# ARGENTINA AND THE WORLD CAPITAL MARKET: SAVING, INVESTMENT, AND INTERNATIONAL CAPITAL MOBILITY IN THE TWENTIETH CENTURY

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## ABSTRACT

This paper is concerned with integration in the world capital market between the economies of the core and periphery in the twentieth century. It proceeds with some general observations and with a special focus on the case of Argentina. I will argue that understanding the changing relations in international capital markets offers important insights into the growth and development process, especially for the countries of the periphery. Moreover, study of the extent of market integration in history informs current conditions in the relationship between capital-scarce economies, like Argentina, and the global capital market as a whole. Looking to the future, the repercussions of economic reform and demographic change suggest likely implications for future saving, investment, and international capital flows.

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## 1. Introduction

For an intellectual program such as the study of long-run economic growth, a good test of a theory is first to explain the extreme cases in any distribution of outcomes; that is, the exceptional cases of national failure and success measured in terms of economic growth. Thus, a frequent proving ground for theories of economic growth, at least for the late twentieth century, has been the contrast between the fast-growing East Asian economies as compared with the slow-growing Latin American economies. What have we learned from this exercise concerning the sources of growth? Broadly, that Latin American inward-looking development constituted an unfortunate policy choice, with a large growth penalty, relative to the outward-looking choices of the Asian economies. That openness might matter for growth has been the theme of numerous empirical studies focusing on barriers to trade, the size of trade flows, tariff and non-tariff barriers, and other distortions in trade activity (Krueger, 1986; Feder, 1983; Easterly, 1993; Edwards, 1992; Harrison, 1995). But the exact linkages and relationships between "openness" and growth remain elusive, and have prompted calls for better measures of openness and a more detailed specification of the structural dynamics (Edwards, 1993; Taylor, 1998).

Of course, "openness" can mean many things, though it is usually construed in terms of commercial policy and trade. In this paper I do not wish to rule out the importance of trade policy for economic growth, but I do want to point out one other dimension of openness which has received less attention in the literature. My focus will be not on integration in the world goods market via trade, but integration in the global capital market. I will argue that this new dimension promises to enhance any explanation of economic performance in the long run, not least the history of twentieth century Latin America.

I will illustrate my case with reference to the economic history of Argentina, drawing on various strands of work which explore related themes: accumulation and growth in Argentine economic history (Taylor, 1992; 1998); Argentina and Latin America's relation to the world capital market (Taylor, 1994b; 1995; Taylor and Williamson, 1997); and empirical work on the evolution of the global capital market (Obstfeld, 1995; Obstfeld and Taylor, 1997; Taylor, 1996a; 1996b). With the development of additional quantitative evidence, I offer a new hypothesis that disintegration in capital markets may be an important, if less studied, part of the explanation for relative economic retardation in peripheral economies. This hypothesis has important implications for our understanding of the convergence debate in a world

which is not populated by countries which conform to our textbook closed-economy growth models.

The thesis is quite simple: any barriers to capital mobility raise the cost of capital for a less-developed, capital-scarce country, and thus act as a disincentive for accumulation. This kind of autarkic tendency will produce dynamic losses (a lower growth rate of output), as distinct from the static welfare losses (a lower level of output) associated, in classical trade theory, with barriers to the movement of finished goods. The theme of the paper will be to view Argentine experience through the lens of an open-economy growth model, focusing on capital accumulation. I link the historical record to both external shocks and internal policy choices which affected the long-run incentive to accumulate. To justify the argument I will need to review the historical record of saving, investment, and capital flows, and provide some comparative measures of Argentina's integration in the external capital market.

Looking back for historical evidence, in the 1914–1945 period I will focus on both external and internal barriers to accumulation, including the introduction of capital controls during the Great Depression. I will contrast this experience with the remarkable degree of integration in the gold standard era before 1914, when Argentina was a major player in a global capital market centered on London. Looking to the present and future for more comparisons, I will note that the process of economic reform in Argentina, as elsewhere, is, unsurprisingly, associated with increasing inflows of foreign capital. This may be viewed as part of a process of globalization in markets which, for all the stir it is causing, may only now be taking us back to the degree of integration taken for granted one hundred years ago (Sachs and Warner, 1995; Williamson, 1996).

In summary, Argentina's capital market is overcoming a legacy of unwilling foreign creditors in the 1910s and 1920s, capital controls in the 1930s and 1940s, capital price distortions in the 1950s and 1960s, and wayward monetary policies in the 1970s and 1980s. As a result, Argentina, like her neighbors, can expect a very different pattern of saving, investment, and external capital flows in her future, with profound effects for growth, of course, and also for the institutional structure of the economy. The causes of such a shift are several: a changing structure of prices, new demographic trends, and an external capital market exhibiting greater interest in emerging markets.

The historical path is understandable in terms of institutional and political developments, and in the context of Latin America's historical antipathy toward foreign capital penetration at the periphery—not least under schools of thought like dependency theory, structuralism, and Marxism. Now the twentieth century may end, as it began, with the region as ready and willing as her foreign creditors to countenance integration. Hence, I conclude with some speculation as to how the region's economies, like

Argentina's, might fare as Latin America's long hiatus of relative isolation from the external capital market comes to an end.

## 2. Historical Perspectives I:The Extent of Capital Movements

### *2.1. The Flow of Foreign Capital*

The broad historical record of Argentina's contact with the world capital market can be seen in the size or extent of net capital flows. These are measured here by the importance of the current account as a share of GDP (CA/Y) shown in Table 1 and Figure 1. By virtue of the current account identity, the current account (minus net foreign investment) equals gross national saving minus gross national investment (CA=S–I).[1] Hence, we may normalize with respect to GDP, and consider the elements of the identity

$$CA/Y = S/Y - I/Y.$$

For reference the table shows the saving and investment to GDP ratios. This important data, essential for an understanding of the scope of foreign capital flows to Argentina, was not previously available in a unified form; it has been constructed by the author from disparate sources as detailed in the Appendix ("Argentina's Long-Run Balance of Payments"). Several features merit mention in this data.

First, note the long investment led boom of the pre-1914 period; this was financed largely by foreign capital, principally from Britain, since high Argentine investment rates could not be satisfied by low domestic saving rates alone. Argentina was heavily dependent on external capital in this period, and by 1914 up to 50% of the nation's capital stock was foreign owned. This left the economy vulnerable to external shocks in capital markets (Taylor, 1992).

Second, moving to the interwar period, we see that World War One was the first of many such shocks, followed by the Great Depression and World War Two. External finance was virtually cut off during the late 1910s and early 1920s, as Argentina struggled to redirect financing operations from the shrinking source of funds in London to the new center for global finance in New York. Inflows recovered in the 1920s, but only briefly (Taylor, 1994b; Peters, 1934; Phelps, 1938).

Third, the Depression appears as a major watershed, in two respects, one obvious in the table, the other not. After 1930, Argentine investment was, in essence, domestically

[1]GDP (Y) is the sum of GNP (Q) and net factor income from abroad (NFIA). National production (Q) and imports (M) may be used for consumption (C), investment (I), government spending (G), or exports (X), so that Q+M= C+I+G+X. Thus, Y = C+I+G+NX+NFIA, where NX is net exports (X–M). The current account is defined by CA = NX+NFIA, and thus CA = S–I, where national saving S = Y–C–G.

financed. Investment rates started to climb in the long run, but are matched not by a rise in current account deficits, but by a secular upward drift in the saving rate. What is not obvious here is that this rise in the investment share of GDP is more a nominal than a real phenomenon. During this phase, Argentina's relative autarky introduced sizable wedges between the domestic and world relative price of capital; investment performance was poor in real terms, but looked outrageous in nominal terms (Díaz Alejandro, 1970; Taylor, 1994b).[2] As we shall note again later, this made Argentina an extreme case of low investment (and poor growth) driven by price distortions (De Long and Summers, 1991). The same disincentives to accumulation also gave Argentina a low holding return on capital, discouraging foreign inflows.

We should note here that most core economies experienced a major decline in net capital flows after 1930, as measured by declines in the absolute magnitude of the current account-to-GDP ratio. However, for a cross-section of twelve economies this ratio still remained fairly large and positive in the postwar era, and even increased in the 1970s and 1980s, as seen in Figure 2, suggesting some tendency toward increased international capital movements at the core (Taylor, 1996b). Yet Argentina's experience has been mostly in one (downward) direction, with very small flows in the postwar period.

Finally, in light of recent experience with increased capital flows to emerging markets, including Argentina and the rest of Latin America, we might consider the possible change in the direction of flows in recent and future years. There is no doubt that capital flows to LDCs are on the rise, the main source being an increase in private capital flows, such as emerging-market portfolio investments.

### *2.1. The Stock of Foreign Capital*

Viewed in historical perspective, and in a comparative framework, we can see that the flow of investment to the periphery has followed a particular course in the twentieth century, as noted by Twomey (1996). Essentially, capital inflows to a cross-section of LDCs have traced a pronounced U-shape since 1900, being high under the classical gold standard, diminishing in the interwar and especially the Depression years, then rising in the very recent past.

Twomey's evidence provides corroborative evidence here, because it consists of independent measures of foreign capital movement (Tables 2 and 3, and Figure 3). There are two distinctions. First, he measures the *stock* of foreign capital at a given point in time, versus the *flow* evidence supplied by the current account data I used above. Second,

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[2] That is, suppose that in nominal (local) prices, Argentina's I/Y was about 20% or so. This reflected very high investment goods prices relative to world levels. This price ratio was in the range of 2 to 3. Hence, at international prices the "real" measure of I/Y was very low, more like, say, 7%–10%.

he measures *gross* stocks of foreign capital, which will not account for countervailing flows.[3] Even so, precisely because it is based on entirely different data and measures, Twomey's data provides a useful cross check.

By this alternative measure, international investment appears to have diminished across the board after 1914, and especially after the Depression, and has only recovered in the last 20–30 years. The evidence is illuminating with respect to Argentina's position in Latin America, and Latin America's path as compared with a sample of Asian economies. Around the start of the century, Latin America was a major destination of foreign investment, most of it British. Argentina began as the most favored destination, and foreign capital played a very large part in the domestic economy. By mid-century, the position had changed markedly: foreign capital stocks had dwindled to very low levels, the low stocks reflecting the cumulative years of low flows in the wartime and interwar periods.[4]

This decline in foreign investment hit all countries, but was bound to especially hurt previously-large capital importers like Latin America, and, particularly, Argentina. Thus, circa 1950, the ratio of foreign capital to GDP (KF/Y) had more or less equalized across a sample of Latin and Asian LDCs, but its decline in the Latin group from 2.3 in 1900 to 0.3 in 1950 far exceeded the fall from 0.4 to 0.1 in the Asian group (Table 2). But the process did not stop there: in the second half of the twentieth century, a new wave capital flows did not seek out Latin America as before, but headed rather toward Asia. In relative terms, Latin America's stock of foreign investment, though growing as international capital markets were rebuilt after 1945, could not rise to former heights, nor even keep pace with the inflows to the Asian economies.[5] By 1990, the foreign investment to GDP ratio stood at 0.7 in the Asian group, but was still only 0.4 in the Latin group, not much above 1950 levels (Table 2).[6]

Argentina's changing fortunes with foreign capital emerge as something of a bellwether for Latin America as a whole. Initially, foreign capital penetration was very high, with KF/Y equal to 4.15 in 1900 (2.6 in 1913), much higher than in the region as a

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[3]That is, effective international asset swaps which might arise for diversification purposes. Such swaps change gross, but not net, stocks, and occur with no net flows, obviously.

[4]Thus, Twomey's stock figures reflect changing patterns of capital mobility, *ceteris paribus,* only with a lag of possibly several decades: a collapse in inflows today will not markedly reduce the stock of foreign capital tomorrow, but will gradually dilute it over years and decades as domestic capital formation proceeds.

[5]And note that for reasons of data scarcity, the Asian set excludes any of the "four dragons"—Hong Kong, Korea, Taiwan, and Singapore—that were even more favored with foreign capital in the 1960–1990 period than countries like India, Indonesia, Malaysia, Phillipines, and Thailand.

[6]A similar evolution is apparent in the weighted averages presented in panel B of Table 1 for a wider sample of countries.

whole. The ensuing retreat of foreign capital was much more pronounced in Argentina than elsewhere, partly given the very high initial penetration, and partly as a result of the very low minimum levels subsequently reached, with KF/Y equal to 0.12 in 1950 (0.14 in 1960). Then, as new flows have picked up in recent years, Argentina's measure of foreign capital penetration has risen relative to the rest of the region (KF/Y equal to 0.64 in 1989).

Reviewing the evidence in Table 3 again we can see that in the postwar period the supposedly more-outward-looking Asian economies have increased their share of foreign investment, just as Latin America has lost ground, relatively speaking. Argentina represents a major contributor to the decline in the presence of foreign capital in the region in the twentieth century, a trend that has only reversed in the last decade or so. Two implications might follow: that Argentina's separation from foreign capital in mid-century, whether by luck or by policy choice (or both), could explain low accumulation and growth in the same period (the 1920s to the 1980s); and the recent infusion of capital, if sustainable, might hold the promise of future growth financed by foreign savings in a manner reminiscent of a *Belle Époque* one hundred years past.

Although the evidence is preliminary and tentative, and there exists considerable cross-country heterogeneity, one possible conjecture springs to mind for Argentina, and even Latin America as a whole. Was the return to external capital market integration in the region relatively late? And might this account for the relative economic retardation and divergence of Latin America in the postwar period, as compared, say, with the rapid growth and convergence of the East Asian economies? The notion that increased capital mobility could speed convergence for a capital-scarce LDC economy makes sense intuitively, and the idea can be easily formalized in the neoclassical model (Barro, Mankiw and Sala-i-Martin, 1992). But does this idea have empirical content in the postwar era, a time when membership in the "convergence club" has appeared to be far from universal? Roughly speaking, was access to foreign capital one of the conditions for club membership? This paper can only pose, not answer this question, and provide some exploratory work, but this hypothesis is a basis for further research.

## 3. Historical Perspectives II: Institutional Developments

After gathering some more empirical evidence I will return to these issues, but first, to better ground this historical overview, I review the changing institutional background to these events. I will focus on three dimensions: the uses of different financial instruments for cross-border capital flows at various times; the costs and risks for capital flows

associated with changes in the international monetary regime; and the use of policy in the form of controls and price distortions that affect flows.

### *3.1. The Financial Instruments of Foreign Capital*

The principal flows of capital to Argentina in the late nineteenth century took the form of privately traded bonds and stocks, mostly for railroads and other infrastructure. Some were public issues, underwritten by the city, state, or national government, as in the case of the ill-fated issues of the Buenos Aires water and sewer system whose default triggered the Baring crisis. Banking intermediation took the form of classic merchant banking operations, handled almost exclusively by British banks, to place issues in the hands of investors. The domestic financial landscape was primitive, especially after the collapse of the branch banking network following the 1890s crisis. Direct investment was not uncommon and grew in the early twentieth century as British, and then American firms, became involved in shipping, meat packing, and other sectors (Díaz Alejandro, 1970; Ferns, 1973; Cortés Conde, 1979; Rock, 1987).

