

This chapter analyzes the medium-term relationship between the current account and a set of fundamentals. Following the existing literature, the estimations consist of ordinary least squares or fixed-effect regressions for an unbalanced panel of nonoverlapping, four-year averages over the period 1981–2005 with six observations for most countries.<sup>2</sup> The variables in the regressions are generally stationary. Also, the current account needs to be stationary for the intertemporal budget constraint to hold (Ghosh and Ostry, 1997).

### Benchmark Current Account Regressions for Low-Income Countries

The preferred current account regressions for this sample of low-income countries are reported in Table 3.1.<sup>3</sup> In addition to country fixed effects, the regressions include traditional variables (Chinn and Prasad, 2003; Chinn and Ito, 2007; and Lee and others, 2008) such as the fiscal balance; demographic variables (old-age dependency ratio, population growth); initial net foreign assets position; the oil trade balance; and variables related to the stage of development (GDP per capita relative to the United States, and real per capita GDP growth). Most notably, in this sample of LICs, the ratio of the fiscal balance to GDP (relative to that of trading partners) and population growth remain strongly significant with the expected sign.

<sup>1</sup>An earlier version of this chapter was published in the *International Seminar on Macroeconomics*, Vol. 6, No. 1, published by the University of Chicago Press. © 2009 by the National Bureau of Economic Research. All rights reserved.

<sup>2</sup>See Chapters 1 and 2 for a discussion of the literature and of the data set. The data set is presented in detail in the Appendix. The variables in the regressions are generally stationary. Also, the current account needs to be stationary for the intertemporal budget constraint to hold (Ghosh and Ostry, 1997).

<sup>3</sup>Most variables in the analysis are computed in relation to trading partners, and the main results are not affected if the period sample mean is also removed from other variables.

The set of control variables also includes a measure of the terms of trade that has traditionally not been included in current account regressions. The findings are consistent with the interpretation that income effects resulting from terms-of-trade fluctuations have a strong impact on the current account: a temporary improvement in the terms of trade tends to improve the current account because part of the increase in income is saved to smooth consumption over time.

Columns (1) through (7) of Table 3.1 report regressions in which are introduced—one by one or in groups—the new medium-term determinants, specific to LICs, of the current account, in addition to the previous set of its medium-term determinants. Columns (8) and (9) summarize the preferred results, either when maintaining standard determinants, or when using a parsimonious specification with only significant variables.

Regarding official financing, an aggregate measure of foreign aid is significantly and negatively correlated with the current account.<sup>4</sup> The estimated coefficient implies that, for any dollar of aid, the current account deteriorates by about 10 cents during the same period. To better understand this effect, it is useful to note that the two components of foreign aid (grants and concessional loans) are accounted for in separate parts of the balance of payments (the current account and the financial account, respectively), and hence should be expected to have effects of opposite signs on the current account. The analysis presents regressions with the two separate components in columns (2), (6), (8), and (9). The estimated coefficients imply that, on average, about 80 percent of grants are fully absorbed through an increase in net imports over a four-year period, while only 30 to 50 percent of concessional loans received are absorbed through net imports over the same horizon.<sup>5</sup> Consistent

<sup>4</sup>The analysis uses the aggregate measure of foreign aid adjusted for debt relief, in percentage of GDP, as constructed by Roodman (2006).

<sup>5</sup>The estimated effects of aid flows on the current account are generally robust to small changes in the regression sample. However,

