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Debt intolerance: An Executive summary

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Speaking before the IDB Board of Directors, Carmen Reinhart discussed the syndrome of "debt intolerance," whereby countries with weak institutional structures and problematic political systems borrow in order to avoid difficult fiscal decisions but subsequently find themselves unwilling or unable to repay. Debt intolerance, it should be noted, is by no means a recent phenomenon: the historical record shows repeated defaults by several European countries before 1900 and, in some instances, well into the twentieth century.

For currently debt-intolerant countries, which are found among the emerging economies, the threshold for "safe" debt levels is surprisingly low, at approximately 35 percent of Gross National Product, with attendant risks of default and debt restructuring. For some countries, which have histories of bad credit and high inflation, the threshold is even lower. Another notable characteristic of debt-intolerant countries is that their debt-to-GNP ratio is much higher than that of countries with no history of default (on average, the figure for frequent defaulters is 28 percent, while that of their non-default peers is only 14 percent). Moreover, these ratios appear to predict default more accurately than the Institutional Investor country ratings.

For purposes of cross-national comparison, countries are divided into three "debtors' clubs." The first, and most exclusive, consists of advanced economies with continuous access to capital markets. At the other extreme are highly indebted poor countries with no access to capital markets. Between these two clubs lies a continuum of countries with intermittent access to capital, and for them only incremental changes in risk can greatly increase the chance of default. That risk is influenced particularly by debt level, a history of high inflation, and a history of previous defaults.

General trends notwithstanding, safe debt thresholds are country-specific and may be well above or well below average levels.

Whatever countries' debt history may be, it appears that they can graduate from debt intolerance through sustained discipline in borrowing. Under almost no circumstances has it been possible for countries to grow out of their debts; the only available example is provided by Swaziland in 1985. Foreign debt reversals, defined as a decline of 25 or more percentage points of GNP within a three-year period, are generally achieved by one of the following two means: i) default or restructuring, or ii) significant debt repayment. Once countries have achieved debt reversals, though, they must refrain from quickly releveraging to previous levels of indebtedness, and they must hold down debt levels for approximately 25 years in order to escape the cycle of debt intolerance. Experience to date indicates that financial markets cannot be counted upon to discipline countries' borrowing behavior, as the pursuit of high yields has repeatedly led to ill-advised investments in emerging markets.

In addition to international debt intolerance, the newer phenomenon of domestic debt intolerance poses additional dangers. Before the 1980s domestic debt in developing countries did not represent a great cause for international concern, as financial repression through bank financing usually provided access to funds at low interest rates. In addition, until that time domestic debt was not widely traded. Following the banking crises in many developing countries during the 1980s, the restructuring and in some case privatization of financial systems led governments to seek new sources of debt. Movement toward other sources, including debt denominated in foreign currencies, increasingly blurred the line between debt placed on domestic and international markets.

Governments' use of debt to finance deficits appears to have been intensified by the effects of structural reform policies such as lower tariff revenues and a reduction in the de facto "inflation tax" as macroeconomic discipline figured more prominently in national policies.

The tendency to incur dollarized domestic debt calls for particular attention, as this represents a form of domestic debt intolerance. Resulting from the same factors as external debt intolerance, namely concerns regarding inflation in national currencies and governments' ability to repay, dollarized debt paradoxically makes countries more vulnerable due to a currency mismatch between revenues and debts. Given debt-intolerant governments' past behavior toward foreign creditors, it appears quite possible that a wave of restructurings or outright defaults of domestic debt may take place in the early part of the twenty-first century.

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Debt Intolerance

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Road map

- Concept of debt intolerance
- Key Findings
- Brief history of debt intolerance
- Debt thresholds, debtor's clubs and debt intolerance regions
- Debt and the origins of country risk
- Debt reversals
- Domestic debt: the "new" problem
- Policy implications and concluding remarks

Debt intolerance

- Syndrome where weak institutional structures and a problematic political system make external borrowing a useful device for developing country governments to avoid hard decisions about spending and taxing.
- Governments suffer from intolerance to repayment, not to borrowing.

Debt intolerance

- Some models suggest that for a range of low external debt, a country's probability of default or restructuring is low.
  - For a range of high external debt, it is shut off from international credit markets.
  - But when external debt is in an intermediate range there is an indeterminacy and the country may be suddenly shut off.

Debt intolerance

- Our goal is to operationalize the indeterminacy region, so as to distinguish among countries in terms of their “debt intolerance.”
- We make a first pass at defining the range of debt levels at which risks of credit events rise significantly, using a history of credit events for over 100 countries going back to the 1820s.

