1)		
Ln land area	-.01 (.2)	-.02 (-.4)	-.032 (-.8)	-.001 (-.4)	-.001 (-.2)		
Constant	7.40 (11.2)	5.39 (4.9)	9.23 (11.1)	6.45 (6.2)	7.45 (7.1)		
Sample size	150	124	124	124	123		
R^2	.09	.12	.16	.26	.32		

t-ratios are in parenthesis

³⁶ Y_i is RGDPCH from Penn World Tables (PWT) 5.6; T_i is OPEN (the ratio of exports + imports to GDP) from PWT; N_i is computed from PWT (RGDPCH*POP/RGDPW); and A_i is from Rand McNally (1993).

³⁷ All the data was obtained from the World Bank's World Development Indicators 1999 CD-ROM except A_i , which is taken directly from Frankel and Romer (1999).

Though total trade is a significant growth predictor, at least in the OLS estimates, do exports and imports have differential effects, as the mercantilists insisted? When the trade measure is replaced by exports alone, the resulting t value is 5.5 and the r^2 nearly doubles to .21. When imports are included alone, the t value is only 1.9 and the r^2 falls to .04. Since both exports and imports are associated with higher income, this hardly supports Becher's claim that "the former brings a certain advantage and the latter inevitable damage", but it does suggest that the mercantilists were right in viewing these two components of trade differently. Column 3 shows that a trade surplus (deficit) is a positive (negative) predictor of income level—and a better predictor than the size of the trade sector. That judgement holds when both the trade balance and the level of trade are included in the same equation, as shown in column 4. Furthermore, the column 4 parameter estimates for these two variables are almost identical to their values (reported in columns 2 and 3) when each is estimated separately. If the conclusion of Frankel and Romer is valid—that trade raises income—it must equally be said that trade deficits lower income. It may safely be ventured that both trade levels and trade deficits matter and that their effects are largely independent of one another (their bivariate correlation is -.12). Finally, an analysis of residuals revealed one nation (Lesotho) with a DFFITS greater than 3, indicating that it was an outlier and had a disproportionate impact on the estimates. In the analysis reported in the fifth column, it was removed, improving the fit of the entire equation and strengthening the estimate of the effect of trade deficits (while lowering that of trade levels).³⁸

A second research design found in this literature uses a panel approach to explain *changes* in income levels. The most frequently cited panel analysis is Levine and Renelt (1992), who estimate a series of panels over 1960-1989 and 1974-1989. Their central mission is to discover which of the variables postulated to explain growth do so robustly across alternative specifications. They begin with a control model composed of four variables found to be robustly related to growth. While they do not focus exclusively on the impact of trade, they report that trade levels are generally positively related to growth, though the relationship is seldom statistically significant. In the analysis of interest to us, they add the ratio of exports to GDP (averaged over the time period) to the standard control model. Specifically, they estimate equation [4], which is replicated and extended below:

$$[4] \quad \Delta GDPpc = a + b_1 INV + b_2 GDPpc_{t0} + b_3 EDU_{t0} + b_4 \Delta POP + b_5 \frac{Trade}{GDP}$$

where:

$\Delta GDPpc$ = growth in real per capita gross domestic product

INV/GDP = average investment as a percentage of GDP

$GDPpc_{t0}$ = beginning real per capita gross domestic product

EDU_{t0} = beginning gross secondary school enrollment percentage

ΔPOP = population growth

$Trade/GDP$ = average trade as a % of GDP.³⁹

³⁸ To better parallel the Frankel and Romer study, an instrumental variables analysis using the model discussed in the previous section as a predictor of trade deficits is currently underway.

³⁹ Most of their analyses were reported using exports only, but they note that (p. 953): "If one substitutes imports or total trade for exports ... one obtains essentially the same coefficient estimate and coefficient standard error. Thus, researchers who identify a significant correlation using only an export performance measure should not associate this result with exports per se..."

Our replication, estimated over the 1974-89 period, produced results quite similar to those of Levine and Renelt and are not reported here: trade levels are modestly related to growth, but with t-ratios in the range of 1.2, the estimates are not statistically significant.⁴⁰ A similar, though slightly stronger, result is obtained when total trade is replaced by the trade balance, just as occurred with the cross-sectional design reported above. Because of the availability of more recent data, however, we can now incorporate the experience of the 1990s, widely held to have been subject to different trade dynamics.