**Table 3.1. Medium-Term Determinants of the Current Account: Main Results**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>Controls</b>									
Fiscal balance to GDP	0.2432** (0.0466)	0.2466** (0.0465)	0.3392** (0.0280)	0.3472** (0.0150)	0.3966*** (0.0040)	0.3497** (0.0187)	0.2528** (0.0225)	0.3224*** (0.0095)	0.3680*** (0.0005)
Old-age dependency	-0.2673 (0.3881)	-0.2415 (0.4375)	-0.0140 (0.9617)	-0.2326 (0.4602)	-0.0324 (0.9174)	0.0194 (0.9495)	-0.4630 (0.1263)	0.1425 (0.6296)	
Population growth	-1.6275** (0.0209)	-1.4663** (0.0410)	-2.6210*** (0.0009)	-2.4801*** (0.0045)	-2.4438*** (0.0011)	-2.1768*** (0.0024)	-1.1773* (0.0715)	-1.8436*** (0.0052)	-1.7452*** (0.0082)
Initial net foreign assets	-0.0103 (0.4115)	-0.0099 (0.4371)	-0.0045 (0.7014)	-0.0016 (0.9022)	0.0186 (0.2035)	0.0129 (0.4030)	-0.0043 (0.7245)	-0.0079 (0.4899)	
Oil trade balance to GDP	0.1820 (0.1467)	0.1892 (0.1420)	-0.0122 (0.9234)	0.0098 (0.9352)	0.0451 (0.7103)	0.0215 (0.8649)	0.1868 (0.1399)	-0.0004 (0.9971)	
Income per capita (relative to United States)	0.1017 (0.6813)	0.0372 (0.8908)	0.2680 (0.2320)	0.1912 (0.4052)	0.2358 (0.2671)	0.1632 (0.5044)	0.1110 (0.6566)	0.1747 (0.4729)	
Per capita real GDP growth	0.1446 (0.3078)	0.1263 (0.3849)	-0.0034 (0.9798)	0.0698 (0.5963)	-0.0252 (0.8490)	-0.0057 (0.9668)	0.1376 (0.3218)	0.0916 (0.4897)	
<b>New medium-term determinants</b>									
Terms of trade, goods and services	0.0228* (0.0955)	0.0236* (0.0905)	0.0345** (0.0191)	0.0315** (0.0267)	0.0336** (0.0165)	0.0332** (0.0263)	0.0260** (0.0499)	0.0269** (0.0340)	0.0319*** (0.0074)
Aid flows to GDP	-0.1130* (0.0636)								
Concessional loans to GDP		-0.3122* (0.0695)				-0.4754** (0.0247)		-0.5565*** (0.0081)	-0.4882** (0.0127)
Net grants to GDP		-0.0282 (0.7365)				0.2108* (0.0616)		0.2168* (0.0543)	0.1981* (0.0571)
Domestic financial liberalization (initial)			0.0343** (0.0139)		0.0276* (0.0992)	0.0326** (0.0433)		0.0241 (0.1379)	0.0244* (0.0797)
Capital account liberalization (initial)				0.0492** (0.0156)	0.0376* (0.0862)	0.0332 (0.1190)		0.0434** (0.0371)	0.0435** (0.0289)
Natural disaster				0.0349** (0.0105)	0.0101 (0.5855)	0.0032 (0.8572)		0.0359*** (0.0064)	0.0361*** (0.0041)
Natural disaster × initial capital account				-0.0605** (0.0236)	-0.0566** (0.0385)	-0.0495* (0.0699)		-0.0627** (0.0145)	-0.0654*** (0.0071)
Natural disaster × initial net foreign assets					-0.0357** (0.0252)	-0.0309* (0.0826)			
Violent political transition							0.0287*** (0.0000)	0.0280*** (0.0006)	0.0262*** (0.0014)
Observations	223	219	143	143	143	139	223	139	139
R-squared	0.73	0.73	0.82	0.82	0.83	0.84	0.75	0.85	0.84

Note: \*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$ . Robust  $p$ -values in parentheses. Robust panel regressions of the current-account-to-GDP ratio on country fixed effects, a set of control variables (the fiscal-balance-to-GDP ratio, demographic variables, the initial-net-foreign-assets-to-GDP ratio, the oil-trade-balance-to-GDP ratio, income per capita relative to the United States, and per capita real GDP growth), and a set of medium-term determinants of the current account, including (1) aid flows to GDP, (2) financial and capital account liberalization, and (3) shocks (natural disasters, terms-of-trade fluctuations). The dependent variable and explanatory variables are averaged over four-year periods (except when stated otherwise) and cover 1981–2005.

with theoretical predictions of normative models (Matsen and Torvik, 2004), on average, a large

the estimated coefficient of grants reported in the specification of column (2) becomes closer to those of columns (6), (8), and (9) when run on the same sample. See Berg, Mirzoev, and others (2010); Berg, Gottschalk, and others (2010); and Prati and Tresselt (2006) for macroeconomic and policy responses to aid flows.

share of aid is not immediately spent on net imports, and is indirectly saved as foreign exchange reserves. Berg and others (2007) and Prati and Tresselt (2006) provide consistent evidence that macroeconomic responses to aid surges may limit the short-run absorption of aid in LICs. Overall, the negative coefficient for total aid reported in column

(1) reflects similar effects for the two aid components on spending patterns but opposite accounting standards in the current and financial accounts.