Key findings

- For debt intolerant countries, “safe” debt thresholds are surprisingly low
- Serial default is pervasive in history—it helps explain who is debt intolerant
- Countries rarely “grow out” of their debts—default is the most common way out
- Domestic debt intolerance may be the “new” problem going forward

Table 1. Inflation, External Debt Defaults and Country Risk: 1824–2001

	Percent of 12-month periods with inflation at or above 40 percent, 1958:1–2001:12 [a]	*Number of default or restructuring episodes 1824-1999*	*Percent of years in a state of default or restructuring 1824-1999*	*Number of years since last year in default or restructuring status*	*Institutional Investor Ratings, September 2002* [b]
	Emerging market countries with at least one external default or restructuring since 1824				
Argentina	47.2	4	25.6	0	15.8
Brazil	59.0	7	25.6	7	39.9
Chile	18.6	3	23.3	17	66.1
Colombia	0.8	7	38.6	57	38.7
Egypt	0.0	2	12.5	17	45.5
Mexico	16.7	8	46.9	12	59.0
Philippines	2.1	1	18.5	10	44.9
Turkey	57.8	6	16.5	20	33.8
Venezuela	11.6	9	38.6	4	30.6
Group average	*23.8*	*5.2*	*27.3*	*16*	*41.6*
	Emerging market countries with no external default history				
Group average	*0.0*	*0*	*0.0*	*...*	*61.7*
	Industrial economies with no external default history				
Group average	*0.0*	*0*	*0.0*	*....*	*89.2*

Early history of default

- European countries set benchmarks that today's emerging markets have yet to surpass
  - Spain defaulted 13 times between 1500 and 1900;
  - Venezuela, the post-1800 record holder in our sample, has defaulted on external debt "only" nine times.

Table 2. An Early History of External Debt Defaults: Europe before the Twentieth Century

	1501–1800		*1801–1900*		
	number of defaults	*years of default*	*number of defaults*	*years of default*	*Total defaults*
Spain	6	1557, 1575, 1596 1607, 1627, 1647	7	1820, 1831, 1834, 1851 1867, 1872, 1882	13
France	8	1558, 1624, 1648, 1661 1701, 1715, 1770, 1788	n.a.		8[a]
Portugal	1	1560	5	1837, 1841, 1845 1852, 1890	6
Germany[b]	1	1683	5	1807, 1812, 1813 1814, 1850	6
Austria	n.a.	n.a.	5	1802, 1805 1811 1816, 1868	5
Greece	n.a.	n.a.	4	1826, 1843, 1860, 1893	4
Bulgaria	n.a.	n.a.	2	1886, 1891	2
Holland	n.a.	n.a.	1	1814	1
Russia	n.a.	n.a.	1	1839	1
Total	*16*		*30*		*46*

Debt thresholds

- The debt thresholds for developing countries with debt intolerance are much lower than for advanced economies.
- Fewer than 17 percent of all defaults (or restructurings) in middle income since 1970 occurred at levels of external debt-to-output above 100 percent.
- About one half of the defaults or restructurings occurred at debt-to-output levels below the 60 percent threshold set forth in the Maastricht Treaty. This highlights the irrelevance of using advanced economies debt-to-output ratios as benchmarks for comparisons.

Table 4. Frequency Distribution of External Debt Ratios in Middle-income Countries at the Time of Default: 1970–2001

External debt-to-GNP range in first year of default or restructuring	*Percent of total defaults or restructurings*
Below 40 percent	13
41 to 60 percent	40
61 to 80 percent	13
81 to 100 percent	20
Above 100 percent	13