Table 5 reports the analysis when conducted from 1975 to 1997. In column 1, total trade is an insignificant predictor of growth, though the parameter estimate is positive, a result similar to the earlier time period. In column 2, trade is replaced with the trade balance. Its parameter estimate is highly significant and the overall fit of the equation improves substantially as well. The two-fold results are unmistakable. First, trade deficits retard growth. Second, the balance of trade is a better predictor of growth than total trade. In column 3, both trade measures are included together. The previous results are confirmed, and once again the parameter estimates change so little that we can easily see that the effects of trade deficits and trade expansion are independent of one another.

An alternative panel-design formulation of the trade-growth relationship examines the effect of *change* in trade levels rather than their average level over the period. Several studies have employed this approach, adding various other potential predictors. Michaely (1977) predicts average annual Δ GDP per capita on the basis of average annual Δ Exports/GDP alone. Burney (1996) predicts average annual Δ GDP (not per capita), using a production function that contains average annual Δ Exports/GDP as well as annual growth rate of population, investment, and energy production. Kormendi and Meguire (1985) do the same, but also include beginning year GDP per capita, but not energy production. Levine and Renelt (1992) estimate an equation similar to Kormendi and Meguire, but add secondary school enrollment. All estimate the relationship over different time periods. The results vary, with export growth showing a positive relationship, sometimes barely above statistical significance, sometimes not. But none examine the

Table 5 - Replication and extension of Levine & Renelt (Dep. variable: Δ GDPpc, 1975-1997)

	<u>1</u>	<u>2</u>	<u>3</u>
Exports + imports	0.17 (1.0)		0.19 (1.1)
Exports - imports		0.23 (3.7)	.023 (3.7)
GDP per capita, 1975	-0.23 (-3.3)	-0.25 (-3.9)	-0.25 (-3.9)
Investment/GDP	0.61 (4.6)	0.82 (7.0)	0.76 (5.9)
Enrollment, 1975	0.13 (1.9)	0.08 (1.3)	0.08 (1.2)
Population growth	-1.26 (-1.6)	-1.73 (-2.3)	-1.81 (-2.4)
Constant	0.49 (.1)	1.58 (.4)	2.05 (.5)
Sample size	89	89	89
R ²	.43	.51	.52

t-ratios are in parenthesis

⁴⁰ The data source is the World Bank's *World Development Indicators* CD-ROM. Because it lacks real GDP data before 1975, the replication began in 1975, not 1974. This precluded an analysis of 1960-1989.

effect of trade deficits.

Table 6 illustrates the result of a simple model characteristic of that found in the literature for 1975-1997. Here the dependent variable is aggregate, not per capita, GDP. The openness measure is the average annual change in exports plus imports. This analysis does not use a trade balance measure completely parallel to that of openness, as the first two have done. Unlike trade as a percentage of GDP, trade balances fluctuate greatly from year to year, so a change from the beginning to the ending year would be highly responsive to the choice of end-points and not a very meaningful portrayal of the effect of the trade balance. Clearly better is the average value over the entire period, just as used in the previous table. Population and school enrollments, which produced very small effects, were omitted. Once again, trade deficits are more closely linked to growth than are trade levels, though both effects are present.

Table 6 - Panel analysis with change in trade levels (Dependent variable: Δ GDP, 1975-1997)

	1	2	3
Δ Exports + imports	1.01 (2.7)		0.89 (2.5)
Exports - imports		0.33 (3.5)	.031 (3.4)
GDP per capita, 1975	-0.15 (-2.9)	-0.25 (-4.5)	-0.22 (-4.0)
Investment/GDP	1.03 (6.1)	1.24 (7.2)	1.21 (7.2)
Constant	-1.19 (-.3)	-0.33 (-.1)	-1.87 (-.5)
Sample size	94	94	94
R ²	.38	.41	.45

t-ratios are in parenthesis

Thus, we see that three different research designs, different in many ways, generate the same conclusion: trade deficits are at least as good a predictor of growth as the overall trade level—and probably better. This affirmation of mercantilist and radical perspectives does not preclude the liberal position, however, because the effects of trade deficits and trade levels appear to be quite independent and both appear together. These results are quite robust: they recur over different time periods, with different research designs, different versions of the dependent variable, and with different additional predictors in the equation.