The retreat of foreign capital in the interwar period emphasized the need for local finance, but the response was disappointing: domestic financial development from 1914 to 1939 was only weak, fragile, and tentative (della Paolera and Taylor, 1997). As for foreign capital, issues overseas were few and now concentrated in New York. Commercial banking loans placed sovereign debt increasingly in the hands of private financial intermediaries (Díaz Alejandro, 1984a; 1984b; Phelps, 1938; Peters, 1934). Private flows were minuscule, and public (sovereign) debt came to dominate countries' net debt positions. This trend was typical of wider Latin American experience, and was to continue in the postwar era, culminating in the large exposure of U.S. banks in the Latin American debt crisis of the 1980s, a crisis for the banks comparable to Barings adventure in the 1880s and 1890s (Sachs, 1989; Cline, 1983).

Recent experience in the 1990s shows a shift away from such undiversified risk in the form of bank loans, and back toward increasing private portfolio capital flows directed at emerging stock markets in the region, with Argentina one of the prime targets. Sovereign debt is equally likely to be diversified in global bond funds. And foreign direct investment remains an active component, though not as dominant as in earlier decades when multinationals strove to evade tariff obstacles via the establishment of local subsidiaries. This represents a return to the mix of foreign investment instruments commonly seen at the turn of the century (Twomey, 1996). In this climate, Argentina's creditors, commercial and sovereign, supply a range of overseas finance options of a breadth not seen since the pre-1914 era.

### *3.2. The Monetary Regime*

The ebb and flow of instruments may be seen as an endogenous aspect of the long-run evolution of the market, comparable indeed to the ebb and flow in the volume of the flows themselves. However, a largely exogenous factor, especially from the perspective of a small (sometimes-open) economy, has been the equally erratic course of international monetary arrangements.[7] Most countries moved from fixed exchange rates under the classical gold standard, through mostly floating rates in the interwar period and the brief gold-standard resumption, back to fixed rates with an adjustable peg under Bretton Woods, then floating rates since 1973. It is natural to ask what implications these regime changes had for the smooth and efficient functioning of international capital markets: for example, was it the case that mobility suffered, to the disadvantage of capital-importing countries, following the dislocations, risks, and controls which arrived on the scene to shore up the collapsing gold standard and manage the Bretton Woods system? A number of studies confirm this presupposition (Bordo and Rockoff, 1996; Eichengreen, 1990; Lothian, 1995; Neal, 1985; Nurkse, 1954; Obstfeld and Taylor, 1997; Taylor, 1996a; 1996b).

Argentina's adherence to fixed rates was always less than strict, even under the classical gold standard, with notable suspensions of the gold standard before 1914 (Ford, 1962; Williams, 1920).[8] There followed a brief resumption in the 1920s, a peg that crawled quite rapidly before 1973, and a complete collapse of any commitment to fixed rates after black markets opened up in the hyperinflations of the 1970s and 1980s. The recent achievement of strict parity with the dollar under the Cavallo team is impressive in this historical context. All told, an international long-run perspective suggests that Argentina was much closer to the "average" world level of stability in terms of her monetary regime in the early part of this century versus the later: under the gold standard, Argentina followed the "rules of the game" at least some of the time, and maintained monetary stability for the most part; in the postwar period, both during and after Bretton Woods, the ability to maintain stability on the exchanges has never seemed like a serious possibility in the long run as volatility increased over time. At one time a matter of commitment to an exogenous world monetary system, monetary policy had gradually

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[7] For most small, peripheral countries, the exchange-rate regime, though subject to cross-country *interdependence*, was largely determined by events in the core countries who were the key players in world capital markets, e.g. the United States, Britain, France, and Germany (Eichengreen, 1996, chap. 1).

[8] And there is evidence that peripheral countries, like Argentina, paid a penalty in capital markets for this weaker commitment to the pre-1914 gold standard (Bordo and Rockoff, 1996).

developed into an endogenously determined policy tool. Only recently, has this pattern reversed.[9]

The theoretical implications for foreign capital penetration of this shift toward more volatile currency arrangements and less reliable monetary institutions (at least until the very recent past) would seem to be matched by the data also: an increase in exchange risk, would, *ceteris paribus*, be expected to dissuade foreign investors, both in and of itself (through the increased variance in returns) and, possibly, as an indicator of more widespread financial instability or insolvency within the state.

### *3.2. Explicit Policies Affecting Foreign Capital*

One last, and putatively exogenous, kind of policy affecting capital flows is, of course, the use of direct capital controls themselves. The key innovations here can be traced to the 1920s and 1930s, with the adoption of controls widespread in Latin America, Europe, and elsewhere (Nurkse, 1944; Einzig, 1934; Ellis, 1941). The main cause was a desire by countries to defend parities or restore gold pars at overvalued exchange rates inconsistent with monetary policy; controls were also deemed necessary to prevent capital flight which might be injurious to the credibility of the country's commitment to gold. The Great Depression spread across the globe urging further deflation, and exacerbated the *trilemma* faced by governments (Obstfeld and Taylor, 1997). The choice was to give up on at least one policy goal: either reject activist monetary policy and face the employment consequences of deflationary adjustment under the "rules of the game"; or, abandon the fixed exchange rate of the gold standard; or, limit the mobility of capital so as to free monetary policy from offsetting and neutralizing financial flows. A group of countries in central and eastern Europe (notably Germany, Austria, and Hungary) chose the third option; the gold bloc (France, Belgium, Netherlands, Switzerland) clung to orthodoxy and the "rules of the game" largely eschewing option one; most countries (like Britain and the U.S.) chose option two and quickly got off gold.

The Great Depression was no less a watershed for the Latin American economies, and, indeed, most policymakers in the region proved more creative—or "reactive" in Díaz Alejandro's (1984b) words—choosing a combination of both options two and three: devaluation *and* the use of some controls. Thus exchange risk (a floating exchange rate) was conjoined with the further risk that transfers could be impeded by legal restraints, adding potential transactions costs and restrictions for both inflows (inbound

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[9]This long view of monetary evoltuion has implications for Argentina's increasing isolation from capital markets after 1914, and her relatively slow reintegration in recent years. Exchange risk, driven by volatile monetary policy, poses a major discouragement to foreign investors, and the story would seem to hold across Latin America as a whole, as well as in contrast with Asia (Taylor, 1998).

investments) and outflows (repatriated profits). The main instrument was exchange control, which became widespread in Latin America in the 1930s, as many parts of the region joined a general movement toward the use of this policy instrument (Bratter, 1939). Table 4 shows the timing of this shift in various countries. It is noticeable that the more "passive" economies declined to employ controls: Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Mexico, Panama, and Peru. The "reactive" countries did not hesitate—most who did instigate controls did so by 1933.

For the most part, even in the countries which did impose controls, Latin American use of exchange controls was much less rigid than in Europe: for example, the black market was usually tolerated as a parallel market to the official channel, and capital movements were not precluded by controls, in marked contrast with central European practice. However, the initial purpose of controls, to protect currencies from capital flight, husband reserves, and stave off depreciation, soon became a secondary purpose, as exchange controls were manipulated to provide trade protection. Here, the Latin American experiments with multiple exchange rates were very successful (in the 1930s, that is), and their legacy would endure in the postwar era.[10] This transpired even though the authorities viewed exchange control as a temporary and unpleasant expedient, and, in a policy statement, they looked forward to the "monetary recovery of the principal countries, which will make it possible to do away with restrictions and return to the far more efficient working of a system of free exchange under a normal currency régime" (Bratter, 1939).

Unfortunately, external events and internal policy choice dashed such hopes. By the late 1930s the exchange control system was still firmly in place, augmented by a system of quantitative import restrictions introduced in 1938, and designed to give additional powers in the shaping of trade flows.[11] In the postwar international compact such a new approach to trade policy, unwelcome in 1929 and unthinkable in 1914, was the norm; and the bilateral bias it enshrined became the focus of decades of negotiation under GATT treaties and the MFN clause. In this way, the ramifications of 1930s exchange controls percolated for half a century through economic policy and international transactions in Argentina and the rest of the region.

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[10] The Argentine system of the 1930s was not untypical, but was by no means the most cumbersome or restrictive (other countries', like Uruguay's, were much more rigid). In the Argentine case some importers could be eligible for permits for cheap foreign exchange at the official rate, but others were free to use the parallel market for exchanges at the free rate, which was viewed as a "safety valve" for the official market. By 1937, 75% of transactions were in the official market, 25% in the free market, allowing the government considerable influence over the volume, nature, and source of imports (Bratter, 1939).

[11] After the Roca-Runciman treaty and its renewal, these developments left U.S. observers in no doubt that policy was still directed toward favorable dealings with Britain at the expense of U.S. export interests, with Argentina "the host of the bacillus of narrow bilateralism" (Salera, 1941).

## 4. Some Empirical Evidence

Thus, from macroeconomic statistics to the record on certain policies, we have ample anecdotal evidence and descriptive data to provide a *prima facie* case for the argument that Argentina's relationship to the external capital market has been characterized in the last century by a long period of relative isolation, in between an initial period of rapid growth financed by massive capital inflows, and a relatively short recent burst of integration. The decades of isolation coincided, for sure, with a tendency toward autarky in most spheres of the global capital market. But there is a distinct suspicion that Argentina, like the rest of Latin America, suffered more than most from the retreat of foreign capital, and that this adversity came potentially as a matter of choice, arising from a certain intellectual climate, a particular reading of history, and a policy-making framework hostile to foreign capital.

The key implication of this work is that economic growth was sacrificed through the tightening of the capital accumulation constraint that resulted from the discouragement of foreign capital. To make this argument more robust, the story of Argentina's relationship to world capital markets needs to be corroborated using other techniques and established metrics from the domain of international finance. This is a major task for future research (for other countries' economic histories too), but this section will review some criteria for capital mobility applied to Argentina and a sample of other economies for historical comparison. The first subsection below examines the relationship between saving and investment; the correlation of the two appears very loose at the turn of the century, but tightens over time, suggesting less flexibility in the current account. Secondly, I look at the real cost of capital in the postwar era, and examine the holding return on investments in a cross-section of countries; Latin America emerges as a region with high distortions and low returns, conditions discouraging to capital inflows, as a subsequent counterfactual analysis confirms.

### *4.1. Patterns of Saving and Investment*

The aim here is to examine the correlation of national saving and investment over time. An equality of the two is inevitable in a closed economy, but a very loose correlation might be expected in a perfectly open economy as suggested by Feldstein and Horioka (1980).[12] Since we are interested in comparing the Argentine saving-investment pattern

[12]However, this test is not uncontroversial, and operationalizing the test can be difficult: in cross section, omitted variables may account for observed raw correlations, and in time series, the long-run correlation will tend toward one as a result of the open-economy budget constraint (Obstfeld, 1995; Sinn, 1992; Taylor, 1994a; Tesar, 1991).

with that of other countries, we are forced to work in the time-series approach. A first step is to examine the raw correlations of the saving rate (S/Y) and investment rate (I/Y) from the standard Feldstein-Horioka regression

$$(I/Y)_t = \alpha + \beta\,(S/Y)_t + \varepsilon_t. \qquad (1)$$

Table 5 shows the Argentine raw correlations over more than 100 years, decade-by-decade. It is clear that Argentina's once-favorable position in terms of the ability to delink investment and saving decisions has eroded over the last century. Where once Argentina had a much lower saving-investment correlation, now the correlation is high. The same result holds whether we consider a pure correlation, or the slope coefficient. The impression is that since the mid-century disintegration of global capital markets, Argentina has become ever more isolated.

The impression can be confirmed with a more formal test of the saving-investment association for time series proposed by Jansen and Schulze (1996) and applied to historical panel data by Taylor (1996b). This more sophisticated model embodies a long run relationship between saving and investment, such that the current account reverts toward some equilibrium value in the long run. Accordingly, an Error Correction Model (ECM) representation is used, and for the present I use just the first-order model of the form

$$\Delta(I/Y)_t = \alpha + \beta\,\Delta(S/Y)_t + \gamma\,(S/Y - I/Y)_t + \delta\,(S/Y)_t + \varepsilon_t \qquad (2)$$

The coefficient $\gamma$ being nonzero is evidence of cointegration of the saving and investment rates and, thus, of an adjustment model, since the size of $\gamma$ is a measure of the model's adjustment speed.[13] The coefficient $\beta$ on the other hand is akin to a Feldstein-Horioka ("short-run") coefficient measured on differences (not levels). It is a measure of the extent to which shocks to saving in the current period pass immediately through to investment in the current period. Thus, both the coefficients, $\beta$ and $\gamma$ are of interest, since both convey information concerning the response of the current account to shocks in the form of pass through and subsequent adjustment to long-run equilibrium.

For the Argentine case, the behavior of these coefficients can be followed for several subperiods (I use longer-than-decade series now to increase the power of the tests). In Table 6 and Figure 4, I show these coefficients for Argentina and the broader sample of 11 countries for four historical periods (corresponding to various monetary

[13]It can be shown that the *t*-statistic of $\gamma$ is asyptotic normal (Kremers, Ericsson and Dolado, 1992). This propoerty usually holds for all countries in the sample (Taylor, 1996b).

regimes—the pre-1914 era, the interwar period, the Bretton Woods era, and the recent float). The Argentine parameters move in such a way as to suggest increasing isolation from international capital markets. For the wider sample, the parameters are much less volatile. The one-period pass-through coefficient is fairly stable over the four periods for the wider sample, and the current-account adjustment speed shows a marked inverted-U pattern indicating that a low point was reached in the middle of the century in terms of the sustainability of current account imbalances. For Argentina, that minimum point was in the pre-1914 era, with an adjustment speed of 0.18 (a current account half-life of about 3 years), rising to 0.31 in the interwar years (a half-life of about 2 years); in the postwar era the adjustment speed was about 0.41 prior to 1973 (a half-file of just over 1 year), rising to 0.78 (a half-life little more than six months). Clearly, current account imbalances have been getting ever less sustainable over time.

The results may be scrutinized in more detail.[14] However, for the present purpose they lend more weight to the working hypothesis. Argentina's access to foreign capital worked like a smoothly-functioning margin around the turn of the century: the current account appeared to adjust flexibly and endogenously to saving-investment imbalances, as in the classic open-economy model of capital markets. During the twentieth century this mechanism deteriorated markedly for Argentina. Over time, Argentina's current account provided more constraints and less slack, investment became more tied to what domestic saving could support, and external imbalances were smaller, and less sustainable.

### *4.2. The Relative Price of Capital and Returns to Foreign Investment After World War Two*

If the evidence thus far can be trusted, one is forced to ask the obvious question: how and why did Argentina become so isolated from the world capital market over time in the twentieth century? One factor, I argue, was the postwar turn toward inward-looking trade policies which had accumulation (and growth) implications as they distorted the domestic cost of capital goods. Such distortions were relatively small before World War Two, but in the 1950s and 1960s grew very large (Taylor, 1994b). Mobile capital goods, such as machinery and equipment, once traded between, say, the U.S. and Argentina with almost no transaction cost premium. Investors' rate of return to capital was not much affected by the gap between the domestic and foreign price of investment goods. Inward-looking policies changed all this and the relative home-versus-foreign relative price of capital doubled or tripled. Thus, equipment could cost two or three times as much in Buenos Aires as in American cities (Díaz Alejandro, 1970).