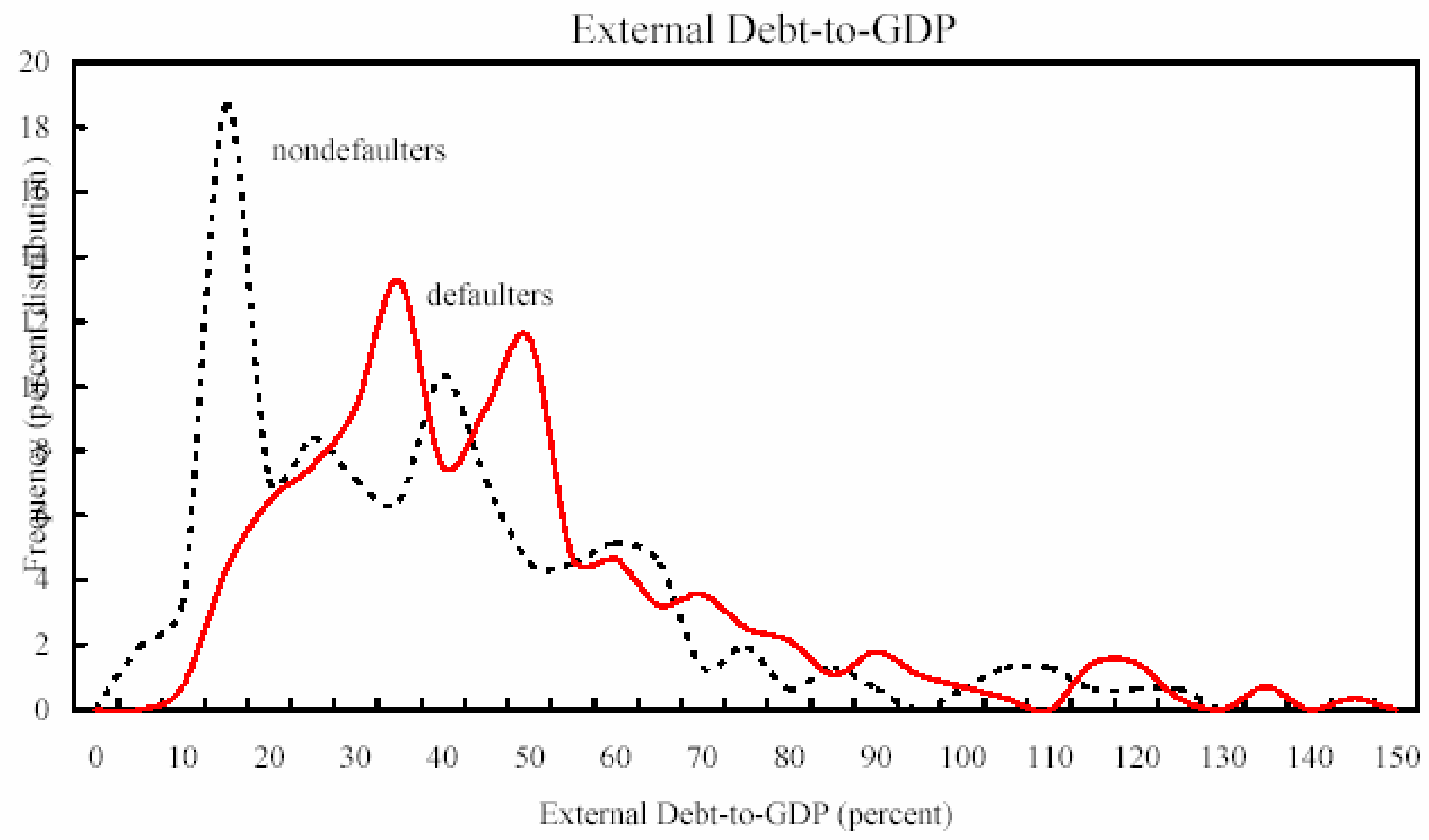
Debt thresholds

- Our analysis suggests that for developing countries as a whole a 35 percent external debt-to-GNP threshold is reasonable
- For some countries with a poor credit and inflation track record that threshold is much lower

Debt thresholds

- The countries with no history of default borrow far less than those with a less pristine credit history
- The mode debt-to-GNP ratio for the former is 14 percent—half of the 28 percent mode for the defaulters.

Figure 1. Frequency Distribution of External Debt Ratios Among Defaulters and Nondefaulters, 1970–2000



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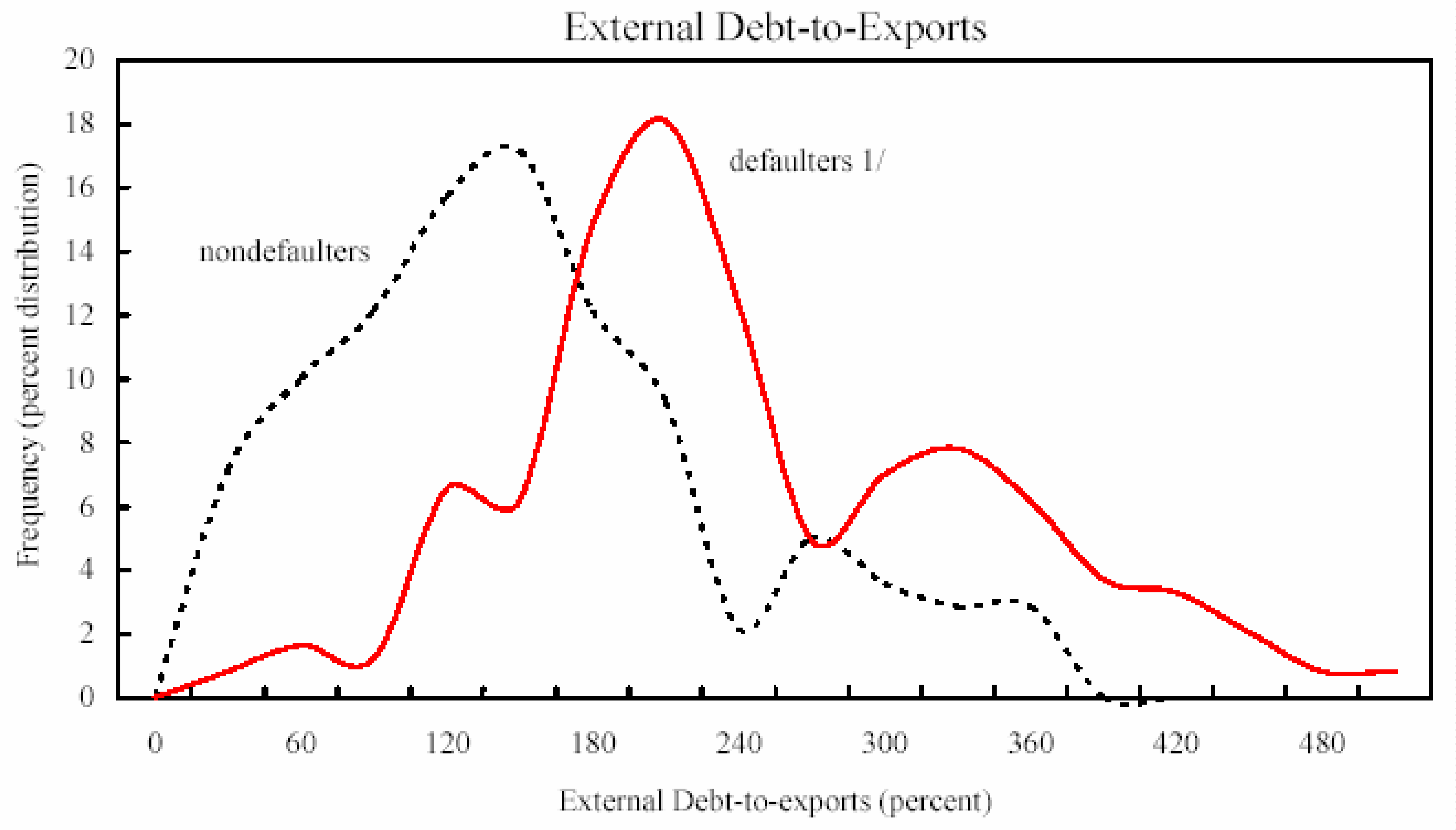