A final approach examines the role of trade within a research design centered on the Warner and Sachs measure of “openness” as a predictor of growth.⁴¹ Using a panel design over the 1970-1989 period, they show a strong positive growth effect for openness among nations with a 1970 GDP per capita below \$5000. The results are shown in the first column of Table 7. The second column reports the replication conducted for this paper, using a leaner model and a slightly altered measure of openness. The replication model uses secondary school enrollment, as most studies have done, rather than a combination of secondary and primary school. It omits a measure of government spending that had a marginal negative effect, measures of assassination and coups that had insignificant parameter estimates, and a measure of investment goods prices, all included in Sachs and Warner (1995). As suggested by Rodriguez and Romer (1999), the openness measure is the number of years during this period that the nation qualified as “open” by the Sachs and Warner criteria, while their original study coded a nation as open only if they were open during each of the nineteen years during this interval. The strength of the parameter

⁴¹ For additional analyses involving alternative designs, see Moon (2000b).

estimates are broadly similar, especially for the key measure of openness, suggesting that results should be robust across the differences in specification and data sources.

In the third column, however, the results of the same model estimated for the 1980 to 1997 time period show a significantly diminished effect for openness. For the analysis reported in the fourth column, three additional variables are added to the model: export growth during this period, average trade surpluses, and population growth. The results in column 4 show an insignificant parameter estimate for the openness measure of the wrong sign, together with results for both trade level and trade balance which are consistent with the results reported earlier in the paper.

Such a result is hardly sufficient to call into question the results reported by Sachs and Warner (1995) and others, who have generally found this openness measure positively correlated with growth. Sample, specification, and data differences are large enough to account for substantial differences in findings. It does, however, raise the issue of robustness which Levine and Renelt (1992) have pressed concerning other effects associated with trade and finance variables. Moreover, because openness effects disappear in the presence of indicators of trade levels and trade balance, it invites inquiry into whether openness has a substantial impact on trade performance.

Conclusion

This paper has provided evidence in support of the mercantilist and radical view that trade deficits are more integral to the development process than previous analyses have acknowledged. The liberalization process does tend to encourage trade deficits just as it is thought to expand overall trade. Those trade deficits may exert a dampening process on subsequent growth, even as trade expansion accelerates it. It is far from clear which of these two causal paths is the stronger, largely because one has been exhaustively researched while the other is just now emerging as a serious issue for research. But there appears to be no justification for the wide-spread view that trade deficits are insignificant epiphenomena. The evidence presented here suggests trade *deficits* are at least as strong a causal factor as overall trade *levels*. It seems a fair appraisal to conclude that nations seeking development ought to avoid trade deficits with as much fervor as they pursue the expansion of exports.

Table 7 - Replication and Extension of Sachs and Warner

	S&W	1	'80-'97	4
Openness	2.45 (5.4)	.036 (5.7)	.67 (2.7)	-.23 (-.7)
Investment	5.66 (1.7)	.13 (4.2)	.16 (4.6)	.14 (3.2)
Log GDP pc	-1.27 (-3.8)	-.11 (-2.6)	.15 (.3)	-.06 (-1.3)
School enrollment	2.57 (1.4)	.26 (1.6)	.18 (1.0)	-.15 (-.8)
Exports + imports				.20 (1.9)
Exports-imports				.05 (1.8)
Population growth				-.19 (-4.7)
Constant	9.54 (3.8)	.05 (1.9)	-.43 (-1.4)	.07 (2.0)
R ²	.54	.58	.46	.56
N	79	67	54	48