Domestic financial reforms are associated with higher current accounts, suggesting that these reforms boost domestic private saving more than they boost investment. This interpretation is consistent with the McKinnon hypothesis,<sup>6</sup> according to which liberalization of domestic banking systems in developing countries results in higher saving rates by raising the return on financial saving.<sup>7</sup> The estimated effect implies that shifting from complete financial repression to the sample average level of liberalization would improve the current account by 1.5 percent of GDP. Evidence consistent with this interpretation is shown in Table 3.2, which suggests that real deposit rates increase when countries liberalize their domestic financial systems.<sup>8</sup>

The opposite effects on the current account of domestic financial liberalization and of concessional loans may be explained by the fact that aid flows are typically *not* intermediated by the domestic financial system, as discussed in Chapter 2 (aid flows typically finance government current expenditures and public investment). In addition, part of aid flows, by being redistributed through transfers, temporarily increases private agents' disposable income, thus raising private consumption and saving.<sup>9</sup>

Exogenous negative income shocks (as proxied by natural disasters) have a negative impact on the current account, as predicted by standard theory,

<sup>6</sup>Initially formulated by McKinnon (1973), and also conceptualized by Fry (1995).

<sup>7</sup>The findings in this paper are also consistent with the model of Gourinchas and Jeanne (2007), who suggest that saving wedges may be more important than investment wedges in developing countries. However, the findings are less consistent with Caballero, Farhi, and Gourinchas (2008) and with Mendoza, Quadrini, and Rios-Rull (2008), who show how the lack of financial development may result in precautionary saving, and therefore higher current account balances.

<sup>8</sup>Real deposit rates increased between the early 1970s and the end of the 1980s in a sample of Asian countries that moved from financial repression to financial liberalization over this period (Fry, 1995).

<sup>9</sup>Whether private agents partly save these windfall earnings is a subject for future research. The aggregate estimates in this analysis suggest that part of aid is saved over a four-year horizon, which may be caused by macroeconomic policy responses, or by private agents' consumption-saving decisions.

**Table 3.2. Real Deposit Interest Rates in Selected Asian Developing Countries and the United States**

Economy	1968–74	1975–81	1982–88
Bangladesh	-7.88	-3.19	2.33
India	-2.46	0.07	1.13
Indonesia	-1.21	-5.80	7.57
Korea, Rep. of	1.58	-2.58	5.13
Malaysia	2.01	1.79	5.37
Nepal	-0.62	4.04	3.36
Pakistan	-2.33	-1.55	2.96
Philippines	-4.22	-0.16	-0.32
Sri Lanka	-4.52	0.27	4.08
Taiwan Province of China	0.34	2.88	5.48
Thailand	1.24	1.52	7.67
United States	1.31	0.24	4.86

Sources: Fry (1995) and authors' calculations for the United States (annual average continuously compounded rates). Data for the United States are from IMF, *International Financial Statistics* (lines 601c and 64).

but only in countries with fully open capital accounts (as indicated by the sum of the linear and the interaction terms).<sup>10</sup> This result is consistent with standard smoothing of aggregate consumption through international borrowing in open economies.<sup>11</sup> Because the analysis is already controlling for official capital flows, the estimates are likely to capture the effect of private capital flows.