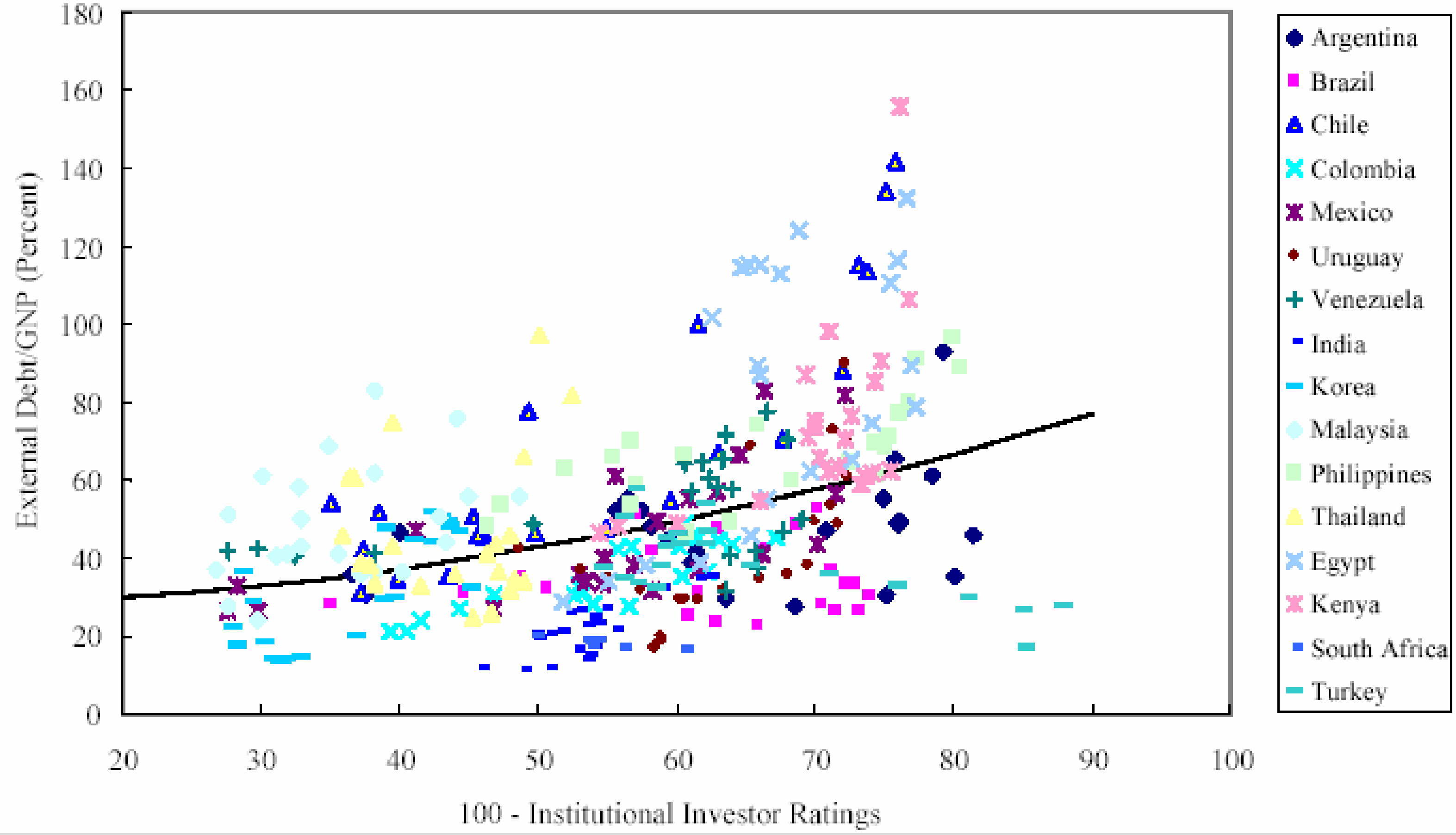
Table 5. Frequency Distribution of External Debt Ratios in Emerging Market Economies: 1970–2000