t statistics in parentheses

Bibliography

- Afxentiou, Panos and Apostolos Serletis (1996) "Growth and Foreign Indebtedness in Developing Countries: An Empirical Study Using Long-term Cross-Country Data," *Journal of Developing Areas* 31 (Fall): 25-39.
- Burney, Nadeem A. (1996) "Exports and Economic Growth: Evidence from Cross-country Analysis," *Applied Economics Letters* 3: 369-373.
- Borensztein, E., J. De Gregorio, and J-W. Lee (1998) "How Does Foreign Direct investment Affect Economic Growth?," *Journal of International Economics* 45: 115-135.
- Calderon, Cesar, Alberto Chong, and Norman Loayza (2000), "Determinants of Current Account Deficits in Developing Countries," World Bank Policy Research Working Paper 2398, July.
- Calderon, Cesar, Norman Loayza, and Luis Servan (1999), "External Sustainability: a Stock Equilibrium Perspective," World Bank Policy Research Working Paper 2281, October.
- Chenery, Hollis B. and A.M. Stout (1966) "Foreign Assistance and Economic Development," *American Economic Review* 56 (September): 420-435.
- Chinn, Menzie and Eswar S. Prasad (2000) "Medium-term Determinants of Current Accounts in Industrial and Developing Countries: An Empirical Exploration" National Bureau of Economic Research Working Paper #7581 March.
- Cline, William R. (1982) "Can the East Asian Model of Development Be Generalized?" *World Development* 10,2:81-90.
- Corden, W. Max (1994) *Economic Policy, Exchange Rates and the International System*. University of Chicago Press.
- Crowley, A.M., J Rauch, S. Seagrave, and D.A. Smith (1998), "Quantitative Cross-National Studies of Economic Development: A Comparison of the Economics and Sociology Literatures", *Studies in Comparative International Development* 33, 2: 30-57.
- DeBelle, Guy and Hamid Faruquee (1996) "What determines the current account? A Cross-sectional and panel approach," International Monetary Fund Working Paper #126
- Demirguc-Kunt, Asli and Enrica Detragiache (1997) "The Determinants of Banking Crises: Evidence from Developed and Developing Countries".
- Dixon, William J. and Terry Boswell (1996a) "Dependency, Disarticulation, and Denominator Effects: Another Look at Foreign Capital Penetration," *American Journal of Sociology* 102, 2 : 543-562.
- Dixon, William J. and Terry Boswell (1996b) "Differential Productivity, Negative Externalities, and Foreign Capital Dependency: A Reply to Firebaugh," *American Journal of Sociology* 102, 2 : 576-584.
- Dollar, David (1992) "Outward-oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs, 1976-1985," *Economic Development and Cultural Change* 40, 3: 523-44.
- Easterly, William (1999) "The Lost Decades: Explaining Developing Countries' Stagnation 1980-1998," Washington, DC: World Bank Policy Research Working Paper.
- Economist* (5 July 2001) "East Asian Economies: Falling (again)
- Edwards, Sebastian (1989) *Real Exchange Rates, Devaluation, and Adjustment: Exchange Rate Policy in Developing Countries* (Cambridge, Massachusetts: MIT Press)
- Edwards, Sebastian (1993) "Openness, Trade Liberalization, and Growth in Developing

- Countries," *Journal of Economic Literature* 31 (September): 1358-1393.
- Edwards, Sebastian (2001) "Does the Current Account Matter?" in Sebastian Edwards and Jeffrey Frankel, eds. *Preventing Currency Crises in Emerging Markets* (University of Chicago Press, forthcoming 2001) NBER conference January 11-13, 2001.
- Esfahani, Hadi (1991) "Exports, Imports, and Economic Growth in Semi-industrialized Countries," *Journal of Development Economics* 53, 1 (January): 93-116.
- Firebaugh, Glen (1996) "Does Foreign Capital Harm Poor Nations? New Estimates Based on Dixon and Boswell's Measure of Capital Penetration," *American Journal of Sociology* 102, 2: 563-575.
- Fisher, Eric O'N. (1990) "Sustainable Balance of Trade Deficits" *Journal of Monetary Economics* 25: 411-430.
- Frankel, J.A. and D. Romer (1999) "Does Trade Cause Growth?," *American Economic Review* 89, 3: 379-399.
- Gervaise, I. (1720) *The System or Theory of the Trade of the World*. London.
- Ghosh, Atish R. (1995) "International Capital Mobility Amongst the major industrialized countries: too little or too much?," *Economic Journal* 105: 107-128.
- Ghosh, Atish R. and Jonathon D. Ostry (1995) "The Current Account in Developing Countries: A Perspective from the Consumption-smoothing Approach," *World Bank Economic Review* 9, 2: 305.
- Giraldo, German and Arthur J. Mann (1989) "Latin American External Debt Growth: A Current Account Explanatory Model, 1973-1984," *Journal of Developing Areas* 24 (October): 47-57.
- Glick, Reuven and Kenneth Rogoff (1995), "Global vs. Country-Specific Productivity Shocks and the Current Account," *Journal of Monetary Economics*, pp. 159-192.
- Gray, Patricia and Hans W. Singer (1988) "Trade Policy and growth of Developing Countries: Some New Data," *World Development* 16, 3 (March): 395-403.
- Greenaway, David (1986) "Characteristics of Industrialization and Economic Performance Under Alternative Development Strategies"
- Greenaway, David and Chong Hyun Nam (1988) "Industrialisation and Macroeconomic Performance in Developing Countries under Alternative Trade Strategies" *Kyklos* 41,3: 419-435.
- Harrison, Ann (1991) "Openness and Growth: A Time Series, Cross-Country Analysis for Developing Countries," World Bank Policy Research Working Paper Series #809.
- Hausmann, Ricardo and Michael Gavin (1996) "Securing Stability and Growth in a Shock-prone Region: the Policy Challenge for Latin America," in Ricardo Hausmann and Helmut Reisen, eds., *Securing Stability and Growth in Latin America: Policy Issues and Prospects for Shock-prone Economies*. Paris: Organisation for Economic Co-operation and Development, pp. 23-64.
- Heckscher, Eli F. (1934) *Mercantilism*, Volume 2. London: Allen and Unwin.
- Helleiner, Gerald K. (1986) "Outward Orientation, Import Instability and African Growth: An Empirical Investigation," in Sanjaya Lal and Frances Stewart, eds. *Theory and Reality in Development: Essays in Honor of Paul Streeten*. London: Macmillan: 139-153.
- Heller, H. Robert (1973) *International Trade: Theory and Empirical Evidence* Englewood Cliffs, N.J.: Prentice-Hall.
- Heyne, Paul (1983) "Do Trade Deficits Matter?" *Cato Journal* 3 (Winter 1983/1984): 705-716. Reprinted in James A. Dorn and William Niskanen, eds. *Dollars, Deficits, and Trade*.