Conversely, natural disasters are associated with current account improvements in countries with closed capital accounts. A possible explanation is that these negative shocks trigger a procyclical increase in saving (relative to investment) when there is no access to international capital markets. Kraay and Ventura (2000) suggest that negative income shocks should lead to current account surpluses (deficits) in debtor (creditor) countries because domestic investment falls more (less) than saving following such

<sup>10</sup>The measure is defined as the frequency of negative income shocks over a four-year period, where natural disasters include floods, droughts, earthquakes, and windstorms. Such natural events are typical, frequent, and likely to have macroeconomic implications in LICs. In this sample, the frequency of these shocks is high, about 0.6 per four-year period.

<sup>11</sup>In a country with a fully liberalized capital account, a natural disaster occurring at an average frequency of 0.6 during a four-year period would be associated with a deterioration in the current account equivalent to -0.7 percent of GDP.

shocks.<sup>12</sup> When interacting the natural disaster variable with the initial net foreign assets position, the analysis yields a negative and significant coefficient on the interaction term (which tends to support the prediction of the Kraay and Ventura model) and an insignificant coefficient on the shock variable itself (Table 3.1, column 5). Controlling for aid, however, weakens this estimated effect of the portfolio composition (Table 3.1, column 6).

The impact of capital account liberalization on the current account needs to be analyzed jointly with the role of shocks: as just discussed, when countries face negative income shocks, more-open capital accounts allow them to borrow on international capital markets, which is consistent with consumption smoothing. However, in good times, capital account liberalization seems to be associated with capital outflows in LICs, which is consistent with the presence of financial repression during the sample. Table 3.2 shows that 6 out of 11 developing countries covered exhibited real deposit rates below U.S. deposit rates in the 1980s.<sup>13</sup> Turning to institutional factors, violent political events tend to improve the current account, suggesting that political unrest may trigger significant capital flight.

### Robustness

The main baseline results are generally robust to the inclusion of various additional explanatory variables as shown in Table 3.3. Column (1) allows for a dynamic effect of the current account by controlling for the lagged current account: limited persistence of the current account beyond a four-year horizon is found in this sample of LICs.<sup>14</sup> Column (2) shows that trade reforms (as measured by an index of average tariffs) have no additional explanatory power. Column (3) splits the terms-of-trade index into two components, and shows that export prices are strongly positively correlated with the current account, while import prices are weakly

and negatively correlated with it. A weaker correlation for the latter is consistent with income effects and substitution effects of import price movements having opposite effects on the current account. Next, as shown in column (4), the results are robust to the inclusion of the six emerging markets that have been excluded from the LIC sample (China, Colombia, India, Indonesia, Pakistan, and Thailand). Furthermore, the results are robust to the use of a broader measure of capital account liberalization (updated version of Quinn, 1997; see the Appendix), as reported in column (5).

Columns (6), (7), and (8) of Table 3.3 consider alternative interaction terms with the index of capital account openness. Column (6) controls for an interaction between the fiscal balance and the capital account index, to test whether the effect of fiscal policy may depend on the capacity of private agents to offset fiscal policies by borrowing or lending in international markets. The analysis finds that, in this sample of LICs, the effect of fiscal policy on aggregate demand and on the current account is not significantly affected by the degree of capital account openness. However, the negative sign of the interaction term is consistent with standard theories, implying a lower effect of the fiscal balance on the current account in countries with more-open capital accounts. Column (7) considers an interaction with population growth, but again does not yield any significant effect. Still, the negative sign on the interaction term is consistent with neoclassical theories, according to which countries with younger nonactive populations are more able to borrow against future income when the capital account is open. The last column considers an interaction term with real per capita GDP growth; the positive sign of the interaction term, although not significant, would suggest that countries with more open capital accounts tend to run higher current account balances when growth is temporarily above its trend.<sup>15</sup>

<sup>12</sup>Guo and Jin (2009) show that a portfolio-composition effect might dominate the income effect in past data.

<sup>13</sup>There was, however, a large dispersion of real deposit rates in developing countries over the period 1970–90 (Gelb, 1989).

<sup>14</sup>Controlling for lags of grant and concessional loans also does not affect the main results (regression available upon request).

<sup>15</sup>This result is consistent with Gourinchas and Jeanne (2007), who find evidence that countries with faster productivity growth tend to attract less foreign capital. However, if the country fixed effects are omitted to test for long-run cross-country differences, the opposite sign tends to be found on this interaction term: countries with faster economic growth tend to run lower current account balances when they liberalize their capital accounts.