External debt-to-GNP Ratio (in percent)	*Economies without a history of external default*		*Economies with history of external default*	
	Density (percent of countries)	Cumulative distribution	Density (percent of countries)	Cumulative distribution
0	0	0	0	0
5	1.9	1.9	0	0
10	3.2	5.2	0.7	0.7
15	18.7	23.9	4.3	5.0
20	7.1	31.0	6.5	11.5
25	8.4	39.4	7.5	19.0
30	7.1	46.5	9.3	28.3
35	6.5	52.9	13.3	41.6
40	10.3	63.2	7.5	49.1
45	7.1	70.3	9.3	58.4
50	4.5	74.8	11.5	69.9
Memoranda				
Mode	14.0		28.0	
Median	33.3		40.9	

The components debt intolerance

- Risk measures are influenced by the level of debt
- The opposite is also true.
- Next, we turn to defining debt intolerance regions for the countries where there is a possible indeterminacy of equilibrium

Figure 2. External Debt and Default Risk In Selected Emerging Market Economies, 1979–2000



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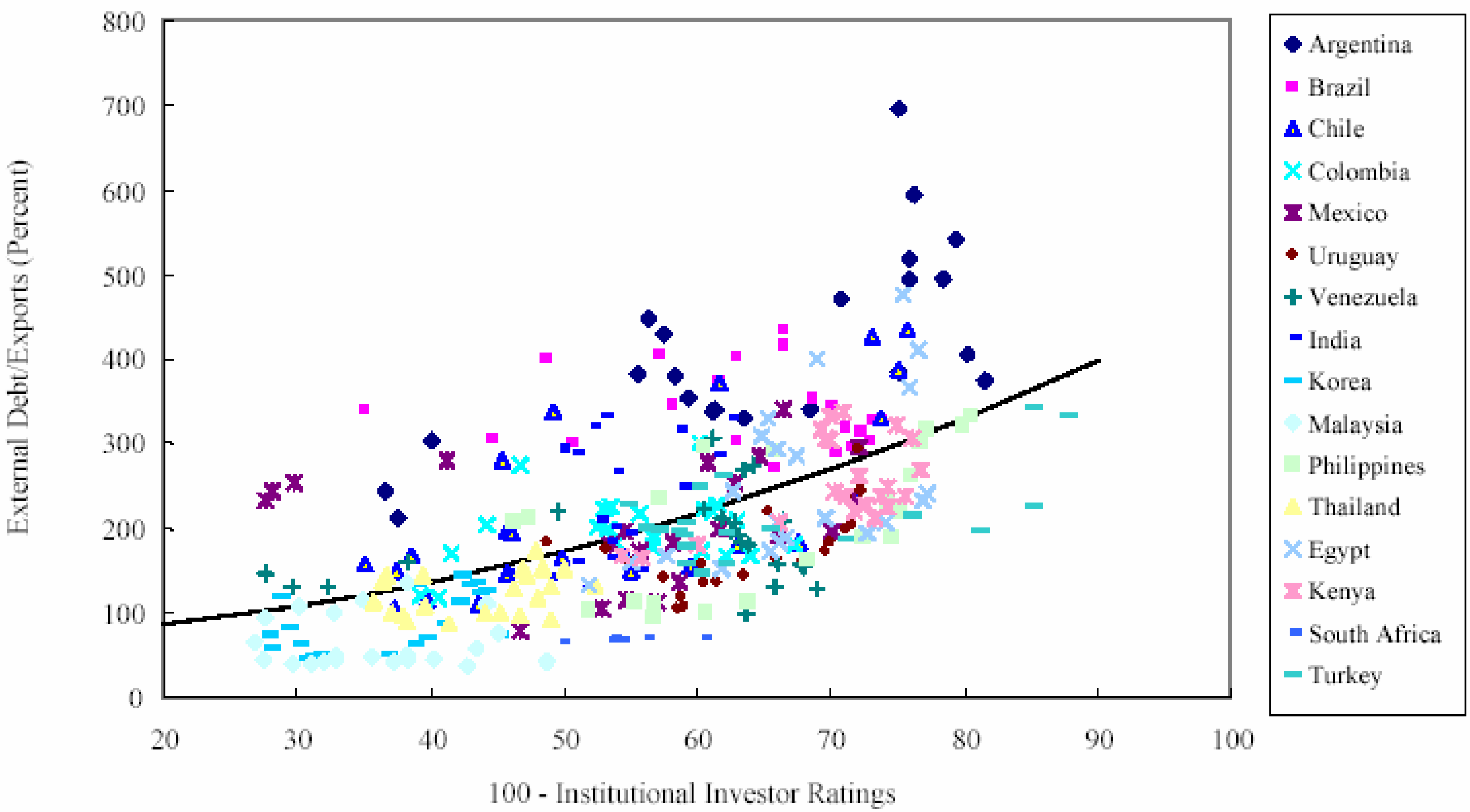


Table 6. Alternative Measures of Risk and External Debt Burden: (Period averages, as indicated)

	Institutional Investor Ratings 1979–2002	*Secondary market prices 1986–1992*	*EMBI spread* [a]	*Debt/GNP 1970–2000 (in percent)*	*Debt/Exports 1970–2000 (in percent)*
	Emerging market economies with at least one external default or restructuring since 1824				
Argentina	34.7	34.9	1,756	37.1	368.8
Brazil	37.4	42.9	845	30.7	330.7
Chile	47.5	70.8	186	58.4	220.7
Colombia	44.6	71.4	649	33.6	193.5
Egypt	33.7	n.a.	442	70.6	226.7
Mexico	45.8	56.0	593	38.2	200.2
Philippines	34.7	54.4	464	55.2	200.3
Turkey	34.9	n.a.	663	31.5	210.1
Venezuela	41.5	59.6	1,021	41.3	145.9
Group average	*39.4*	*55.7*	*638*	*44.1*	*232.9*
	Emerging market economies with no external default history				
Group average	*61.8*	*n.a.*	*214*	*27.0*	*98.6*
	Industrial economies with no external default history [b]				
Group average	*81.3*	*n.a.*	*n.a.*	*54.2*	*281.0*