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[14]See Taylor (Taylor, 1996b).

I argue that such price distortions diminished the incentives for accumulation, and, thus, the motivation for foreign capital inflows. Thus, there is a direct link between commercial policies and capital market outcomes. I have already shown that Argentina, like Latin America, experienced relatively little foreign investment in the postwar era. I now want to show that this diminution in inflows coincided with, and might be explained by, such price disincentives.

Of course, the fact that capital long appeared reluctant to flow from rich to poor countries, so as to accelerate convergence, has represented a puzzle for growth theorists. Lucas (1990) asked why capital doesn't flow to poor countries, and concluded that externalities or missing factors, for example, human capital, could be responsible for what would otherwise be a conundrum. The puzzle for Lucas was that under conventional production function assumptions, the marginal product of capital appeared to be very high in LDCs: the formula for the marginal product of capital (MPK) would imply *ceteris paribus* that India, say, had a rate of return on capital an amazing 58 times higher than the United States in the late 1980s. Lucas considered a standard Cobb-Douglas technology where output per worker (y) is related to the capital per worker ratio (k) via $y=Ak^{\alpha}$. Under such conditions $MPK = \alpha A^{1/\alpha} y^{(\alpha-1)/\alpha}$, and he assumed, critically, the stability of parameters across countries, with an availability of common technologies (A), and guessed, reasonably, capital's share of output ($\alpha$) was equal to 0.4. The same methodology applied to middle-income countries would still produce stunning return differentials: Argentina would be predicted to have a rate of return six times higher than the United States. Could international capital markets function so badly as to allow such a failure of arbitrage?

The puzzle might be resolved through a different estimation procedure. Without assuming the presence of externalities or missing factors, one could attempt to get a better estimate of the marginal product of capital. In this manner, rejecting the *ceteris paribus* assumption, an elegant solution to the conundrum was suggested by Higgins (1993). He noted, first, that a very simple expression for the rate of return to capital could be derived from the identity $\alpha = MPK\ (K/Y)$, where K/Y is the capital-output ratio. Thus $MPK = \alpha\ (K/Y)^{-1}$, and this expression can be estimated using not just a guess of capital's share (just as in the Lucas method), but also using data on capital and output levels (as is now available in the latest Penn World Tables). Higgins showed that one advantage of this more flexible-form estimate of MPK is that it is valid under a wider range of technologies, including multi-good, multi-factor economies and production functions with Lucasian human-capital externalities.

Second, Higgins considered further adjustments needed to make valid comparisons of MPK across countries, showing that price distortions could also affect the incentive for capital migration A true holding return on domestic capital would need to

account for the fact that output Y would be sold *domestically* at a price P (the output price level), and capital would be bought *domestically* at a price PI (the investment price level).[15] It is already a matter of record that these prices do not conform across countries. And if the ratio of these prices, the relative price of capital, so varies across countries, then incentives are affected, as measured by the adjusted holding return, MPK*, given by

$$MPK_i^*(t) = \frac{P_i}{PI_i} MPK_i = \alpha \frac{P_i Y}{PI_i K} \qquad (3)$$

Thus, rather than using raw data on K and Y measured at international prices, we need to adjust each to domestic price levels. It is at this stage that price distortions enter: a high PI/P in Argentina would lower the effective holding return on capital. Thus, the method improves on Lucas' in two ways: (1) by the direct use of factor estimates of labor and capital, to allow some control for the national level of productivity (i.e., different technologies A) to the extent that they are reflected in the capital-output ratio;[16] and (2) by correcting for international price differences.

Table 7 updates and extends Higgins' analysis using the expanded data on capital stocks and outputs from Penn World Table 5.6. The data can exactly reproduce Lucas' calculation, an MPK ratio of 58 for India versus the United States, and by the same reckoning several dozen countries would have an MPK at least five times higher than the U.S., including all of the Latin American countries. The simple estimate proposed by Higgins eliminates this conundrum: the average level and dispersion of MPK falls relative to the United States (see Panel B). Neglecting some poor countries with notoriously weak data, we see that, even measured at international prices, the range of $MPK_i/MPK_{US}$ falls within a factor of one half to twice the U.S. level. Correcting for domestic price distortions trims the dispersion of $MPK_i$ even more: all but two countries (Madagascar and Paraguay, each with dubious data) have an MPK that falls within the range [0.1,0.6]. Only four just slightly exceed the U.S. value of 0.46. Most fall below, indicating perhaps why, indeed, little capital flows from the U.S. to any of these countries. This level of factor price dispersion may still appear large, but is not outrageously outside the bounds we might expect allowing for country-specific risk premia and given the noise in the data.

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[15]Strictly, output tomorrow from today's investment would be sold at a price P(t+1), and capital would be bought at a price PI(t) today. Empirically, we will be considering long-period averages, and will abstract from this intertemporal aspect of the problem.

[16]The method still rests on an assumption on capital's share, but direct evidence on factor shares across countries might not be expected show huge variations.

It is noteworthy that the United States appears to have a very productive capital stock: it moves about half way up these rankings at international prices, and is close to the top at domestic prices. In comparison, Argentina is more or less in the middle of all the rankings. Relative to her prime source of lending, the U.S., we see that Argentina might be expected to have an MPK about 20% higher than the U.S. absent price differences (0.43 versus 0.37), but given actual price differences her MPK is about 30% lower than that of the U.S. (0.35 versus 0.46), presenting no additional incentive for capital to migrate.

In sum, these results suggest that once country-specific factors like the productivity of the capital stock and the relative price structure are included in the analysis, there is less reason to suspect failure in the global capital market. Instead, we might consider the country-level determinants of investment, and saving too, to better understand the sources of international capital flows. This requires that any structural model of investment incentives properly control for the price structure, and in the next section I present such a model. The model does more than this: it also controls for demographic change. A long literature has studied the link between demography and saving (and growth), a tradition that dates back at least to Leff (1969). Space does not permit a review of this strand of research here, but for excellent surveys the reader might consult Hammer (1986) or Kelley (1994; 1988). Given what we know about the likely demographic evolution in years ahead, the model invites counterfactual demographic analysis to assess how a changing population structure might affect the movement of capital (Taylor, 1995). And, in a new extension of the model, I also study price counterfactuals: if the process of economic reform and globalization now touching on Argentina, and Latin America as a whole, continues unabated, then we would expect to find considerable convergence in international price structures. It is natural to ask, then, what implications reform-led price convergence might have for saving, investment, and capital flows in the future.

## 5. Future Prospects

So far I have considered the historical record, concluding that Argentina, like many countries in the region, has been relatively isolated from foreign capital for many decades in the twentieth century. This autarkic tendency began in the interwar period; only now, in the 1990s, may it be reversing, as new private capital flows to the region's emerging markets suggest a new linking of domestic and global financial domains. If this is an accurate description of historical experience, then what are the implications for future

international financial relations, the role of foreign capital, and economic growth in Argentina (and the rest of the Latin American region)?

The final issue is the easiest to address: the option of lending, if presented to a previously isolated borrower is, in theory, unambiguously welfare improving. There is no reason to suppose that any easing of the long-run capital accumulation constraint, via the supply of external capital, should not do anything but benefit the region. The cost of capital ought to be lowered, and thus higher rates of investment and economic growth should be feasible.

The second question—what does this imply for capital flows?—is more delicate. *Ceteris paribus*, the opening of an external capital market for a capital scarce region should induce large new inflows. And, indeed, the recent experience of the 1990s may reflect this, as foreign capital takes advantage of new opportunities long denied. However, in the longer run, changes in the structure of domestic saving and investment in the region, could well encourage capital to leave just as easily as enter. The crowding in or crowding out of foreign capital then becomes an issue once we entertain the notion that capital mobility is increasing to the point where the current account might adjust residually to changes in domestic saving and investment. What could drive such shocks to the current account? One can imagine several competing forces, but I will consider two that are amenable to empirical assessment.

First, Argentina, like her neighbors, is expected to continue through a demographic transition toward lower population growth, lower child dependent shares of the population, and higher worker shares of the population. The impact of such changes on capital flows via saving and investment is not obvious. More workers in an economy would enhance investment demand, crowding in foreign capital. But lower dependency rates should also mean higher saving rates, tending to crowd out foreign capital. On net, I claim, one might expect the increased savings effect to dominate, thus diminishing or even reversing capital flows to the region.

Second, countries experiencing economic reforms should, through a move toward more openness in trading relationships, see their domestic price structure more closely resemble that of the rest of the world. As noted, prices have for decades been far out of line with international prices, with the relative price of capital in Argentina sometimes twice that in the U.S. The object of economic reforms has been to attempt to diminish these price distortions. By this reckoning, the price distortions in Argentina, once removed, should make investment opportunities more profitable (increasing MPK), raising investment demand, and thus encouraging capital inflows.

I will now try to sort out these competing medium-run impacts in a model already developed (Taylor, 1995). Essentially, I have a model of real consumption (public and private) and investment, using growth, prices, and demographics as explanatory

variables. This model is estimated in the postwar period using regression analysis. I use the model for counterfactual analysis to deduce the shifts in saving and investment which might result from two medium-run shocks. The first shocks are changes in the age composition of the population predicted by U.N. demographers for the period to 2025. The second shocks are shifts in the relative price structure which might follow from a convergence to the "world" price structure as a result of economic reforms.

The model is specified as follows. The dependent variables are the real shares (at world prices) of private consumption (CC), investment (CI), and public consumption (CG) in output. The explanatory variables are the growth rate of output (g); the shares of population in three age groups (0–14 denoted D1, 15–64 denoted D2, and 65+ denoted D3); and the log relative price of each aggregate demand component (ln[PC/P], ln[PI/P], ln[PG/P]). The model was estimated using random effects estimation on quinquennially-averaged panel data for the period 1965–1989 for a wide range of cross sections. Full results are reported in Taylor (1995), but for the present I will use the estimates derived for a panel of 41 middle-income economies.[17]

The results of the estimation are shown in Table 8. Panel A shows the estimated equations and Panel B the implied partial derivatives, where the demographic coefficients are estimated with an interaction term corresponding to a growth rate of 2%. Panel C uses these estimates to consider the implications of the two counterfactuals. First, a shift to the 2025 age distribution, which from Panel C implies a large reduction in the youth dependency rate, with offsetting increases in the working age and elderly share; both effects combined would be expected to raise saving and investment simultaneously.[18] Second, an imposition of international price levels, implying the total elimination of domestic-world price differences; here, for example, Argentina, like the whole of Latin America, could anticipate a 20% decrease in the relative price of capital, and smaller-

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[17] In Taylor (1995) I my analysis focused on a panel of 23 Latin American economies (SCAM). The results here are qualitatively similar, except as noted below. I use this alternative sample to illustrate the sensitivity of the results, and because certain parameters are more precisely estimated with the middle-income (MIDINC) sample. Random effects and fixed effects dominate pooling according to standard tests. Random effects or fixed effectys may be preferred for certain samples and certain variables, but I do not believe the results are qualitatively different for the two. For both the SCAM and MIDINC samples, fixed effects is preferred for CC, random effects for CI and CG. For consistency, the same type of effects were kept across all specifications. These qualifications were omitted from Taylor (1995), and I am grateful to Matthew Higgins for pointing them out.

[18] In this counterfactual, Argentina, at a more mature point in the demographic transition, can be expected to see more of a shift to the elderly than in Latin America as a whole. But note that increases in the elderely group or the working group lower consumption. That is, the dependency burden is purely a youth effect. This is not inconsistent with a wider literature, which notes that dependency effects of the elderly often lead to higher savings via bequests and other forms of accumulation (Kotlikoff and Summers, 1981).

scale increases in the relative costs of public and private consumption goods; again, both effects combined would be expected to raise saving and investment simultaneously.[19]

Panel C shows that the impacts are non-trivial. In Latin America as a whole demographic change might raise saving ratios by 5.6 percentage points, and investment ratios by 3.2 percentage points. The predicted impacts in Argentina are smaller (3.4 and 1.1, respectively) since a less dramatic demographic change is expected. Overall, for most countries, the demographic impacts on saving dominate the impacts on investment. Hence, in response pure demographic shocks alone, almost all countries can be expected to shift toward current account surplus by an average 2.3 percent of output.[20] Demographic change would generate net crowding out for foreign capital within Latin America as increasing domestic saving supplies expand faster than domestic investment demand.

However, other changes can be foreseen which might upset this prediction, namely price reforms now underway and the insistent progress of globalization and integration. If this process should force some convergence between regional and "world" price levels, then Panel C indicates we can expect substantial shifts in saving, investment, and capital flows. The small rise in consumption price levels thus generated could be expected to yield only a modest increase in saving ratios of perhaps 0.5 percentage points. The major impact on capital markets, however, is in the elimination of capital price distortions, a price twist already identified as a major source of low returns in the region. Should the relative price of capital fall to world levels (by 25% on average, 20% in Argentina), then investment ratios would be expected to experience a pronounced rise, a pure demand effect corresponding to a move down the investment demand curve. This might raise investment ratios by 5.3 percentage points in the region (3.4 in Argentina). Together, the modest savings increase and the large investment increase imply that foreign capital would be *crowded in* to Latin America by price reform, with the CA/Y ratio moving toward deficit by 4.8 percentage points (2.4 in Argentina). This is not too

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[19] Of course, in reality, the elimination of price dispersion through globalization, and the path of the demographic transition, may not in the future correspond to the comparative statics of these counterfactuals. However, given the linearity of our model, it is easy to scale impacts to correspond to intermediate effects. For example, if demographic changes occur at only half the U.N. predicted rate, or if price dispersion falls by 50% not 100%, then the estimated corresponding counterfactual impacts need to be multiplied by one half. Thus, sensitivity analysis is quite straight forward. Still, the qualitative impacts remain, and it is interesting to see their estimated order of magnitude.

[20]This result may be sensitive on the investment side of the calculation, but only in such a way as to *increase* the current account impact. For the SCAM sample I estimate larger negative effects on investment via the elderly share, sufficient to lowerinvestment ratios by an average of 1.3 points in the region. Saving shares riseby an estimated 3.8 points, implying a change of 5.2 points in the current account ratio for the sample.

surprising, and may be understood as one fundamental structural change arising from recent reforms, encouraging the strong interest in investors in this emerging market.

Two observations follow from these results. First, what of the two effects combined? They are clearly countervailing, and the net effect will be a negative shock to the current account in most countries, averaging 2.5% across the region (though the effects almost exactly cancel in the case of Argentina). The deficit inducing effect of the price reforms is welfare enhancing, but calls for foreign capital flows to fund newly profitable marginal investments. Second, note that even if the net effects might cancel, the underlying shifts in saving and investment are large, as might be the shifts in the current account if the shocks are not synchronized.