- Boston: Kluwer, 1989.
- Hofman, Bert and Helmut Reisen (1991) "Some Evidence on Debt-related Determinants of Investment and Consumption in Heavily Indebted Countries," *Weltwirtschaftliches Archiv* 127 (2): 281-299.
- Hume, David (1752) "Of the Balance of Trade," in *Essays, Moral, Political and Literary* (ed. D. Rotwein), London
- Kaminsky, Graciela, Saul Lizondo, and Carmen Reinhart (1997) "Leading Indicators of Currency Crises" Policy Research Working Paper 1852, Washington: World Bank
- Keynes, John Maynard (1933/1982) "National Self-Sufficiency," *The Collected Writings of John Maynard Keynes*, vol. 21. London: Macmillan
- Keynes, John Maynard (1936) *The General Theory of Employment, Interest, and Money*. London: Macmillan.
- Khan, Mohsin S. and Malcolm D. Knight (1983) "Determinants of Current Account Balances of Non-oil Developing Countries in the 1970s," *IMF Staff Papers* 30 (December): 819-842.
- Krueger, Anne O. (1978) *Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences* Cambridge, MA: Ballinger for NBER.
- Leamer, Edward (1988) "Measures of Openness" in Robert Baldwin, ed. *Trade Policy Issues and Empirical Analysis* Chicago: University of Chicago Press.
- Levine, Ross and David Renelt (1992) "A Sensitivity Analysis of Cross-Country Growth Regressions," *American Economic Review* 82, 4 (September): 942-963.
- Lippens, Robert E. (1997) "Are trade deficits that bad?" *Business Economics* April 1997.
- List, Friedrich (1837/1983) *The Natural System of Political Economy*. London: Frank Cass.
- Locke, John (1691) "Some Considerations of the Consequences of the Lowering of Interest, and Raising the Value of Money" in *Several Papers Relating to Money, Interest, and Trade*, London.
- McKinnon, Ronald I. (1964) "Foreign Exchange Constraints in Economic Development," *Economic Journal* 74 (June): 388-409.
- Mendoza, E.G. (1994) "Terms of Trade Uncertainty and Economic Growth: Are Risk Indicators Significant in Growth Regressions?," Board of Governors of the Federal Reserve System, International Finance Discussion Paper 491. Washington, DC.
- Michael, Michael (1977) "Exports and Growth: An Empirical Investigation" *Journal of Development Economics* 4:49-53.
- Milesi-Ferretti, Gian Maria and Assaf Razin (1996) *Current-account sustainability* Princeton studies in international finance: 81 International Finance Section, Princeton University.
- Milesi-Ferretti, Gian Maria and Assaf Razin (1998) "Sharp Reductions in Current Account Deficits: An Empirical Analysis," *European Economic Review* 42: 897-908.
- Mills, Cadman Atta and Raj Nallari (1992) *Analytical Approaches to Stabilization and Adjustment Programs*. Economic Development Institute Seminar Paper 44. Washington: World Bank.
- Moon, Bruce E. (1998) "Exports, Outward-oriented Development, and Economic Growth," *Political Research Quarterly* 51, 1 (March): 7-37.
- Moon, Bruce E. (2000a) *Dilemmas of International Trade*, revised edition. Boulder: Westview Press.
- Moon, Bruce E. (2000b) "Reconsidering Outward-oriented Development after the Asian Financial Crisis," Paper prepared for the Annual Meetings of the International Studies Association, March 14-18, Los Angeles.