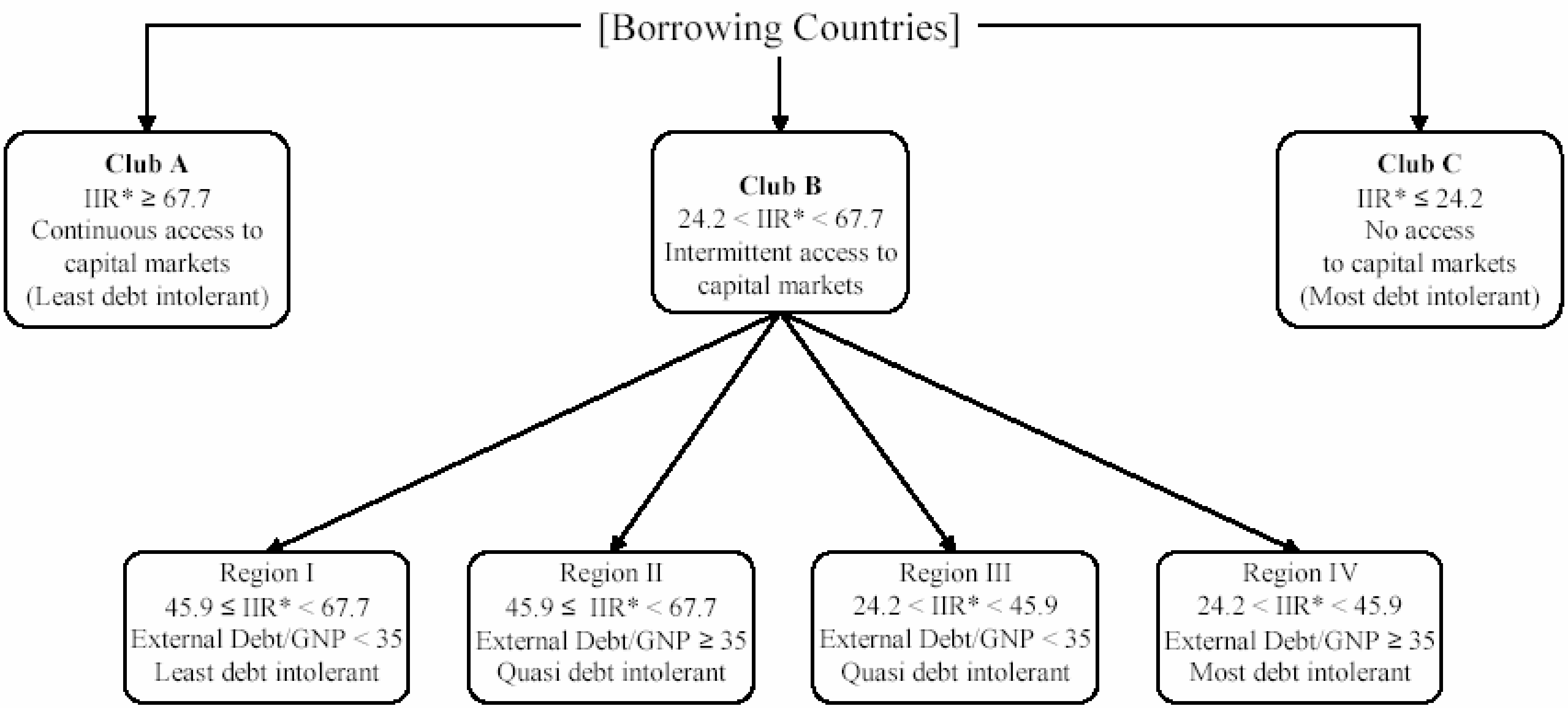
Table 7. Pairwise Correlations between Alternative Measures of Risk and Debt by Developing Region

	100-Institutional Investor Ratings 1979-2000	*100-Secondary Market Prices 1986-1992*	*EMBI Spread* [a]
	Correlations with External debt-to-GNP		
All developing	0.40*	0.47*	0.55*
Africa	0.22	0.65*	0.73*
Emerging Asia	0.44*	n.a.	n.a.
Middle East	0.18	n.a.	n.a.
Western Hemisphere	0.38*	0.50*	0.45*
	Correlations with External debt-to-exports		
All developing	0.61*	0.58*	0.37*
Africa	0.60*	0.59*	0.67*
Emerging Asia	0.74*	n.a.	n.a.
Middle East	0.51*	n.a.	n.a.
Western Hemisphere	0.43*	0.59*	0.06

Defining Debtors' clubs

And debt intolerance regions

Figure 3. Defining Debtors' Clubs and External Debt Intolerance Regions



The origins of debt intolerance

We try to explain the components of debt intolerance with information on history and "clubs"