**Table 3.3. Medium-Term Determinants of the Current Account: Robustness**

Variables	(1)	(2)	(3)	(4) <sup>1</sup>	(5)	(6)	(7)	(8)
Fiscal balance to GDP	0.3166** (0.0141)	0.3083*** (0.0030)	0.3486*** (0.0025)	0.2568** (0.0188)	0.3230*** (0.0047)	0.5104*** (0.0016)	0.3886*** (0.0004)	0.3597*** (0.0007)
Population growth	-1.4924* (0.0550)	-2.7107*** (0.0000)	-1.6308** (0.0173)	-1.7432*** (0.0030)	-1.8557*** (0.0068)	-1.7513*** (0.0045)	-1.4558** (0.0228)	-1.7485*** (0.0050)
Terms of trade, goods (log)	0.0289** (0.0268)	0.0352*** (0.0037)		0.0249** (0.0460)	0.0327*** (0.0070)	0.0304** (0.0118)	0.0278** (0.0242)	0.0323*** (0.0058)
Concessional loans to GDP	-0.4185* (0.0712)	-0.4808** (0.0128)	-0.4343** (0.0220)	-0.5318*** (0.0074)	-0.4468** (0.0219)	-0.4681** (0.0158)	-0.4340** (0.0232)	-0.5076** (0.0116)
Net grants to GDP	0.1710 (0.1446)	0.1154 (0.2816)	0.1953* (0.0552)	0.2328** (0.0332)	0.1532 (0.1860)	0.1787* (0.0737)	0.1754* (0.0933)	0.1881* (0.0675)
Violent political transition	0.0265** (0.0119)	0.0234*** (0.0068)	0.0272*** (0.0009)	0.0255*** (0.0033)	0.0269*** (0.0026)	0.0271*** (0.0019)	0.0244*** (0.0036)	0.0277*** (0.0002)
Domestic financial liberalization (initial)	0.0317** (0.0355)	0.0168 (0.3297)	0.0251* (0.080)	0.0415*** (0.0073)	0.0248* (0.0977)	0.0244* (0.0781)	0.0260* (0.0644)	0.0235 (0.1512)
Capital account liberalization (initial)	0.0247 (0.2917)	0.0390* (0.0621)	0.0432** (0.0297)	0.0331 (0.1038)		0.0415** (0.0384)	0.0488** (0.0198)	0.0432** (0.0291)
Natural disaster	0.0350** (0.0124)	0.0321** (0.0330)	0.0355*** (0.0036)	0.0303*** (0.0071)	0.0329** (0.0269)	0.0376*** (0.0032)	0.0380*** (0.0027)	0.0356*** (0.0038)
Natural disaster × initial capital account	-0.0499* (0.0788)	-0.0594** (0.0235)	-0.0664*** (0.0056)	-0.0691*** (0.0041)		-0.0666*** (0.0067)	-0.0646*** (0.0079)	-0.0643*** (0.0071)
Lag of current account to GDP	0.0145 (0.8704)							
Trade restrictions (initial)		0.0002 (0.9898)						
Export price			0.0431*** (0.0041)					
Import price index			-0.0252* (0.0679)					
Capital account liberalization (Quinn, 1997)					0.0345* (0.0857)			
Natural disaster × capital account (Quinn, 1997)					-0.0487* (0.0613)			
Fiscal balance to GDP × capital account						-0.3019 (0.3002)		
Population growth × capital account							-1.2912 (0.1067)	
Economic growth × capital account								0.4167 (0.1545)
Per capita real GDP growth								-0.0867 (0.6280)
Observations	121	134	139	172	137	139	139	139
R-squared	0.86	0.84	0.85	0.80	0.84	0.85	0.85	0.85

Note: \*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$ . Robust  $p$ -values in parentheses. Robust panel regressions of the current-account-to-GDP ratio on country fixed effects, a set of control variables (the fiscal-balance-to-GDP ratio, demographic variables), and a set of medium-term determinants of the current account identified in Table 3.1. The dependent variable and explanatory variables are averaged over four-year periods (except when stated otherwise) and cover 1981–2005. Additional control variables are added one at a time: a four-year lag of the medium-term current account, an index of average import tariff, price indexes for exports and imports, an alternative broader measure of capital account liberalization (based on an extension of Quinn, 1997), and interaction terms between the capital account liberalization index and (1) the fiscal balance, (2) population growth, and (3) per capita real GDP growth.