Although discussion has been in terms of GDP ratios, the total GDP of Latin America is about two trillion dollars, so each percentage point shift means an annual impact on capital transactions of around twenty billion dollars in the region. Thus, finally, we should note the enormous implications for financial development suggested by these results. Economic reform, if it encourages foreign investment, could bring billions of dollars of foreign capital into the region. This will require intermediation and other services to support the mobilization of such vast sums across borders. If this is joined to the predicted demographic impact on investment, a large net increase in corporate finance will be required to satisfy this investment demand from domestic or foreign sources. Finally, if demographic and price reforms generate a large increase in savings in Argentina and the region as a whole, a vast expansion in the scope of personal banking, investment management, and other types of financial intermediation could be expected in the decades ahead to mobilize these new billions emanating from domestic investors. All such developments will surely dramatically transform the financial landscape.

## 6. Conclusions

Like so many countries of the periphery, Argentina has endured a turbulent relationship to foreign capital in the twentieth century. Since it is now undisputed that capital accumulation has played a central role in the growth of nations since 1900, as understood in the neoclassical theory of economic growth, we are forced to reckon with the consequence of these phases of integration and disintegration in international capital markets as they have impinged on global growth and convergence. *A priori,* we would expect such developments to be of critical import for capital-scarce borrowing countries, which might include most of the non-core economies.

The story told here applies to Argentina, but it is a comparative exercise, that merits wider application and testing to discern its validity. Undoubtedly, historians must

search for further evidence to assess changes in the degree of capital mobility across time and space (Obstfeld and Taylor, 1997; Taylor, 1996a; 1996b). However, the preliminary evidence here backs up the working hypotheses: first, that all LDC borrower countries faced a marked decline in access to foreign capital in mid-century, following the dislocations of two world wars and a depression; second, that capital mobility appears to be in resurgence in recent decades; and third, that the extent of this resurgence has varied in a way which appears to bear some relationship to countries' price distortions and economic outcomes.

Argentine history offers a compelling example of the differences that access and incentives to foreign capital can make. The collapse in foreign investment after 1914 reflected the bad luck of a peripheral borrower dependent on external finance at a time of severe shocks to the external capital market. Many countries suffered this shock, though Argentina's extreme dependence on foreign capital made the shock hurt more than elsewhere. After mid-century, however, Argentine experience, in common with much of Latin America, took on a new aspect, with larger price distortions for investment having a dramatic impact on cross-country comparisons of the marginal productivity of capital. As global capital flows grew in recent decades they steered more away from countries like Argentina, and more toward regions with lower price distortions, like East Asia.

The future, however, promises something fresh. Demographic change may serve to raise saving supply and investment demand in the region, but the net saving effect could dominate and make Argentina a net capital exporter. Yet price reform, if it stimulates long-repressed investment, could attract renewed capital inflows. In each scenario, Argentina's relationship with the external capital market could be a lot livelier than it has been for some time.

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**Table 1**
**Argentina: Saving, Investment, and the Current Account, 1885–1989**

| | S/Y | I/Y | CA/Y |
|---|---|---|---|
| 1885–1889 | –0.08 | 0.10 | –0.19 |
| 1890–1894 | 0.02 | 0.10 | –0.08 |
| 1895–1899 | 0.03 | 0.07 | –0.04 |
| 1900–1904 | 0.07 | 0.09 | –0.01 |
| 1905–1909 | 0.10 | 0.16 | –0.06 |
| 1910–1914 | 0.06 | 0.14 | –0.08 |
| 1915–1919 | 0.10 | 0.07 | 0.03 |
| 1920–1924 | 0.04 | 0.10 | –0.06 |
| 1925–1929 | 0.11 | 0.13 | –0.02 |
| 1930–1934 | 0.06 | 0.09 | –0.03 |
| 1935–1939 | 0.11 | 0.11 | 0.00 |
| 1940–1944 | 0.13 | 0.10 | 0.03 |
| 1945–1949 | 0.15 | 0.12 | 0.03 |
| 1950–1954 | 0.15 | 0.16 | –0.01 |
| 1955–1959 | 0.13 | 0.16 | –0.03 |
| 1960–1964 | 0.20 | 0.20 | 0.00 |
| 1965–1969 | 0.28 | 0.27 | 0.00 |
| 1970–1974 | 0.25 | 0.25 | 0.00 |
| 1975–1979 | 0.30 | 0.30 | 0.00 |
| 1980–1984 | 0.20 | 0.22 | –0.02 |
| 1985–1989 | 0.16 | 0.18 | –0.02 |

*Source*: Appendix.

**Table 2**
**Stocks of Foreign Investment in Less Developed Countries, 1900–1990**

| | 1900 | 1914 | 1929 | 1938 | 1967 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|
| A. Foreign Investment | | | | | | | |
| Latin America | 2.2 | 8.4 | 6.5 | 5.5 | 9.0 | 20.7 | 27.7 |
| *share of total* | *0.35* | *0.54* | *0.59* | *0.47* | *0.55* | *0.45* | *0.37* |
| Asia | 1.8 | 5.1 | 3.7 | 4.8 | 4.7 | 13.7 | 30.7 |
| *share of total* | *0.29* | *0.32* | *0.34* | *0.41* | *0.28* | *0.30* | *0.41* |
| Africa | 2.3 | 2.3 | 0.7 | 1.4 | 2.8 | 11.0 | 16.1 |
| *share of total* | *0.37* | *0.15* | *0.06* | *0.12* | *0.17* | *0.24* | *0.22* |
| Total | 6.3 | 15.7 | 11.0 | 11.6 | 16.5 | 45.5 | 74.5 |
| B. Foreign Investment/GDP | | | | | | | |
| Latin America | 1.20 | 2.71 | 1.26 | 0.87 | 0.33 | 0.33 | 0.47 |
| Asia | 0.17 | 0.40 | 0.23 | 0.26 | 0.11 | 0.15 | 0.32 |
| Africa | 1.33 | 1.17 | 0.24 | 0.35 | 0.23 | 0.34 | 0.74 |
| Total | 0.44 | 0.89 | 0.45 | 0.41 | 0.20 | 0.24 | 0.42 |

*Notes*: Total stock of foreign investment and GDP in billions of U.S. dollars at 1900 U.S. prices. Weighted averages in each region.
*Source*: Twomey(1996, Tables 2 and 4).

**Table 3**
**Foreign Investment in Latin America and Asia, 1900–1990**

| | 1900 | 1914 | 1929 | 1938 | 1950 | 1970 | 1980 | 1990 |
|---|---|---|---|---|---|---|---|---|
| Foreign Investment/GDP | | | | | | | | |
| Argentina | 4.15 | 2.60 | 1.12 | 0.87 | 0.12 | 0.14 | 0.23 | 0.64 |
| Brazil | 2.55 | 2.96 | 0.92 | 0.70 | 0.18 | 0.17 | 0.32 | 0.36 |
| Chile | 1.88 | 2.11 | 1.56 | 1.63 | 0.49 | 0.38 | 0.27 | 0.40 |
| Colombia | 0.74 | 0.27 | 0.34 | 0.35 | 0.24 | 0.19 | 0.13 | 0.21 |
| Mexico | 1.55 | 1.83 | 1.28 | 0.79 | 0.17 | 0.12 | 0.23 | 0.32 |
| Peru | 1.78 | 1.21 | 0.64 | 0.46 | 0.22 | 0.22 | 0.32 | 0.48 |
| Uruguay | 3.14 | 1.62 | 0.67 | 0.59 | 0.18 | 0.13 | — | 0.31 |
| Venezuela | 2.52 | 0.98 | 1.05 | 0.73 | 0.55 | 0.36 | 0.32 | 0.47 |
| India | 0.25 | 0.34 | 0.30 | 0.45 | 0.08 | 0.18 | 0.11 | 0.25 |
| Indonesia | 0.62 | 0.95 | 1.11 | 1.29 | — | 0.29 | 0.66 | 1.68 |
| Malaysia | — | 1.48 | 1.04 | 0.79 | — | 0.33 | 0.29 | 0.58 |
| Philippines | — | 0.17 | 0.22 | — | — | 0.34 | 0.29 | 0.58 |
| Thailand | — | 0.38 | 0.35 | 0.30 | — | 0.16 | 0.21 | 0.33 |

*Notes*: For Argentina and Uruguay, 1990 column shows 1989 data..
*Source*: Twomey (1996, Tables 5 and 9).

**Table 4**
**Latin America's Adoption of Capital Controls as of 1939**

| | Exchange Control, 1930–39 | | | Free Market Activity | | | Black |
|---|---|---|---|---|---|---|---|
| Country | None | Begun | Abolished | Tolerated | Controls | None | Market |
| Argentina | | 1931 | | | • | | |
| Bolivia | | 1931 | | | • | | • |
| Brazil | | 1931 | | | | • | |
| Chile | | 1931 | | | • | | |
| Colombia | | 1931 | | | | • | • |
| Costa Rica | | 1932 | | | • | | |
| Cuba | • | | | • | | | |
| Dominican Republic | • | | | • | | | |
| Ecuador | | 1933 | 1937 | • | | | |
| El Salvador | • | | | • | | | |
| Guatemala | • | | | • | | | |
| Haiti | • | | | • | | | |
| Honduras | | 1934 | | | | • | |
| Mexico | • | | | • | | | |
| Nicaragua | | 1932 | | | • | | |
| Panama | • | | | • | | | |
| Paraguay | | 1932 | | | | | |
| Peru | • | | | • | | | |
| Uruguay | | 1932 | | | | • | |
| Venezuela | | 1936 | | • | | | |

*Source*: Bratter (1939).

**Table 5**
**Saving-Investment Relationship: Argentina, Raw Data**

| | Corr(I/Y,S/Y) | β(I/Y,S/Y) |
|---|---|---|
| 1890 – 1900 | –0.29 | –0.15 |
| 1900 – 1910 | 0.43 | 0.70 |
| 1910 – 1920 | –0.62 | –0.82 |
| 1920 – 1930 | 0.79 | 0.43 |
| 1930 – 1940 | 0.22 | 0.14 |
| 1940 – 1950 | 0.30 | 0.13 |
| 1950 – 1960 | 0.23 | 0.10 |
| 1960 – 1970 | 0.94 | 0.94 |
| 1970 – 1980 | 0.93 | 0.84 |
| 1980 – 1990 | 0.96 | 1.02 |

*Notes*: Corr(I/Y,S/Y) is the correlation of I/Y and S/Y. β(I/Y,S/Y) is the OLS time series coefficient from a regression of I/Y on S/Y with a constant.
*Source*: Appendix.

**Table 6**
**Saving-Investment Relationship: Argentina, ECM Estimates**

| | T | R sq. | α | β | γ | δ |
|---|---|---|---|---|---|---|
| 1880–1913 | 28 | .10 | 0.02 | –0.01 | 0.18 | –0.20 |
| | | | (1.47) | (0.08) | (1.42) | (1.58) |
| 1914–1945 | 32 | .20 | 0.03 | 0.11 | 0.31 | –0.29 |
| | | | (1.96) | (1.15) | (2.41) | (2.01) |
| 1946–1971 | 26 | .39 | 0.02 | 0.45 | 0.41 | –0.08 |
| | | | (1.11) | (3.44) | (2.53) | (0.93) |
| 1972–1992 | 21 | .71 | 0.04 | 0.87 | 0.78 | –0.14 |
| | | | (2.51) | (6.18) | (3.08) | (2.28) |

*Notes*: Coefficients shown are from the ECM regression equation:

$$\Delta I/Y = \alpha + \beta\, \Delta S/Y + \gamma\, (S/Y - I/Y) + \delta\, S/Y.$$

Absolute t-statistics in parentheses. See text.
*Source*: Taylor (1996b) modified using the revised Argentine data in the Appendix.