Probability of default, 1824-1999

Probability of inflation ≥ 40 percent, 1958-2001

Advanced economy dummy variable

Robustness checks

- Other measures of credit history
- Panel regressions
- Replacing debt/GNP with debt/exports

The origins of debt intolerance

- The effects of debt on country risk are very different in advanced and developed economies
- Debt levels significantly increase risks in developing economies
- A history of high inflation and default systematically increase risk and separate the developing countries into two separate clubs

Country-specific debt thresholds

- A contrast of Argentina and Malaysia

Table 9. Predicted *Institutional Investor* Ratings and Debt Intolerant Regions for Argentina and Malaysia

	Argentina		*Malaysia*	
External debt/GNP (percent)	*Predicted Institutional Investor Rating*	*Region Type*	*Predicted Institutional Investor Rating*	*Region Type*
0	51.4	I	61.1	I
5	49.3	I	59.0	I
10	47.3	I	57.0	I
15	45.2	III	54.9	I
20	43.2	III	52.9	I
25	41.1	III	50.8	I
30	39.1	III	48.8	I
35	37.0	III	46.7	II
40	34.9	IV	44.7	IV
45	32.9	IV	42.6	IV

Moving in and out of debt intolerance regions

- An illustration for the case of Brazil

Graduating from debt intolerance

- Five potential candidates

Ranking debt intolerance

- For club B members only: Two simple measures
- (external debt/GNP)/IIR
- (external debt/exports)/IIR

Table 12. Summary Debt Intolerance Measures in Club B Countries: 1979–2000

	(External debt/GNP)/ Institutional Investor Rating	*(External debt/Exports)/ Institutional Investor Rating*
Countries with at least one external default or restructuring since 1824		
Argentina	1.1	10.6
Brazil	0.8	8.8
Chile	1.2	4.7
Colombia	0.8	4.3
Egypt	2.1	6.7
Mexico	0.8	4.4
Philippines	1.6	5.8
Turkey	0.9	6.0
Venezuela	1.0	3.5
Group average	*1.1*	*6.1*
Countries with no external default history		
India	0.4	4.2
Korea	0.5	1.4
Malaysia	0.6	1.0
Singapore	0.1	0.1
Thailand	0.7	2.0
Group average	*0.5*	*1.7*

Debt reversals

- How have highly indebted countries deleveraged—do they typically grow out of their debts?
- Definition: Episodes where external debt fell by more than 25 percentage points of GNP over a three-year period and where either:
  - (1) the decline in the debt ratio was driven by a decline of 10 percent or more in the nominal value of debt over 3 years or;
  - (2) average growth in the 3-year period is five percent or more.

Debt reversals: results

- For middle income countries, we identified 22 such debt reversals since 1970
- 15 involved some form of default or restructuring.
- In 5 of the 7 episodes that did not involve an external credit event, debt ratios were brought down through a significant debt repayment.
- Only in one case (Swaziland, 1985), a country was able to reduce its external debt to output burden by growing out of its debts.

The missing Brady bunch

- Conspicuously absent from the large debt reversal episodes are most of the Brady restructuring deals of the 1990s.
- Our algorithm picks up Bulgaria, Costa Rica, Jordan, Nigeria, and Vietnam, larger countries such as Brazil, Mexico and Poland do not show up!
- Why?

Quick to releverage

- For Argentina and Peru, debt-to-GNP was already higher three years after the Brady deal than what it had been in the year prior to the restructuring.
- By 2000, 7 of the 17 had ratios of debt-to-GNP that were higher than those at 3 years after the deal (Argentina, Brazil, Ecuador, Peru, Philippines, Poland, and Uruguay)
- In 4 (Argentina, Brazil, Ecuador, and Peru) the debt ratio in 2000 was above the levels recorded prior to the Brady.
- By 2002, 3 members of the Brady bunch had once again defaulted on their external debt (Argentina, Côte D'Ivoire, and Ecuador)
- A few others are teetering are on the brink...

Domestic Debt and Liberalization

- Until the 1980s,
  - few developing governments had marketable domestic debt
  - and/or were able to place debt domestically without essentially forcing banks to hold it through financial repression.

The growth of domestic government debt

- Our new data base shows a particularly sharp rise in the Asian countries but also in a number of Latin American countries as well as in Turkey.

- A rising fraction of domestic debt is linked to a foreign currency.