- Morley, S (1994) *Poverty and Inequality in Latin America: Past Evidence, Future Prospects*. Washington, DC.: Overseas Development Committee.
- North, D. (1691) *Discourses Upon Trade*, London.
- Pastor, Manuel, Jr. (1989) "Current Account Deficits and Debt Accumulation in Latin America: Debate and Evidence," *Journal of Development Economics* 31: 77-97.
- Pitchford, John (1995) *The Current Account and Foreign Debt*. London: Routledge.
- Prebisch, Raul (1971) *Change and Development: Latin America's Great Task*, Praeger for the Inter-American Development Bank.
- Pritchett, Lance (1996) "Measuring Outward Orientation in LDCs: Can it be done?," *Journal of Development Economics* 49: 307-335..
- Ramey, G. and V.A. Ramey (1994) "Cross-country Evidence on the Link Between Volatility and Growth," National Bureau of Economic Research Working Paper 4959, Cambridge, MA.
- Rapley, John (1996) *Understanding Development: Theory and Practice in the Third World* Boulder: Lynne Rienner Publishers.
- Reisen, Helmut (1996) "The Management of Capital Flows: Lessons from Latin America and Asia," in Ricardo Hausmann and Helmut Reisen, eds., *Securing Stability and Growth in Latin America: Policy Issues and Prospects for Shock-prone Economies*. Paris: Organisation for Economic Co-operation and Development, pp. 177-198.
- Reisen, Helmut (1998) "Sustainable and Excessive Current Account Deficits" *Empirica* 25, 2: 111-31.
- Reizman, R., C.H. Whiteman, and P. M. Summers (1996) "The Engine of Growth or its Handmaiden? A Time-series Assessment of Export-led Growth," *Empirical Economics*, 21(1): 77-110.
- Rodriguez, Francisco and Dani Rodrik (1999) "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence," National Bureau of Economic Research Working Paper 7081 (April) Cambridge, MA.
- Romer, Paul M. (1986) "Increasing Returns and Long-run Growth," *Journal of Political Economy* 94, 5 (October): 1002-1037.
- Sachs, Jeffrey D. (1987) "Trade and Exchange Rate Policies in Growth-oriented Adjustment Programs" in Vittorio Corbo, Morris Goldstein, and Mohsin Khan, eds. *Growth-oriented Adjustment Programs* (Washington: IMF)
- Sachs, Jeffrey D. and Andrew Warner (1995) Economic Reform and the Process of Global Integration, *Brookings Papers on Economic Activity* 1: 1-118.
- Sarno, Lucio and Mark P. Taylor (1999) "Hot money, accounting labels and the permanence of capital flows to developing countries: an empirical investigation," *Journal of Development Economics* 59: 337-364.
- Smith, Adam (1937 [1776]) *The Wealth of Nations*. Reprint. New York: The Modern Library, Random House.
- Soloaga, Isidro and L. Alan Winters (2001) "Regionalism in the nineties: What effect on trade?," *North American Journal of Economics and Finance* 12, 1-29.
- Taylor, Mark P. (1990) *The Balance of Payments: New Perspectives on Open-economy Macroeconomics*. Aldershot, England: Edward Elgar Publishing Limited.
- Tsanacas, Demetri, Krishna M. Kasibhatla, and John Malindretos (2000) "A survey of the Monetary Approach to International Finance," in Augustine C. Arize, Theologos Homer Bonitsis, Ionnis N. Kallianiotis, Krishna M. Kasibhatla, and John Malindretos, eds.,

- Balance of Payments Adjustment: Macro Facets of International Finance Revisited.*
Westport, Connecticut: Greenwood Press, chapter 2, pp. 15-32.
- Turner, Phillip (1991) "Capital Flows in the 1980s: A Survey of Major Trends," *Bank for International Settlements Economic Papers*, no 30.
- UNCTAD (1999) *Trade and Development Report 1999*.
- Van Wijnbergen, Sweder (1992) "Trade Reform, Policy uncertainty, and the current account: a non-expected-utility approach," *American Economic Review* 82, 3 (June): 626-633.
- Viner, Jacob (1948) "Power versus Plenty as Objectives of Foreign Policy in the Seventeenth and Eighteenth Centuries," *World Politics* 1, 1 (October): 1-29.
- World Bank (1999) *World Development Indicators 1999* Washington: World Bank.