**Table 7**
**Estimated Marginal Product of Capital, 1985–1989**

**A. Basic Data**

| | GDP per worker (1985 intl.$) | PI/P | K/Y (intl. prices) | K/Y (domestic prices) | Lucas $MPK_i/MPK_{US}$ ($\alpha$=0.4) | Lucas $MPK_i/MPK_{US}$ ($\alpha$=1/3) | Higgins MPK (intl. prices, $\alpha$=1/3) | Higgins MPK (domestic prices, $\alpha$=1/3) |
|---|---|---|---|---|---|---|---|---|
| Malawi | 1,171 | 2.60 | 0.38 | 0.97 | 210.3 | 1252.3 | 0.88 | 0.35 |
| Madagascar | 1,604 | 7.00 | 1.05 | 7.39 | 134.4 | 692.2 | 0.32 | 0.05 |
| Kenya | 1,990 | 2.07 | 0.51 | 1.05 | 88.5 | 394.5 | 0.65 | 0.32 |
| Zambia | 2,265 | 1.46 | 0.69 | 1.10 | 114.3 | 557.6 | 0.48 | 0.32 |
| Nepal | 2,271 | 2.55 | 0.34 | 0.91 | 74.5 | 313.3 | 0.99 | 0.37 |
| Nigeria | 2,312 | 1.64 | 0.38 | 0.60 | 86.3 | 382.5 | 0.88 | 0.57 |
| Sierra Leone | 2,424 | 8.71 | 0.09 | 0.79 | 94.1 | 430.1 | 3.71 | 0.43 |
| Zimbabwe | 2,760 | 1.56 | 1.69 | 2.66 | 58.3 | 226.6 | 0.20 | 0.13 |
| India | 2,989 | 1.71 | 0.61 | 1.05 | 58.0 | 224.6 | 0.55 | 0.32 |
| Ivory Coast | 3,543 | 2.00 | 0.31 | 0.62 | 51.0 | 192.3 | 1.08 | 0.54 |
| Philippines | 4,479 | 1.35 | 0.86 | 1.16 | 34.7 | 113.3 | 0.39 | 0.29 |
| Honduras | 4,614 | 1.55 | 0.94 | 1.44 | 44.2 | 156.2 | 0.35 | 0.23 |
| Jamaica | 4,933 | 1.44 | 0.71 | 1.06 | 19.3 | 51.7 | 0.47 | 0.33 |
| Bolivia | 5,390 | 2.17 | 1.17 | 2.52 | 35.9 | 118.5 | 0.29 | 0.13 |
| Thailand | 5,549 | 1.46 | 0.79 | 1.19 | 13.9 | 33.8 | 0.42 | 0.28 |
| Sri Lanka | 5,610 | 1.83 | 1.52 | 2.76 | 25.1 | 73.5 | 0.22 | 0.12 |
| Swaziland | 5,689 | 1.36 | 0.73 | 1.21 | 23.0 | 65.4 | 0.47 | 0.30 |
| Paraguay | 6,149 | 1.32 | 0.14 | 0.19 | 25.7 | 76.0 | 2.40 | 1.77 |
| Morocco | 6,706 | 2.29 | 0.35 | 0.81 | 24.3 | 70.3 | 0.97 | 0.42 |
| Botswana | 6,944 | 1.62 | 0.68 | 0.96 | 17.3 | 44.9 | 0.49 | 0.39 |
| Dominican Rep. | 7,300 | 1.26 | 0.76 | 1.00 | 21.9 | 61.5 | 0.44 | 0.34 |
| Guatemala | 7,380 | 1.71 | 0.51 | 0.88 | 23.9 | 69.0 | 0.65 | 0.38 |
| Turkey | 7,835 | 1.13 | 0.94 | 1.01 | 11.4 | 25.7 | 0.35 | 0.33 |
| Peru | 8,197 | 1.14 | 1.13 | 1.39 | 20.0 | 55.0 | 0.30 | 0.24 |
| Poland | 8,353 | 1.19 | 1.38 | 1.68 | 8.8 | 18.3 | 0.24 | 0.20 |
| Panama | 8,963 | 0.98 | 1.81 | 1.72 | 14.0 | 34.1 | 0.19 | 0.19 |
| Mauritius | 9,074 | 2.44 | 0.32 | 0.81 | 5.9 | 10.8 | 1.04 | 0.42 |
| Ecuador | 9,288 | 1.11 | 1.69 | 1.87 | 16.7 | 42.7 | 0.20 | 0.18 |
| Colombia | 9,794 | 1.33 | 1.30 | 1.78 | 13.0 | 30.6 | 0.26 | 0.19 |
| Chile | 10,860 | 0.91 | 0.72 | 0.66 | 8.9 | 18.5 | 0.46 | 0.50 |
| Yugoslavia | 11,090 | 1.14 | 0.74 | 0.84 | 6.5 | 12.2 | 0.46 | 0.42 |
| Iran | 11,820 | 1.18 | 1.04 | 1.23 | 13.4 | 32.0 | 0.34 | 0.30 |
| Korea, Rep. | 13,056 | 1.00 | 1.12 | 1.11 | 5.6 | 10.1 | 0.30 | 0.30 |
| Portugal | 13,413 | 1.50 | 0.77 | 1.14 | 5.1 | 8.8 | 0.43 | 0.29 |
| ***Argentina*** | ***14,909*** | ***1.22*** | ***0.79*** | ***0.96*** | ***6.3*** | ***11.6*** | ***0.43*** | ***0.35*** |
| Taiwan | 15,711 | 0.95 | 1.41 | 1.34 | 4.1 | 6.6 | 0.24 | 0.25 |
| Syria | 16,014 | 1.63 | 0.98 | 1.49 | 9.6 | 20.4 | 0.34 | 0.23 |
| Mexico | 16,311 | 1.40 | 0.82 | 1.14 | 5.7 | 10.2 | 0.41 | 0.29 |
| Greece | 16,879 | 1.06 | 1.36 | 1.45 | 4.4 | 7.2 | 0.25 | 0.23 |
| Venezuela | 18,371 | 1.27 | 1.05 | 1.35 | 5.0 | 8.6 | 0.32 | 0.25 |
| Hong Kong | 20,111 | 1.40 | 0.59 | 0.83 | 1.5 | 1.8 | 0.56 | 0.40 |
| Japan | 20,485 | 0.86 | 1.56 | 1.35 | 1.5 | 1.7 | 0.21 | 0.25 |
| Ireland | 20,811 | 0.87 | 1.02 | 0.89 | 3.1 | 4.5 | 0.33 | 0.38 |
| Israel | 23,055 | 0.91 | 0.95 | 0.89 | 2.7 | 3.7 | 0.35 | 0.38 |
| Spain | 23,720 | 0.88 | 1.01 | 0.91 | 2.8 | 3.9 | 0.33 | 0.37 |
| Denmark | 24,542 | 0.83 | 1.28 | 1.07 | 1.4 | 1.6 | 0.26 | 0.31 |
| Iceland | 24,910 | 0.80 | 0.75 | 0.60 | 1.5 | 1.7 | 0.45 | 0.56 |
| Austria | 25,026 | 0.97 | 1.28 | 1.25 | 1.7 | 2.1 | 0.26 | 0.27 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| U.K. | 25,317 | 0.98 | 0.75 | 0.76 | 1.7 | 2.0 | 0.44 | 0.44 |
| Finland | 25,652 | 0.79 | 1.63 | 1.32 | 1.6 | 1.8 | 0.20 | 0.25 |
| New Zealand | 26,001 | 0.91 | 1.24 | 1.17 | 1.8 | 2.1 | 0.27 | 0.29 |
| Sweden | 27,620 | 0.86 | 1.27 | 1.11 | 1.3 | 1.5 | 0.26 | 0.30 |
| Germany, West | 28,423 | 0.85 | 1.74 | 1.48 | 1.4 | 1.5 | 0.19 | 0.23 |
| France | 28,693 | 0.80 | 1.16 | 0.95 | 1.5 | 1.7 | 0.29 | 0.35 |
| Italy | 29,061 | 0.87 | 1.02 | 0.90 | 1.8 | 2.1 | 0.33 | 0.37 |
| Norway | 29,238 | 0.86 | 1.58 | 1.38 | 1.5 | 1.7 | 0.21 | 0.24 |
| Belgium | 29,243 | 0.83 | 1.18 | 0.98 | 1.6 | 1.9 | 0.28 | 0.34 |
| Netherlands | 29,589 | 0.96 | 1.04 | 1.00 | 1.6 | 1.9 | 0.32 | 0.33 |
| Australia | 30,066 | 0.90 | 1.18 | 1.08 | 1.4 | 1.5 | 0.28 | 0.31 |
| Switzerland | 31,391 | 0.84 | 2.16 | 1.84 | 1.1 | 1.2 | 0.15 | 0.18 |
| Canada | 33,392 | 0.79 | 1.15 | 0.93 | 1.1 | 1.1 | 0.29 | 0.36 |
| Luxembourg | 34,394 | 0.90 | 1.35 | 1.22 | 1.3 | 1.4 | 0.25 | 0.27 |
| **U.S.A.** | **35,477** | **0.78** | **0.91** | **0.73** | **1.0** | **1.0** | **0.37** | **0.46** |
| Mean | 14,924 | 1.49 | 0.99 | 1.27 | 23.5 | 95.4 | 0.49 | 0.34 |
| Std. Dev. | 10,380 | 1.25 | 0.43 | 0.90 | 37.9 | 203.4 | 0.53 | 0.21 |

**B. MPK Rankings, Different Methods**

| | Lucas $MPK_i/MPK_{US}$ ($\alpha$=0.4) | | Higgins MPK (intl. prices, $\alpha$=1/3) | | Higgins MPK (domestic prices, $\alpha$=1/3) |
|---|---|---|---|---|---|
| Malawi | 210.3 | Sierra Leone | 3.71 | Paraguay | 1.77 |
| Madagascar | 134.4 | Paraguay | 2.40 | Nigeria | 0.57 |
| Zambia | 114.3 | Ivory Coast | 1.08 | Iceland | 0.56 |
| Sierra Leone | 94.1 | Mauritius | 1.04 | Ivory Coast | 0.54 |
| Kenya | 88.5 | Nepal | 0.99 | Chile | 0.50 |
| Nigeria | 86.3 | Morocco | 0.97 | **U.S.A.** | **0.46** |
| Nepal | 74.5 | Malawi | 0.88 | U.K. | 0.44 |
| Zimbabwe | 58.3 | Nigeria | 0.88 | Sierra Leone | 0.43 |
| India | 58.0 | Guatemala | 0.65 | Yugoslavia | 0.42 |
| Ivory Coast | 51.0 | Kenya | 0.65 | Mauritius | 0.42 |
| Honduras | 44.2 | Hong Kong | 0.56 | Morocco | 0.42 |
| Bolivia | 35.9 | India | 0.55 | Hong Kong | 0.40 |
| Philippines | 34.7 | Botswana | 0.49 | Botswana | 0.39 |
| Paraguay | 25.7 | Zambia | 0.48 | Guatemala | 0.38 |
| Sri Lanka | 25.1 | Swaziland | 0.47 | Israel | 0.38 |
| Morocco | 24.3 | Jamaica | 0.47 | Ireland | 0.38 |
| Guatemala | 23.9 | Chile | 0.46 | Italy | 0.37 |
| Swaziland | 23.0 | Yugoslavia | 0.46 | Nepal | 0.37 |
| Dominican Rep. | 21.9 | Iceland | 0.45 | Spain | 0.37 |
| Peru | 20.0 | U.K. | 0.44 | Canada | 0.36 |
| Jamaica | 19.3 | Dominican Rep. | 0.44 | France | 0.35 |
| Botswana | 17.3 | Portugal | 0.43 | **Argentina** | **0.35** |
| Ecuador | 16.7 | **Argentina** | **0.43** | Malawi | 0.35 |
| Panama | 14.0 | Thailand | 0.42 | Belgium | 0.34 |
| Thailand | 13.9 | Mexico | 0.41 | Dominican Rep. | 0.34 |
| Iran | 13.4 | Philippines | 0.39 | Netherlands | 0.33 |
| Colombia | 13.0 | **U.S.A.** | **0.37** | Turkey | 0.33 |
| Turkey | 11.4 | Turkey | 0.35 | Jamaica | 0.33 |
| Syria | 9.6 | Honduras | 0.35 | India | 0.32 |
| Chile | 8.9 | Israel | 0.35 | Kenya | 0.32 |
| Poland | 8.8 | Syria | 0.34 | Zambia | 0.32 |
| Yugoslavia | 6.5 | Iran | 0.34 | Denmark | 0.31 |
| **Argentina** | **6.3** | Spain | 0.33 | Australia | 0.31 |

| | | | | | |
|---|---|---|---|---|---|
| Mauritius | 5.9 | Ireland | 0.33 | Sweden | 0.30 |
| Mexico | 5.7 | Italy | 0.33 | Korea, Rep. | 0.30 |
| Korea, Rep. | 5.6 | Netherlands | 0.32 | Swaziland | 0.30 |
| Portugal | 5.1 | Madagascar | 0.32 | Iran | 0.30 |
| Venezuela | 5.0 | Venezuela | 0.32 | Portugal | 0.29 |
| Greece | 4.4 | Peru | 0.30 | Mexico | 0.29 |
| Taiwan | 4.1 | Korea, Rep. | 0.30 | Philippines | 0.29 |
| Ireland | 3.1 | Canada | 0.29 | New Zealand | 0.29 |
| Spain | 2.8 | France | 0.29 | Thailand | 0.28 |
| Israel | 2.7 | Bolivia | 0.29 | Luxembourg | 0.27 |
| New Zealand | 1.8 | Belgium | 0.28 | Austria | 0.27 |
| Italy | 1.8 | Australia | 0.28 | Finland | 0.25 |
| Austria | 1.7 | New Zealand | 0.27 | Taiwan | 0.25 |
| U.K. | 1.7 | Sweden | 0.26 | Venezuela | 0.25 |
| Netherlands | 1.6 | Denmark | 0.26 | Japan | 0.25 |
| Belgium | 1.6 | Austria | 0.26 | Peru | 0.24 |
| Finland | 1.6 | Colombia | 0.26 | Norway | 0.24 |
| Hong Kong | 1.5 | Luxembourg | 0.25 | Honduras | 0.23 |
| Norway | 1.5 | Greece | 0.25 | Syria | 0.23 |
| Iceland | 1.5 | Poland | 0.24 | Greece | 0.23 |
| France | 1.5 | Taiwan | 0.24 | Germany, West | 0.23 |
| Japan | 1.5 | Sri Lanka | 0.22 | Poland | 0.20 |
| Denmark | 1.4 | Japan | 0.21 | Panama | 0.19 |
| Germany, West | 1.4 | Norway | 0.21 | Colombia | 0.19 |
| Australia | 1.4 | Finland | 0.20 | Switzerland | 0.18 |
| Sweden | 1.3 | Zimbabwe | 0.20 | Ecuador | 0.18 |
| Luxembourg | 1.3 | Ecuador | 0.20 | Bolivia | 0.13 |
| Switzerland | 1.1 | Germany, West | 0.19 | Zimbabwe | 0.13 |
| Canada | 1.1 | Panama | 0.19 | Sri Lanka | 0.12 |
| **U.S.A.** | **1.0** | Switzerland | 0.15 | Madagascar | 0.05 |
| Median | 6.5 | | 0.34 | | 0.31 |
| Mean | 23.5 | | 0.49 | | 0.34 |
| Std. Dev. | 37.9 | | 0.53 | | 0.21 |

*Notes and Sources*: See text and Higgins (1993). This table differs from Higgins' calculations in using the latest Penn World Table, version 5.6 (Heston, et al., 1994).

**Table 8**
**Saving and Investment Functions**

**A. Panel Estimation**
41 middle income economies, 5 quinquennia (1965–1989), random effects.

| Dependent varaible *CC* | | Dependent varaible *CI* | | Dependent varaible *CG* | |
|---|---|---|---|---|---|
| *g* | 0.35 | *g* | –0.80 | *g* | –1.79 |
| | (0.14) | | (0.37) | | (1.31) |
| *D1* | 0.26 | *D1* | –0.08 | *D1* | 0.02 |
| | (2.07) | | (0.86) | | (0.29) |
| *D2* | –0.11 | *D2* | 0.24 | *D2* | –0.11 |
| | (0.47) | | (1.25) | | (0.85) |
| *D3* | –0.15 | *D3* | –0.17 | *D3* | 0.09 |
| | (0.49) | | (0.65) | | (0.50) |
| *g D1* | –0.47 | *g D1* | 1.79 | *g D1* | 0.44 |
| | (0.26) | | (1.10) | | (0.43) |
| *g D2* | –0.73 | *g D2* | 1.11 | *g D2* | 2.76 |
| | (0.19) | | (0.33) | | (1.28) |
| *g D3* | 1.20 | *g D3* | –2.91 | *g D3* | –3.20 |
| | (0.23) | | (0.63) | | (1.10) |
| ln *PC/P* | –0.01 | *ln PI/P* | –0.14 | *ln PG/P* | –0.07 |
| | (4.49) | | (0.94) | | (2.58) |
| $R^2$ | .94 | $R^2$ | .82 | $R^2$ | .69 |

*Source*: Taylor (1995).