Figure 4. Emerging Market Countries: Domestic Government Debt, 1996–2001

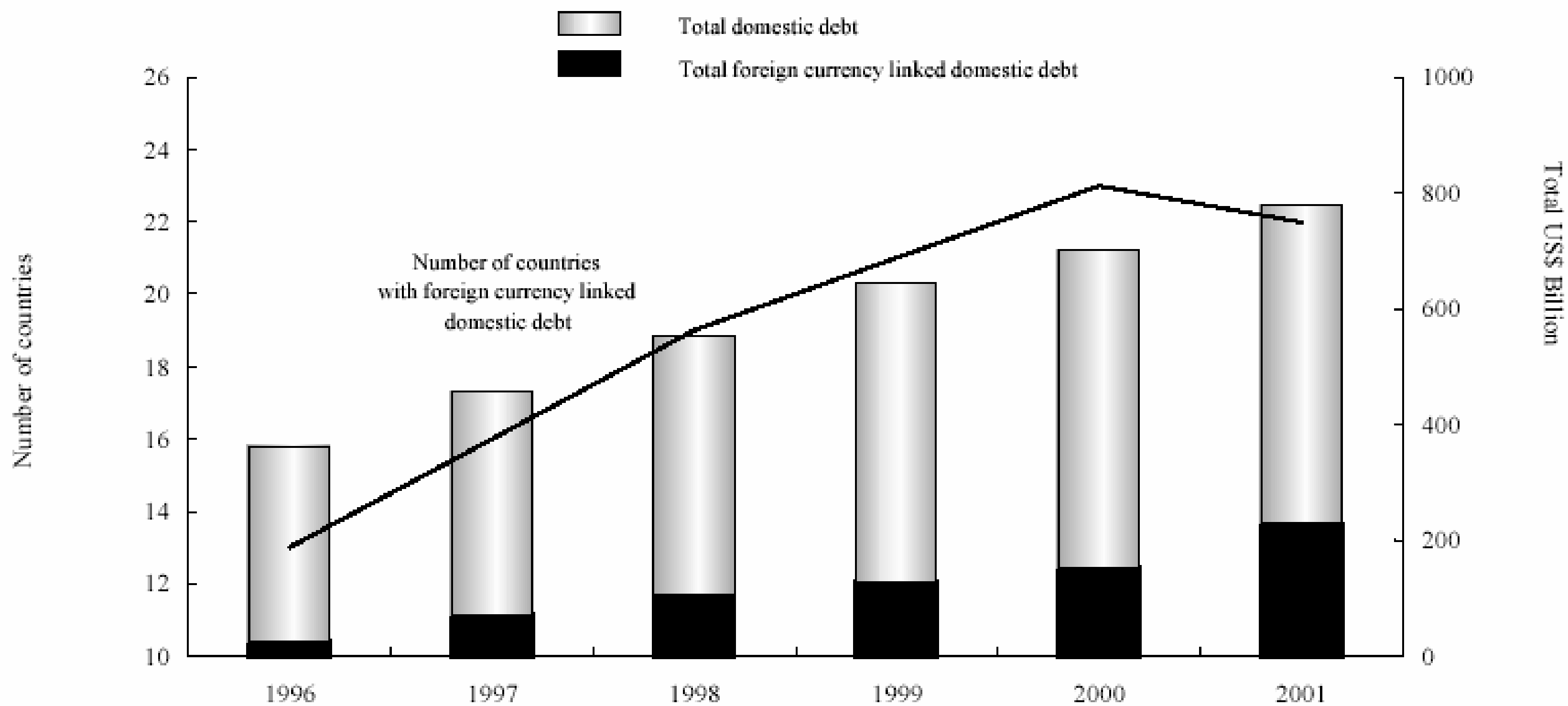


Table 15. Domestic and External Government Debt in Emerging Market Economies: the 1980s and the 1990s (percent of GDP)

	Early 1980s [a]			Late 1990s [b]		
	Domestic debt [c]	*External debt* [d]	*Total government debt*	*Domestic debt* [c]	*External debt* [d]	*Total government debt*
Countries with at least one external default or restructuring since 1824						
Argentina	13.2	38.4	51.6	15.4	36.4	51.8
Brazil	15.9	31.4	47.3	35.8	18.5	54.3
Chile	10.8	45.9	56.7	27.3	8.8	36.1
Colombia	4.4	25.8	30.2	12.4	24.5	36.9
Mexico	2.3	37.7	40.0	9.5	26.8	36.3
Philippines	13.6	60.3	73.9	43.0	48.8	91.8
Turkey	12.9	28.8	41.7	24.4	36.5	60.9
Venezuela	11.6	38.5	50.1	7.4	32.6	40.0
average	*10.6*	*38.4*	*48.9*	*21.9*	*29.1*	*51.0*
Countries with no history of external default						
India	7.1	12.3	19.4	64.9	20.6	85.5
Korea	9.4	41.9	51.3	41.6	21.1	62.7
Malaysia	20.8	39.0	59.8	35.1	30.7	65.8
Thailand	6.1	25.2	31.3	34.6	41.5	76.1
average	*10.9*	*29.6*	*40.5*	*44.1*	*28.5*	*72.5*

As regards domestic dollarization...

- It is yet another form of domestic debt intolerance
- We find that it is explained by the same historical factors (inflation and default probabilities) as our measures of external debt intolerance.

Behind the growth in domestic debt

- Vanishing revenues
- Higher interest outlays
- Readiness to borrow
- Wider investor base

Concluding remarks

Two points:

1. External debt thresholds

- Are low for emerging market countries
- 35 percent is conservative but…
- For those countries with a patchy history, binding constraints start to have teeth at even lower levels of debt.
- Thresholds are, above all, country-specific

2. Domestic debt intolerance

- It seems unreasonable to expect that the governments of these countries would refrain from doing to their domestic debts what many of them in the past have done to their external obligations—often more than once.
- A wave of restructurings or outright default on domestic government debts seems to loom large in the horizon of emerging market economies in the early part of the 21st century.