<sup>1</sup>Column (4) considers a broader country sample that includes emerging markets classified as lower-middle-income countries (China, Colombia, India, Indonesia, Pakistan, and Thailand).

**Table 3.4. Current Account Regressions with Different Slopes for Low- and High-Income Countries**

Variables	(1)		(2)		(3)	
	LICs	HICs	LICs	HICs	LICs	HICs
Fiscal balance to GDP	0.3224*** (0.0099)	-0.0811 (0.6449)	0.3176** (0.0147)	-0.1198 (0.4662)	0.3173** (0.0144)	-0.2111 (0.2773)
Old-age dependency	0.1425 (0.6342)	-1.7237** (0.0204)	0.0642 (0.8302)	-1.8566*** (0.0094)	0.0595 (0.8416)	-2.3592*** (0.0064)
Population growth	-1.8436*** (0.0055)	0.0618 (0.9532)	-1.8460*** (0.0075)	-0.4686 (0.6304)	-1.8461*** (0.0073)	-1.6787* (0.0965)
Net foreign assets to GDP	-0.0079 (0.4956)	-0.0646** (0.0171)	-0.0119 (0.3098)	-0.0734*** (0.0048)	-0.0121 (0.2972)	-0.0811*** (0.0062)
Oil trade balance to GDP	-0.0004 (0.9971)	0.0369 (0.8395)	-0.0266 (0.7997)	0.1145 (0.5277)	-0.0282 (0.7861)	0.2615 (0.1923)
Income per capita (relative to United States)	0.1747 (0.4787)	0.2427* (0.0783)	0.1163 (0.6525)	0.1309 (0.2933)	0.1127 (0.6612)	0.1151 (0.3977)
Per capita real GDP growth	0.0916 (0.4954)	-0.2543 (0.2536)	0.1262 (0.3689)	-0.1471 (0.5020)	0.1283 (0.3590)	-0.1891 (0.3929)
Violent political transition	0.0280*** (0.0006)	0.0687*** (0.0001)	0.0273*** (0.0017)	0.0651*** (0.0001)	0.0272*** (0.0016)	0.0589*** (0.0006)
Terms of trade, goods (log)	0.0269** (0.0356)	0.0654* (0.0698)	0.0240* (0.0639)	0.0486 (0.1670)	0.0238* (0.0641)	0.0499 (0.1348)
Concessional loans to GDP	-0.5565*** (0.0085)	...	-0.6426*** (0.0027)	...	-0.6479*** (0.0023)	...
Net grants to GDP	0.2168* (0.0567)	...	0.2138* (0.0649)	...	0.2136* (0.0639)	...
Domestic financial liberalization (initial)	0.0241 (0.1424)	0.0288 (0.3535)	0.0170 (0.3194)	0.0200 (0.5018)	0.0166 (0.3294)	0.0031 (0.9292)
Capital account liberalization (initial)	0.0434** (0.0388)	-0.1145** (0.0197)	0.1917*** (0.0002)	...	0.0916*** (0.0016)	...
Natural disaster	0.0359*** (0.0067)	-0.0021 (0.9465)	0.0353** (0.0106)	-0.0284 (0.3717)	0.0352** (0.0104)	...
Natural disaster × capital account	-0.0627** (0.0153)	0.0853* (0.0824)	-0.0544** (0.0460)	0.1100** (0.0170)	-0.0539** (0.0467)	...
Capital account liberalization (all countries, initial)	...	...	-0.1765*** (0.0009)	...	-0.0781*** (0.0021)	...
Capital account liberalization × GDP per capita	...	...	0.2288** (0.0199)	...	0.2427** (0.0129)	...
Observations	234		234		234	
R-squared	0.83		0.83		0.82	

Note: HICs = high-income countries; LICs = low-income countries. \*\*\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*  $p < 0.1$ . Robust  $p$ -values in parentheses. Robust panel regression of the current-account-to-GDP ratio on a set of medium-term determinants of Table 3.1, column (8). Independent variables are interacted with dummy variables for this sample of LICs and HICs. Sample and period averages are as in Tables 3.1 and 3.2.