**B. Implied Partial Derivatives**
Derived from Panel A. Assume $g$=0.02.

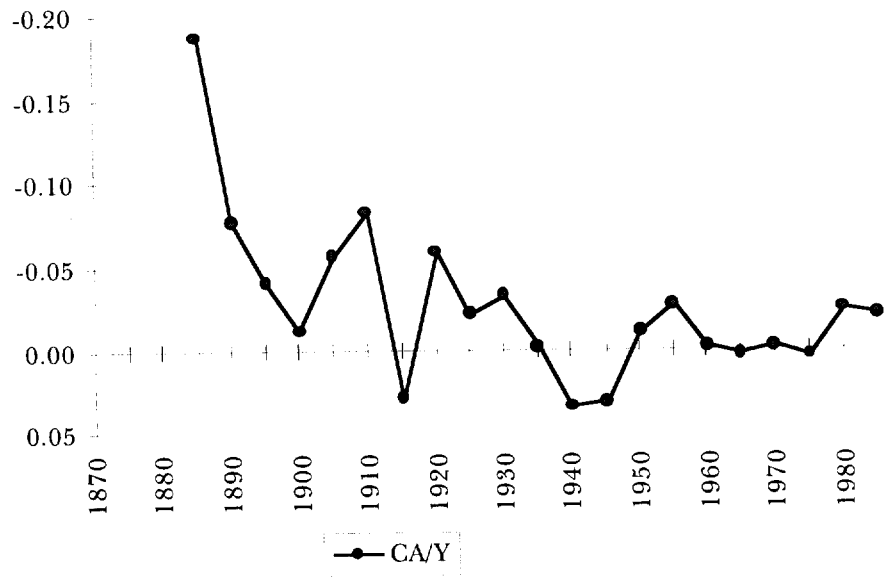
| *∂CC/…* | | *∂CI/…* | | *∂CG/* | |
|---|---|---|---|---|---|
| …*∂D1* | 0.251 | …*∂D1* | –0.044 | …*∂D1* | 0.029 |
| …*∂D2* | –0.125 | …*∂D2* | 0.262 | …*∂D2* | –0.055 |
| …*∂D3* | –0.126 | …*∂D3* | –0.114 | …*∂D3* | 0.026 |
| …∂ln *PC/P* | –0.01 | …∂ln *PI/P* | –0.14 | …∂ln *PG/P* | –0.07 |

**C. Counterfactuals (next page)**
Demographic counterfactuals: predicted 2025 age distribution versus 1989 age distribution.
Price counterfactuals: world prices (PC/P=PI/P=PI/P=1.0) versus 1985–89 values.
Derived from Panel B and implied counterfactual change in variables; adjusted using PC/P, PI/P, and PG/P to convert real change into nominal change in output shares for use in current account identity.

| Country | C/factual demographics: 1989 to 2025 age shares | | | C/factual price changes: 1989 log prices to zero | | |
|---|---|---|---|---|---|---|
| | d*D1* | d*D2* | d*D3* | ln*PC/P* | ln*PI/P* | ln*PG/P* |
| **Argentina** | **–8.4** | **3.9** | **4.5** | **–0.03** | **0.20** | **–0.18** |
| Bolivia | –12.8 | 11.7 | 1.1 | 0.00 | 0.67 | –0.16 |
| Brazil | –12.7 | 6.8 | 5.9 | –0.10 | 0.18 | 0.10 |
| Chile | –9.4 | 2.3 | 7.1 | 0.01 | 0.14 | –0.40 |
| Colombia | –13.7 | 7.9 | 5.8 | –0.08 | 0.22 | –0.09 |
| Costa Rica | –14.1 | 6.7 | 7.4 | –0.05 | 0.27 | –0.10 |
| Dominican Republic | –14.9 | 9.6 | 5.3 | 0.05 | 0.07 | –0.09 |
| Ecuador | –16.1 | 12.1 | 4 | 0.05 | 0.02 | –0.24 |
| El Salvador | –22 | 15.3 | 6.7 | 0.12 | 0.47 | –0.59 |
| Guatemala | –16.8 | 14.9 | 1.9 | 0.00 | 0.44 | –0.26 |
| Haiti | –9.1 | 8.2 | 0.9 | 0.06 | 0.47 | –0.39 |
| Honduras | –16.9 | 15.2 | 1.7 | 0.01 | 0.22 | –0.11 |
| Jamaica | –12.9 | 8.7 | 4.2 | –0.15 | 0.39 | 0.14 |
| Mexico | –15.2 | 10 | 5.2 | –0.11 | 0.29 | 0.03 |
| Panama | –13.5 | 7.3 | 6.2 | 0.03 | –0.13 | –0.10 |
| Paraguay | –10.9 | 8.3 | 2.6 | –0.02 | 0.39 | –0.53 |
| Peru | –14.6 | 10.3 | 4.3 | –0.05 | 0.28 | –0.21 |
| Trinidad & Tobago | –11.4 | 5.1 | 6.3 | –0.25 | 0.36 | 0.61 |
| Uruguay | –5.9 | 1.2 | 4.7 | 0.01 | –0.12 | –0.12 |
| Venezuela | –15.2 | 9.6 | 5.6 | –0.05 | 0.20 | –0.22 |
| **Average** | **–13.3** | **8.8** | **4.6** | **–0.03** | **0.25** | **–0.15** |

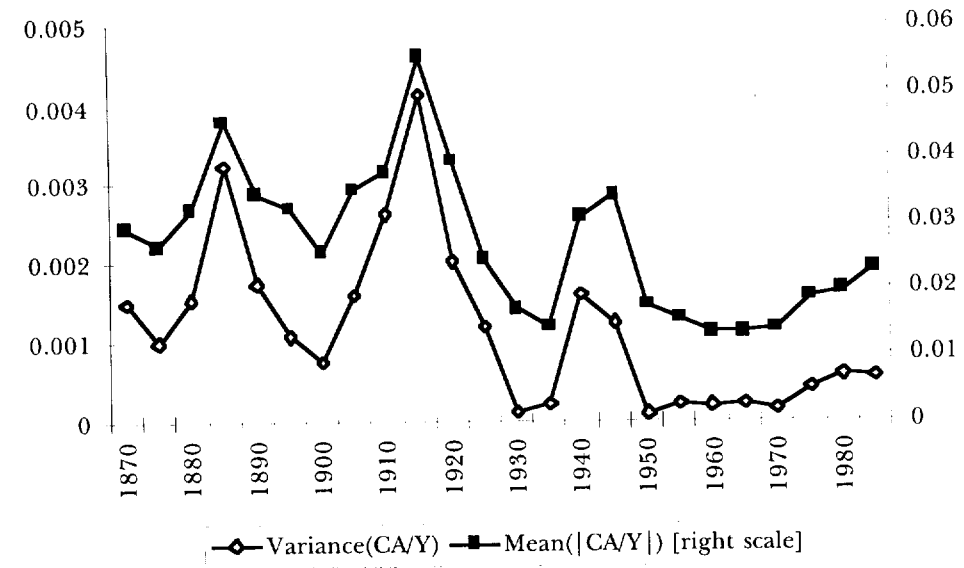
| Country | Impact of demographics: | | | Impact of price changes: | | | Impact of both: | | |
|---|---|---|---|---|---|---|---|---|---|
| | d*S/Y* | d*I/Y* | d*CA/Y* | d*S/Y* | d*I/Y* | d*CA/Y* | d*S/Y* | d*I/Y* | d*CA/Y* |
| **Argentina** | **3.4** | **1.1** | **2.3** | **1.1** | **3.4** | **–2.4** | **4.5** | **4.5** | **–0.1** |
| Bolivia | 5.6 | 6.8 | –1.2 | 1.0 | 18.3 | –17.3 | 6.6 | 25.1 | –18.5 |
| Brazil | 5.0 | 2.0 | 3.0 | –0.6 | 3.0 | –3.7 | 4.3 | 5.0 | –0.7 |
| Chile | 3.7 | 0.2 | 3.5 | 1.9 | 2.3 | –0.4 | 5.6 | 2.5 | 3.1 |
| Colombia | 5.4 | 2.5 | 2.9 | 0.7 | 3.9 | –3.2 | 6.0 | 6.4 | –0.3 |
| Costa Rica | 5.6 | 2.0 | 3.6 | 0.7 | 4.9 | –4.2 | 6.3 | 6.9 | –0.7 |
| Dominican Republic | 6.7 | 2.8 | 3.9 | 0.5 | 1.1 | –0.6 | 7.2 | 3.9 | 3.3 |
| Ecuador | 7.2 | 3.5 | 3.6 | 1.3 | 0.3 | 0.9 | 8.4 | 3.8 | 4.6 |
| El Salvador | 10.1 | 6.7 | 3.3 | 2.2 | 10.4 | –8.3 | 12.2 | 17.1 | –4.9 |
| Guatemala | 7.3 | 6.9 | 0.4 | 1.4 | 9.6 | –8.2 | 8.7 | 16.5 | –7.8 |
| Haiti | 4.1 | 3.9 | 0.2 | 1.8 | 10.6 | –8.8 | 5.9 | 14.5 | –8.6 |
| Honduras | 7.5 | 5.6 | 1.9 | 0.7 | 3.8 | –3.1 | 8.2 | 9.4 | –1.2 |
| Jamaica | 5.0 | 3.5 | 1.5 | –1.0 | 8.0 | –9.0 | 4.0 | 11.5 | –7.5 |
| Mexico | 6.0 | 3.6 | 2.4 | –0.1 | 5.5 | –5.6 | 5.9 | 9.1 | –3.3 |
| Panama | 5.8 | 1.6 | 4.2 | 0.6 | –1.6 | 2.2 | 6.4 | 0.0 | 6.4 |
| Paraguay | 4.4 | 3.5 | 0.9 | 2.2 | 8.2 | –6.0 | 6.6 | 11.7 | –5.1 |
| Peru | 6.0 | 3.8 | 2.2 | 1.2 | 5.2 | –4.0 | 7.2 | 9.0 | –1.8 |
| Trinidad & Tobago | 4.1 | 1.6 | 2.5 | –7.6 | 7.2 | –14.8 | –3.5 | 8.8 | –12.3 |
| Uruguay | 2.3 | 0.0 | 2.3 | 0.7 | –1.5 | 2.2 | 3.1 | –1.5 | 4.5 |
| Venezuela | 6.1 | 3.1 | 3.0 | 1.3 | 3.5 | –2.2 | 7.4 | 6.6 | 0.8 |
| **Average** | **5.6** | **3.2** | **2.3** | **0.5** | **5.3** | **–4.8** | **6.1** | **8.6** | **–2.5** |

**Figure 1**
**Capital Flows: Current Account as a Share of GDP, Argentina, 1885–1989**



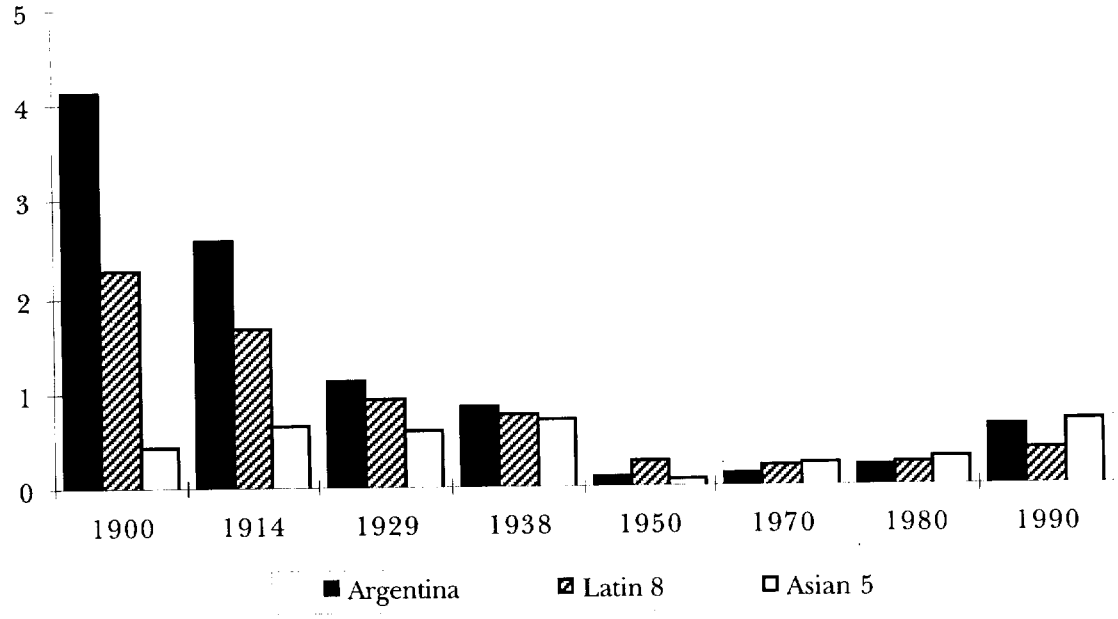

*Notes*: Data are quinquennial averages.
*Source*: Appendix.

**Figure 2**
**Capital Flows: Current Account as a Share of GDP, 12-Country Sample, 1885–1889**



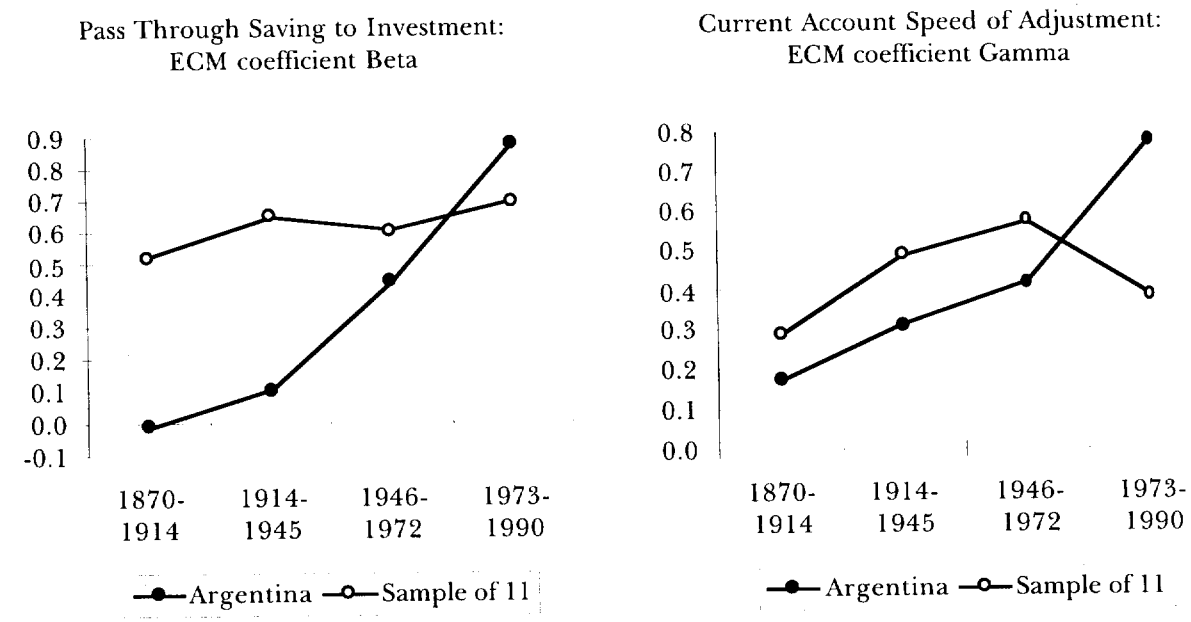

*Notes*: The sample is Argentina, Australia, Canada, Denmark, France, Germany, Italy, Japan, Norway, Sweden, U.K., U.S.A.
*Source*: Taylor (1996b).

**Figure 3**
**Foreign Investment in Latin America and Asia, 1900–1990**
Foreign Investment as a share of GDP




*Source*: Table 3, simple unweighted averages.

