

TARIFF REVENUE AND SMUGGLING

1. The smuggling of nonprohibited goods is driven mainly by economic considerations. Reducing or removing tariffs and other barriers to trade is likely to take away much of the incentive to engage in informal trade, or smuggling. In this Appendix, we describe the conditions under which this would occur, and identify the impact on revenue collection. If the lowest-cost supplier is from outside the Association of Southeast Asian Nations (ASEAN) region, then nondiscriminatory, multilateral reduction of tariffs will further reduce the incentive to smuggle. In other words, the magnitude of the tariff reduction required to remove the incentive to smuggle will be lower if the lowest-cost supplier is non-ASEAN, and the liberalization is multilateral. In the presence of tariffs and other barriers to trade,¹ smuggling will occur if

$$s < t(1) \quad (1)$$

$$\text{i.e., } p(1+s) < p(1+t(1)). \quad (1a),$$

where p is the marginal cost of the import, $t(1)$ is the pre-reform tariff rate plus the tariff equivalent of non-tariff and other barriers to trade (measured as a fraction of p), and s is the “smuggling premium” (i.e. the payment that the syndicate extracts for the smuggling activity, also measured as a fraction of p).²

2. If tariff and other barriers are reduced to $t(2)$ such that

$$s > t(2), \quad (2),$$

then the incentive to smuggle is removed. Smuggling ceases because it is now cheaper for the importer to pay the new tariff-inclusive price than the smuggling premium-inclusive price,

$$\text{i.e., } p(1+s) > p(1+t(2)). \quad (3).$$

3. Implications for revenue collection are important if the import were smuggled in the pre-reform period because of the magnitude of the tariff (i.e. $t(1) > s$), but smuggling ceased when the tariff was reduced (i.e. $t(2) < s$). First, as long as the new tariff is greater than zero (i.e. $t(2) > 0$), tariff revenue collections will increase because no tariff revenue was collected on the smuggled good. Tariff revenues could increase by even more under nondiscriminatory liberalization if the lowest-cost supplier were from outside ASEAN because the tariff reduction required to satisfy equation 2 would be lower. Second, we can see from equation (3) that the price of the import in the domestic market will fall, relative to the smuggling premium-inclusive price. The price reduction associated with the switch out of smuggling will increase the volume of the import, *ceteris paribus*. This will further increase total tariff revenue collections.³

¹ Apart from tariffs, other barriers to trade include factors such as various technical non-tariff barriers, excessive red tape, problems with transport at borders. It is reasonable to assume that these other barriers apply equally to intra-, as opposed to extra-ASEAN imports.

² We assume that the costs to the smuggler associated with organizing the import of the good through illegal channels is less than the benefit, ($p > s$).

³ Apart from the potential to increase tariff revenue collections, the reduction in smuggling has at least two other effects. First, the share of recorded trade in total (recorded plus unrecorded) trade will increase, thus improving the reliability of trade data. Second, the informal market for finance, which is the monetary dual to the informal trade problem, will likely diminish in significance, thus improving the ability of monetary authorities to conduct monetary policy. Reducing the informal market for finance as a result of reduced smuggling also implies an overall improvement in a country's governance climate.

ECONOMIC AND SOCIAL INDICATORS

Table A2.1: GDP Growth, 1999–2003
(%)

Country	1999	2000	2001	2002	2003
Cambodia	6.9	7.7	6.3	5.5	5.0
Lao PDR	7.3	5.9	5.7	5.8	5.9
Myanmar	10.9	13.7	13.0 ^a	9.7 ^a	—
Thailand	4.4	4.6	1.9	5.2	6.4
Viet Nam	4.7	6.1	5.8	6.5	7.1
Yunnan Province, PRC	7.2	7.1	6.5	—	—
Average for GMS ^b	5.6	6.3	4.8	6.2 ^c	—

— = not available.