### Are Low-Income Countries Different?

Low-income countries are expected to differ from high-income countries because of their higher exposure to shocks, greater distortions, and differ-

ent sources of external financing. Tables 3.4 and 3.5 explore the extent to which various medium-term determinants of the current account have significantly different effects on the current accounts of low-income countries and of high-income coun-

tries, by allowing for different slopes within the same regression (Table 3.4) and testing the significance of their difference (Table 3.5).

Among standard determinants of the current account, the analysis finds that (1) the fiscal balance, (2) the old-age dependency ratio, and (3) initial net foreign assets have significantly different impacts on the current account in LICs relative to other countries. In particular, no significant association is found between the current account and the fiscal balance in high-income countries, a finding consistent with Chinn and Prasad (2003) and Isard and Faruqee (1998). This result is consistent with the hypothesis that Ricardian equivalence is more likely to be a reasonable first-order approximation of consumption and saving decisions in high-income countries than in other countries. The negative sign of the coefficient for the initial net foreign assets position in high-income countries is consistent with the standard intertemporal approach to the current account, which predicts that initially richer countries can sustain lower current account balances in the medium term (hence, more of a dynamic effect than a steady-state relationship).

The analysis seems to find a surprising negative association between the current account and capital account openness for higher-income countries when they do not experience natural disasters (column 1)—a finding seemingly inconsistent with the standard prediction of neoclassical theory because richer countries should experience capital outflows when opening up their capital accounts. Moreover, for this group of countries, the analysis yields a positive coefficient on the interaction term between the capital account openness variable and the natural disaster variable. It is likely that this result stems from the specification in column (1) being ideal for LICs, but not for high-income countries: natural disasters (such as floods, droughts, earthquakes, and windstorms) may not really affect the current account of higher-income economies. Hence, column (2) introduces an interaction term between the capital account openness variable and GDP per

**Table 3.5. F-Tests of Equality (*p*-values) of Coefficients across Income Groups for Regressions Reported in Table 3.4**

Variables	(1)	(2)	(3)
Fiscal balance to GDP	0.06	0.04	0.02
Old-age dependency	0.02	0.01	0.01
Population growth	0.13	0.24	0.89
Net foreign assets to GDP	0.05	0.03	0.03
Oil trade balance to GDP	0.86	0.50	0.20
Income per capita (relative to United States)	0.81	0.96	0.99
Per capita real GDP growth	0.18	0.29	0.23
Violent political transition	0.03	0.04	0.09
Terms of trade, goods (log)	0.31	0.51	0.46
Domestic financial liberalization (initial)	0.89	0.93	0.73
Capital account liberalization (initial)	0.00	...	...
Natural disaster	0.27	0.06	...
Natural disaster $\times$ capital account	0.01	0.00	...

Note: Null hypothesis: coefficient HIC = coefficient LIC (*p*-value of *F*-test is reported). Regressions are those reported in Table 3.4.

capita for the whole sample as a way to test more directly the prediction of neoclassical theory that capital should flow from more-developed to less-developed countries. A positive coefficient is found for the interaction term, which is consistent with the prediction of this theory, and the total effect of capital account liberalization on the current account is positive for the richer countries.<sup>16</sup> It is also possible that natural disasters are not relevant from a macroeconomic perspective for high-income countries (see the insignificant coefficient on this variable for the higher-income group). The regression in column (3) drops the natural disaster variable and the interaction term, and shows that the interaction of the capital account liberalization index with GDP per capita is still consistent with the prediction of standard development theory.

<sup>16</sup>The total effect of capital account openness on the current account turns positive at a GDP per capita of about two-thirds of the U.S. GDP per capita for countries that do not experience natural disasters, and at one-third that of the U.S. GDP for countries that experience natural disasters.