**Figure 4**
**Saving-Investment Relationship: Argentina versus a Sample of Eleven Countries, ECM Estimates**




*Notes*: See text and Table 7.

## Appendix: Argentina's Long-Run Balance of Payments

Appendix Table 1 shows my reconstruction of Argentina's investment, saving, and current account aggregate series for the years 1884–1992. I used various sources for this exercise, as given below. A full worksheet detailing these calculations is available from the author upon request, and is shown on the data supplement pages following Appendix Table 1.

*Notes to Appendix Table 1*:
The units for Y, I, and CA are millions ($10^6$) of peso papel (or peso moneda nacional) until 1959, then $10^9$ to 1979, then $10^{12}$ to 1984, then $10^{15}$ to 1989, then $10^{18}$ to 1992.

*Sources*: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**Appendix Table 1**

| | *Y* | *I* | *CA* | *S/Y* | *I/Y* | *CA/Y* |
|---|---|---|---|---|---|---|
| 1885 | 463 | 54 | –42 | .025 | .116 | –.091 |
| 1886 | 478 | 44 | –73 | –.061 | .092 | –.153 |
| 1887 | 513 | 44 | –95 | –.100 | .085 | –.185 |
| 1888 | 565 | 64 | –115 | –.090 | .114 | –.204 |
| 1889 | 795 | 93 | –242 | –.187 | .117 | –.304 |
| 1890 | 1,068 | 176 | –262 | –.081 | .165 | –.245 |
| 1891 | 1,482 | 181 | 16 | .133 | .122 | .011 |
| 1892 | 1,285 | 95 | –3 | .071 | .074 | –.003 |
| 1893 | 1,265 | 90 | –95 | –.003 | .071 | –.075 |
| 1894 | 1,334 | 86 | –102 | –.012 | .065 | –.077 |
| 1895 | 1,602 | 109 | –45 | .040 | .068 | –.028 |
| 1896 | 1,473 | 116 | –104 | .008 | .079 | –.071 |
| 1897 | 1,428 | 112 | –120 | –.005 | .079 | –.084 |
| 1898 | 1,492 | 119 | –62 | .038 | .080 | –.042 |
| 1899 | 1,398 | 91 | 31 | .087 | .065 | .022 |
| 1900 | 1,537 | 131 | –41 | .059 | .085 | –.026 |
| 1901 | 1,461 | 119 | –29 | .062 | .082 | –.020 |
| 1902 | 1,571 | 129 | 4 | .085 | .082 | .002 |
| 1903 | 1,694 | 134 | 11 | .086 | .079 | .007 |
| 1904 | 1,919 | 198 | –43 | .081 | .103 | –.022 |
| 1905 | 2,368 | 333 | 22 | .150 | .141 | .009 |
| 1906 | 2,636 | 422 | –227 | .074 | .160 | –.086 |
| 1907 | 2,770 | 537 | –290 | .089 | .194 | –.105 |
| 1908 | 2,934 | 441 | –143 | .102 | .150 | –.049 |
| 1909 | 3,348 | 541 | –186 | .106 | .162 | –.056 |
| 1910 | 3,882 | 699 | –406 | .076 | .180 | –.105 |
| 1911 | 3,929 | 685 | –608 | .020 | .174 | –.155 |
| 1912 | 4,348 | 571 | –362 | .048 | .131 | –.083 |
| 1913 | 4,400 | 580 | –422 | .036 | .132 | –.096 |
| 1914 | 3,990 | 420 | 96 | .129 | .105 | .024 |
| 1915 | 4,301 | 340 | 29 | .086 | .079 | .007 |
| 1916 | 4,723 | 370 | 144 | .109 | .078 | .030 |
| 1917 | 5,370 | 360 | 253 | .114 | .067 | .047 |
| 1918 | 6,995 | 350 | 203 | .079 | .050 | .029 |
| 1919 | 7,448 | 430 | 235 | .089 | .058 | .032 |
| 1920 | 8,368 | 590 | –340 | .030 | .071 | –.041 |
| 1921 | 6,844 | 600 | –538 | .009 | .088 | –.079 |
| 1922 | 6,729 | 730 | –616 | .017 | .108 | –.092 |
| 1923 | 7,724 | 1,040 | –394 | .084 | .135 | –.051 |
| 1924 | 8,951 | 1,050 | –312 | .083 | .117 | –.035 |
| 1925 | 9,035 | 1,040 | –312 | .081 | .115 | –.034 |
| 1926 | 8,536 | 1,010 | –268 | .087 | .118 | –.031 |
| 1927 | 8,958 | 1,120 | 51 | .131 | .125 | .006 |
| 1928 | 9,611 | 1,300 | –113 | .124 | .135 | –.012 |
| 1929 | 9,749 | 1,490 | –379 | .114 | .153 | –.039 |
| 1930 | 8,956 | 1,250 | –851 | .045 | .140 | –.095 |
| 1931 | 8,063 | 770 | –260 | .063 | .096 | –.032 |
| 1932 | 7,883 | 560 | –57 | .064 | .071 | –.007 |
| 1933 | 7,886 | 600 | –247 | .045 | .076 | –.031 |
| 1934 | 9,696 | 890 | –27 | .089 | .092 | –.003 |
| 1935 | 10,015 | 1,100 | 14 | .111 | .110 | .001 |
| 1936 | 10,611 | 1,290 | 117 | .133 | .122 | .011 |
| 1937 | 12,234 | 1,310 | 317 | .133 | .107 | .026 |
| 1938 | 11,922 | 1,380 | –557 | .069 | .116 | –.047 |
| 1939 | 12,521 | 1,210 | –69 | .091 | .097 | –.006 |
| 1940 | 12,917 | 1,250 | –182 | .083 | .097 | –.014 |
| 1941 | 13,918 | 1,250 | 203 | .104 | .090 | .015 |
| 1942 | 15,729 | 1,680 | 360 | .130 | .107 | .023 |
| 1943 | 16,547 | 1,800 | 1,280 | .186 | .109 | .077 |
| 1944 | 18,899 | 1,510 | 1,273 | .147 | .080 | .067 |
| 1945 | 20,865 | 2,460 | 1,480 | .189 | .118 | .071 |
| 1946 | 28,252 | 3,100 | 1,999 | .180 | .110 | .071 |
| 1947 | 38,825 | 5,150 | 852 | .155 | .133 | .022 |
| 1948 | 47,305 | 6,090 | 214 | .133 | .129 | .005 |
| 1949 | 56,792 | 6,510 | –610 | .104 | .115 | –.011 |
| 1950 | 67,275 | 7,740 | 561 | .123 | .115 | .008 |
| 1951 | 96,390 | 16,900 | –5,318 | .120 | .175 | –.055 |
| 1952 | 111,540 | 19,600 | –9,451 | .091 | .176 | –.085 |
| 1953 | 128,761 | 22,700 | 7,761 | .237 | .176 | .060 |
| 1954 | 142,652 | 22,400 | 2,100 | .172 | .157 | .015 |
| 1955 | 168,598 | 27,600 | –7,379 | .120 | .164 | –.044 |
| 1956 | 220,731 | 31,600 | –4,656 | .122 | .143 | –.021 |
| 1957 | 283,051 | 44,100 | –12,005 | .113 | .156 | –.042 |
| 1958 | 399,515 | 62,800 | –12,976 | .125 | .157 | –.032 |
| 1959 | 762,791 | 126,500 | 878 | .167 | .166 | .001 |
| 1960 | 1,006 | 218 | –5 | .211 | .216 | –.005 |
| 1961 | 1,214 | 261 | –35 | .186 | .215 | –.028 |
| 1962 | 1,455 | 306 | –14 | .201 | .211 | –.009 |
| 1963 | 1,922 | 317 | 48 | .190 | .165 | .025 |
| 1964 | 2,710 | 500 | 25 | .194 | .184 | .009 |
| 1965 | 3,834 | 1,081 | 38 | .292 | .282 | .010 |
| 1966 | 4,840 | 1,235 | 54 | .266 | .255 | .011 |
| 1967 | 6,427 | 1,698 | 43 | .271 | .264 | .007 |
| 1968 | 7,498 | 2,007 | –19 | .265 | .268 | –.002 |
| 1969 | 8,938 | 2,625 | –80 | .285 | .294 | –.009 |
| 1970 | 10,585 | 2,933 | –62 | .271 | .277 | –.006 |
| 1971 | 15,277 | 4,014 | –176 | .251 | .263 | –.012 |
| 1972 | 25,545 | 6,639 | –113 | .255 | .260 | –.004 |
| 1973 | 44,325 | 9,881 | 355 | .231 | .223 | .008 |
| 1974 | 61,477 | 14,512 | 59 | .237 | .236 | .001 |
| 1975 | 182,852 | 57,122 | –4,708 | .287 | .312 | –.026 |
| 1976 | 981,406 | 314,482 | 9,114 | .330 | .320 | .009 |
| 1977 | 2,739,434 | 878,450 | 45,896 | .337 | .321 | .017 |
| 1978 | 6,929,834 | 1,969,950 | 147,682 | .306 | .284 | .021 |
| 1979 | 19,088,936 | 4,995,889 | –67,562 | .258 | .262 | –.004 |
| 1980 | 38,400 | 9,700 | –877 | .230 | .253 | –.023 |
| 1981 | 74,740 | 16,960 | –2,075 | .199 | .227 | –.028 |
| 1982 | 218,520 | 47,540 | –6,099 | .190 | .218 | –.028 |
| 1983 | 1,095,000 | 228,700 | –25,651 | .185 | .209 | –.023 |
| 1984 | 7,909,200 | 1,579,000 | –168,787 | .178 | .200 | –.021 |
| 1985 | 53,050 | 9,331 | –573 | .165 | .176 | –.011 |
| 1986 | 99,841 | 17,434 | –2,696 | .148 | .175 | –.027 |
| 1987 | 233,323 | 45,626 | –9,080 | .157 | .196 | –.039 |
| 1988 | 1,110,620 | 207,020 | –13,760 | .174 | .186 | –.012 |
| 1989 | 32,440,450 | 5,033,029 | –552,406 | .138 | .155 | –.017 |
| 1990 | 689,923 | 96,474 | 9,279 | .153 | .140 | .013 |
| 1991 | 1,808,980 | 264,781 | –26,739 | .132 | .146 | –.015 |
| 1992 | 2,266,376 | 378,544 | –82,913 | .130 | .167 | –.037 |

**Data Supplement 1**

**Argentina: S, I, and CA, 1884–1913**

| | million $ papel | million 1950$ | price index | million $ papel | million $ oro | million $ oro | million $ oro | million $ oro | paper-gold exch. rate $papel/ $oro | million $papel | million $papel | million $papel | million $papel | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Y | I | 84=100 P | I | X | M | NFIA | CA | | X | M | NFIA | CA | S/Y | I/Y | CA/Y |
| 1880 | | | | | | | | | | | | | | | | |
| 1881 | | | | | 57.9 | 55.7 | -12.0 | -9.8 | | | | | | | | |
| 1882 | | | | | 60.4 | 61.2 | -15.7 | -16.5 | | | | | | | | |
| 1883 | | | | | 60.2 | 80.4 | -19.5 | -39.7 | | | | | | | | |
| 1884 | 355.0 | | 100.0 | | 68.0 | 94.1 | -27.6 | -53.7 | 1.0 | 68.0 | 94.1 | -27.6 | -53.7 | | | |
| 1885 | 463.4 | 1842.3 | 123.1 | 53.7 | 83.9 | 92.2 | -22.6 | -30.9 | 1.4 | 114.9 | 126.3 | -31.0 | -42.3 | .025 | .116 | -.091 |
| 1886 | 477.6 | 1457.1 | 126.9 | 43.8 | 69.8 | 95.4 | -26.8 | -52.4 | 1.4 | 97.0 | 132.6 | -37.3 | -72.8 | -.061 | .092 | -.153 |
| 1887 | 513.4 | 1515.6 | 121.8 | 43.7 | 84.4 | 117.4 | -37.3 | -70.3 | 1.4 | 113.9 | 158.5 | -50.4 | -94.9 | -.100 | .085 | -.185 |
| 1888 | 565.5 | 2221.2 | 122.1 | 64.2 | 100.1 | 128.4 | -49.5 | -77.8 | 1.5 | 148.1 | 190.0 | -73.3 | -115.1 | -.090 | .114 | -.204 |
| 1889 | 795.1 | 2688.3 | 146.4 | 93.3 | 90.1 | 164.6 | -59.8 | -134.3 | 1.8 | 162.2 | 296.3 | -107.6 | -241.7 | -.187 | .117 | -.304 |
| 1890 | 1068.1 | 3608.4 | 205.6 | 175.7 | 100.8 | 142.2 | -60.2 | -101.6 | 2.6 | 260.1 | 366.9 | -155.3 | -262.1 | -.081 | .165 | -.245 |
| 1891 | 1482.4 | 2381.9 | 320.7 | 180.9 | 103.2 | 67.2 | -31.6 | 4.4 | 3.7 | 386.0 | 251.3 | -118.2 | 16.5 | .133 | .122 | .011 |
| 1892 | 1285.3 | 1561.9 | 255.5 | 94.5 | 113.4 | 91.5 | **-22.9** | -1.0 | 3.3 | 373.1 | 301.0 | -75.3 | -3.3 | .071 | .074 | -.003 |
| 1893 | 1265.3 | 1591.7 | 239.6 | 90.3 | 94.1 | 96.2 | **-27.1** | -29.2 | 3.2 | 304.9 | 311.7 | -87.8 | -94.6 | -.003 | .071 | -.075 |
| 1894 | 1333.8 | 1555.7 | 234.5 | 86.4 | 101.7 | 92.8 | **-37.5** | -28.6 | 3.6 | 364.1 | 332.2 | -134.3 | -102.4 | -.012 | .065 | -.077 |
| 1895 | 1601.9 | 1638.4 | 279.8 | 108.6 | 120.1 | 95.1 | -38.1 | -13.1 | 3.4 | 413.1 | 327.1 | -131.1 | -45.1 | .040 | .068 | -.028 |
| 1896 | 1473.4 | 2057.4 | 237.6 | 115.8 | 116.8 | 112.2 | -39.9 | -35.3 | 3.0 | 345.7 | 332.1 | -118.1 | -104.5 | .008 | .079 | -.071 |
| 1897 | 1428.4 | 1926.1 | 246.3 | 112.4 | 101.2 | 98.3 | -44.0 | -41.1 | 2.9 | 294.5 | 286.1 | -128.0 | -119.6 | -.005 | .079 | -.084 |
| 1898 | 1492.0 | 2110.2 | 237.3 | 118.6 | 133.8 | 107.4 | -50.5 | -24.1 | 2.6 | 343.9 | 276.0 | -129.8 | -61.9 | .038 | .080 | -.042 |
| 1899 | 1397.9 | 1881.6 | 204.4 | 91.1 | 184.9 | 116.9 | -54.7 | 13.3 | 2.3 | 427.1 | 270.0 | -126.4 | 30.7 | .087 | .065 | .022 |
| 1900 | 1537.3 | 2398.0 | 230.6 | 131.0 | 154.6 | 113.5 | -58.6 | -17.5 | 2.3 | 358.7 | 263.3 | -136.0 | -40.6 | .059 | .085 | -.026 |
| 1901 | 1460.8 | 2491.0 | 202.0 | 119.2 | 167.7 | 114.0 | **-66.2** | -12.5 | 2.3 | 392.4 | 266.8 | -155.0 | -29.3 | .062 | .082 | -.020 |
| 1902 | 1570.8 | 2460.0 | 221.7 | 129.2 | 179.5 | 103.0 | **-74.9** | 1.6 | 2.3 | 407.5 | 233.8 | -170.0 | 3.7 | .085 | .082 | .002 |
| 1903 | 1693.7 | 2695.0 | 209.1 | 133.5 | 220.9 | 131.2 | **-84.6** | 5.1 | 2.3 | 501.4 | 297.8 | -192.1 | 11.5 | .086 | .079 | .007 |
| 1904 | 1918.7 | 3899.0 | 214.1 | 197.7 | 264.2 | 187.5 | **-95.7** | -19.0 | 2.3 | 599.7 | 425.6 | -217.2 | -43.1 | .081 | .103 | -.022 |
| 1905 | 2368.0 | 6029.0 | 233.2 | 333.1 | 322.8 | 205.1 | **-108.1** | 9.6 | 2.3 | 732.8 | 465.6 | -245.5 | 21.7 | .150 | .141 | .009 |
| 1906 | 2636.0 | 7209.0 | 247.2 | 422.1 | 292.3 | 270.0 | **-122.2** | -99.9 | 2.3 | 663.5 | 612.9 | -277.5 | -226.9 | .074 | .160 | -.086 |
| 1907 | 2770.3 | 8902.0 | 254.4 | 536.5 | 296.2 | 285.9 | **-138.2** | -127.9 | 2.3 | 672.4 | 649.0 | -313.7 | -290.3 | .089 | .194 | -.105 |
| 1908 | 2934.0 | 7593.0 | 245.4 | 441.4 | 366.0 | 273.0 | **-156.2** | -63.2 | 2.3 | 830.8 | 619.7 | -354.6 | -143.4 | .102 | .150 | -.049 |
| 1909 | 3347.9 | 8557.0 | 266.9 | 540.9 | 397.4 | 302.8 | **-176.6** | -82.0 | 2.3 | 902.1 | 687.4 | -400.8 | -186.0 | .106 | .162 | -.056 |
| 1910 | 3881.7 | 10230.0 | 288.5 | 699.0 | 372.6 | 351.8 | **-199.6** | -178.8 | 2.3 | 845.8 | 798.6 | -453.0 | -405.8 | .076 | .180 | -.105 |
| 1911 | 3928.9 | 10076.0 | 286.8 | 684.5 | 324.7 | 366.8 | **-225.6** | -267.7 | 2.3 | 737.1 | 832.6 | -512.1 | -607.7 | .020 | .174 | -.155 |
| 1912 | 4347.6 | 8215.0 | 293.4 | 570.9 | 480.4 | 384.8 | -255.0 | -159.4 | 2.3 | 1090.5 | 873.5 | -578.9 | -361.8 | .048 | .131 | -.083 |
| 1913 | 4400.5 | 8331.0 | 293.9 | 580.0 | 483.5 | 421.3 | -248.0 | -185.8 | 2.3 | 1097.5 | 956.4 | -563.0 | -421.8 | .036 | .132 | -.096 |

Sources:
X and M ($oro), and paper-gold exch. rate from della Paolera (1988).
P, Y from della Paolera et al. (1997).
I from Di Tella-Zymelman (1967) in 1950 prices times della Paolera et al. (1997) Price level (P), linked to IEERAL nominal value in 1914 ($580 million).
NFIA, 1884-1900: Williams' debit total for "balance of borrowings", which also includes amortization, hence a slight overstatement.
1892-94 (bold) estimate: no data on interest; assumed to equal Williams' "balance of borrowings" (p. 136)
plus $oro 7 millions since new borrowings were approx this during Baring recovery. Data from Vazquez Presedo and Williams (1920).
NFIA, 1900-1913 (bold): estimate: no data on invisibles 1900-1911; assumed to grow at about 12% per
annum after 1900, an interpolation to match 1912 total invisibles of $oro 255 million (Phelps 1938; cited
in
Ford 1962); this 12% close to 10.8% trend rate of growth of foreign capital 1900-1913 (see Taylor 1992).
This is a very rough approximation, but NFIA is mostly interest and this should track growth of debt closely.

**Data Supplement 2**

**Argentina: S, I, and CA, 1914–1950**

| | million $ papel Y | million $ papel I | million $papel X | million $papel M | million $papel NFIA | million $papel CA | S/Y | I/Y | CA/Y |
|---|---|---|---|---|---|---|---|---|---|
| 1914 | 3990 | 420 | 1179 | 680 | -404 | 96 | .129 | .105 | .024 |
| 1915 | 4301 | 340 | 1184 | 776 | -379 | 29 | .086 | .079 | .007 |
| 1916 | 4723 | 370 | 1329 | 818 | -368 | 144 | .109 | .078 | .030 |
| 1917 | 5370 | 360 | 1650 | 1021 | -377 | 253 | .114 | .067 | .047 |
| 1918 | 6995 | 350 | 1972 | 1294 | -475 | 203 | .079 | .050 | .029 |
| 1919 | 7448 | 430 | 2511 | 1780 | -496 | 235 | .089 | .058 | .032 |
| 1920 | 8368 | 590 | 1854 | 1762 | -432 | -340 | .030 | .071 | -.041 |
| 1921 | 6844 | 600 | 1584 | 1710 | -412 | -538 | .009 | .088 | -.079 |
| 1922 | 6729 | 730 | 1703 | 1870 | -450 | -616 | .017 | .108 | -.092 |
| 1923 | 7724 | 1040 | 2011 | 1929 | -476 | -394 | .084 | .135 | -.051 |
| 1924 | 8951 | 1050 | 2100 | 1932 | -480 | -312 | .083 | .117 | -.035 |
| 1925 | 9035 | 1040 | 2100 | 1932 | -480 | -312 | .081 | .115 | -.034 |
| 1926 | 8536 | 1010 | 1824 | 1569 | -523 | -268 | .087 | .118 | -.031 |
| 1927 | 8958 | 1120 | 2324 | 1668 | -605 | 51 | .131 | .125 | .006 |
| 1928 | 9611 | 1300 | 2428 | 1902 | -639 | -113 | .124 | .135 | -.012 |
| 1929 | 9749 | 1490 | 2196 | 1959 | -616 | -379 | .114 | .153 | -.039 |
| 1930 | 8956 | 1250 | 1414 | 1680 | -585 | -851 | .045 | .140 | -.095 |
| 1931 | 8063 | 770 | 1475 | 1174 | -561 | -260 | .063 | .096 | -.032 |
| 1932 | 7883 | 560 | 1305 | 836 | -526 | -57 | .064 | .071 | -.007 |
| 1933 | 7886 | 600 | 1127 | 897 | -477 | -247 | .045 | .076 | -.031 |
| 1934 | 9696 | 890 | 1618 | 1110 | -535 | -27 | .089 | .092 | -.003 |
| 1935 | 10015 | 1100 | 1726 | 1175 | -537 | 14 | .111 | .110 | .001 |
| 1936 | 10611 | 1290 | 1851 | 1183 | -551 | 117 | .133 | .122 | .011 |
| 1937 | 12234 | 1310 | 2484 | 1557 | -610 | 317 | .133 | .107 | .026 |
| 1938 | 11922 | 1380 | 1527 | 1648 | -436 | -557 | .069 | .116 | -.047 |
| 1939 | 12521 | 1210 | 1949 | 1515 | -503 | -69 | .091 | .097 | -.006 |
| 1940 | 12917 | 1250 | 1699 | 1502 | -379 | -182 | .083 | .097 | -.014 |
| 1941 | 13918 | 1250 | 1809 | 1281 | -325 | 203 | .104 | .090 | .015 |
| 1942 | 15729 | 1680 | 2008 | 1263 | -385 | 360 | .130 | .107 | .023 |
| 1943 | 16547 | 1800 | 2396 | 936 | -180 | 1280 | .186 | .109 | .077 |
| 1944 | 18899 | 1510 | 2682 | 1036 | -373 | 1273 | .147 | .080 | .067 |
| 1945 | 20865 | 2460 | 2892 | 1174 | -238 | 1480 | .189 | .118 | .071 |
| 1946 | 28252 | 3100 | 4627 | 2332 | -296 | 1999 | .180 | .110 | .071 |
| 1947 | 38825 | 5150 | 6451 | 5363 | -236 | 852 | .155 | .133 | .022 |
| 1948 | 47305 | 6090 | 6446 | 6302 | 70 | 214 | .133 | .129 | .005 |
| 1949 | 56792 | 6510 | 4063 | 4692 | 19 | -610 | .104 | .115 | -.011 |
| 1950 | 67275 | 7740 | 5838 | 5227 | -50 | 561 | .123 | .115 | .008 |

Source: Balboa (1972), except Y from della Paolera et al. (1997), I from IEERAL (1986).
Some data are not calendar years, so interpolation and weighting are used.

**Data Supplement 3**

**Argentina: S, I, and CA, 1951–1964**

| | Y $ papel billion | I $ papel billion | CA $ papel billion | CA US$ million | E $ papel per US$ | S/Y | I/Y | CA/Y |
|---|---|---|---|---|---|---|---|---|
| 1951 | 96.4 | 16.9 | -5.3 | -224.0 | 23.7 | .120 | .175 | -.055 |
| 1952 | 111.5 | 19.6 | -9.5 | -412.0 | 22.9 | .091 | .176 | -.085 |
| 1953 | 128.8 | 22.7 | 7.8 | 344.0 | 22.6 | .237 | .176 | .060 |
| 1954 | 142.7 | 22.4 | 2.1 | 83.0 | 25.3 | .172 | .157 | .015 |
| 1955 | 168.6 | 27.6 | -7.4 | -242.0 | 30.5 | .120 | .164 | -.044 |
| 1956 | 220.7 | 31.6 | -4.7 | -131.0 | 35.5 | .122 | .143 | -.021 |
| 1957 | 283.1 | 44.1 | -12.0 | -303.0 | 39.6 | .113 | .156 | -.042 |
| 1958 | 399.5 | 62.8 | -13.0 | -259.0 | 50.1 | .125 | .157 | -.032 |
| 1959 | 762.8 | 126.5 | 0.9 | 11.0 | 79.8 | .167 | .166 | .001 |
| 1960 | 1006.3 | 217.6 | -5.0 | -60.0 | 82.8 | .211 | .216 | -.005 |
| 1961 | 1213.9 | 260.8 | -34.6 | -417.0 | 82.9 | .186 | .215 | -.028 |
| 1962 | 1454.7 | 306.3 | -13.6 | -117.0 | 116.0 | .201 | .211 | -.009 |
| 1963 | 1921.7 | 316.7 | 48.0 | 346.0 | 138.6 | .190 | .165 | .025 |
| 1964 | 2709.6 | 499.8 | 25.5 | 162.0 | 157.2 | .194 | .184 | .009 |

Sources: della Paolera et al. (1997), except I from IEERAL (1986),
CA(US$) from Mitchell (1993).

**Data Supplement 4**

**Argentina: S, I, and CA, 1965–1992**

| | Y $ papel trillion | I $ papel trillion | CA US$ million | E $ papel per US$ | CA $ papel trillion | S/Y | I/Y | CA/Y |
|---|---|---|---|---|---|---|---|---|
| 1965 | 3834 | 1081 | 222 | 170 | 38 | .292 | .282 | .010 |
| 1966 | 4840 | 1235 | 259 | 209 | 54 | .266 | .255 | .011 |
| 1967 | 6427 | 1698 | 130 | 333 | 43 | .271 | .264 | .007 |
| 1968 | 7498 | 2007 | -53 | 350 | -19 | .265 | .268 | -.002 |
| 1969 | 8938 | 2625 | -230 | 350 | -80 | .285 | .294 | -.009 |
| 1970 | 10585 | 2933 | -163 | 379 | -62 | .271 | .277 | -.006 |
| 1971 | 15277 | 4014 | -390 | 452 | -176 | .251 | .263 | -.012 |
| 1972 | 25545 | 6639 | -227 | 500 | -113 | .255 | .260 | -.004 |
| 1973 | 44325 | 9881 | 711 | 500 | 355 | .231 | .223 | .008 |
| 1974 | 61477 | 14512 | 118 | 500 | 59 | .237 | .236 | .001 |
| 1975 | 182852 | 57122 | -1287 | 3658 | -4708 | .287 | .312 | -.026 |
| 1976 | 981406 | 314482 | 651 | 14000 | 9114 | .330 | .320 | .009 |
| 1977 | 2739434 | 878450 | 1126 | 40760 | 45896 | .337 | .321 | .017 |
| 1978 | 6929834 | 1969950 | 1856 | 79570 | 147682 | .306 | .284 | .021 |
| 1979 | 19088936 | 4995889 | -513 | 131700 | -67562 | .258 | .262 | -.004 |
| 1980 | 38400000 | 9700000 | -4774 | 183700 | -876984 | .230 | .253 | -.023 |
| 1981 | 74740000 | 16960000 | -4712 | 440300 | -2074694 | .199 | .227 | -.028 |
| 1982 | 218520000 | 47540000 | -2353 | 2592000 | -6098976 | .190 | .218 | -.028 |
| 1983 | 1095000000 | 228700000 | -2436 | 10530000 | -25651080 | .185 | .209 | -.023 |
| 1984 | 7909200000 | 1579000000 | -2495 | 67649999 | -168786751 | .178 | .200 | -.021 |
| 1985 | 53050000000 | 9331000000 | -952 | 601799984 | -572913585 | .165 | .176 | -.011 |
| 1986 | 99841000000 | 17434000000 | -2859 | 942999977 | -2696036995 | .148 | .175 | -.027 |
| 1987 | 233323000000 | 45626000000 | -4235 | 2144000027 | -9079840253 | .157 | .196 | -.039 |
| 1988 | 1110620000000 | 207020000000 | -1572 | 8752999711 | -13759715545 | .174 | .186 | -.012 |
| 1989 | 32440450000000 | 5033029120000 | -1305 | 423300005496 | -552406480080 | .138 | .155 | -.017 |
| 1990 | 689922740000000 | 96473579520000 | 1903 | 4875999987125 | 9279028287564 | .153 | .140 | .013 |
| 1991 | 1808979720000000 | 264781004800000 | -2804 | 9535999894142 | -26738943703175 | .132 | .146 | -.015 |
| 1992 | 2266375980000000 | 378544005120000 | -8370 | 9905999898911 | -82913217885913 | .130 | .167 | -.037 |

Source: I, CA (US$), E from World Bank (1994), Y from della Paolera et al. (1997).
Note: Units are still $papel.