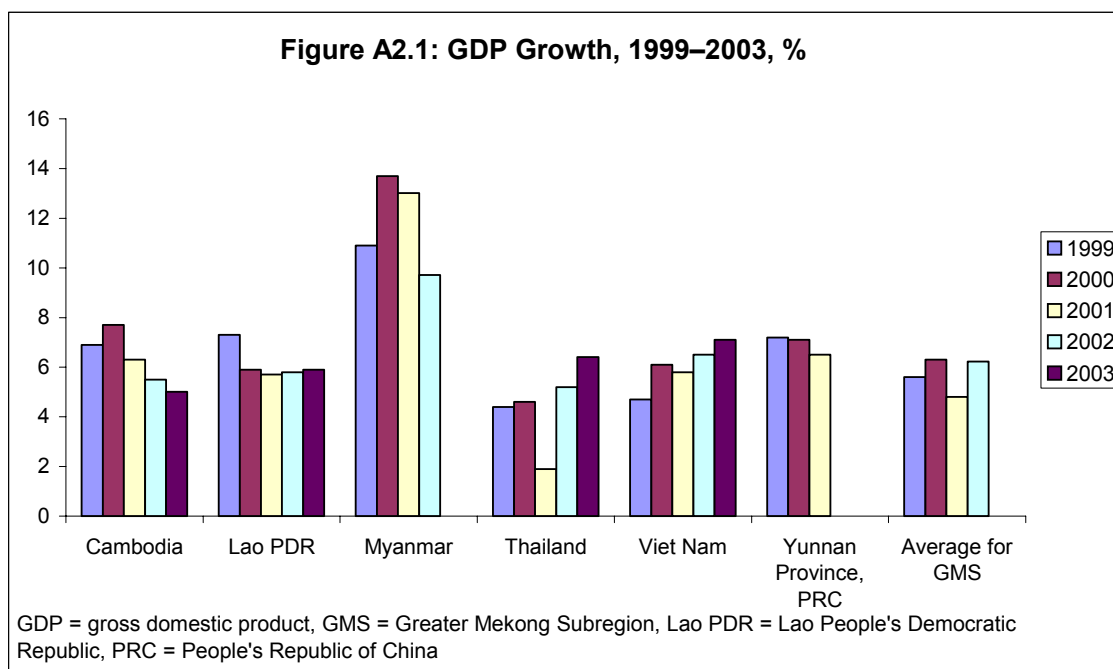
GDP = gross domestic product, GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic, PPP = purchasing power parity, PRC = People's Republic of China.

^a Source: Ministry of National Planning and Economic Development Statistical Yearbook, various issues.

^b Weighted average based on PPP gross national income shares.

^c Weighted average does not include Yunnan Province, PRC, in 2002 because data are not yet available.

Sources: Asian Development Bank. *Key Indicators*. Manila; Bank of Lao PDR; General Statistics Office, Viet Nam; International Monetary Fund; Ministry of Finance, Lao PDR; Ministry of Economy and Finance, Cambodia; National Bank of Cambodia; National Bureau of Statistics of China. *China Statistical Yearbook*. National Economic and Social Development Board, Thailand; National Institute of Statistics, Cambodia; National Statistical Center, Lao PDR; State Bank of Viet Nam; Asian Development Bank estimates.



**Table A2.2: Inflation Rate (Consumer Price Index)
1999–2003, (%)**

Country	1999	2000	2001	2002	2003
Cambodia ^a	—	0.5	(0.5)	3.0	1.0
Lao PDR	134.0	27.1	7.8	10.6	15.5
Myanmar	18.4	(0.1)	21.1	57.1	—
Thailand	0.3	1.6	1.6	0.7	1.8
Viet Nam	0.1	(0.6)	0.8	4.0	4.0

— = not available.

Lao PDR = Lao People's Democratic Republic.

^a Final quarter of the year.

Sources: Bank of Lao PDR; General Statistics Office, Viet Nam; International Monetary Fund; Ministry of Finance, Lao PDR; Ministry of Economy and Finance, Cambodia; National Bank of Cambodia; National Economic and Social Development Board, Thailand; National Institute of Statistics, Cambodia; National Statistical Center, Lao PDR; State Bank of Viet Nam; Asian Development Bank estimates.

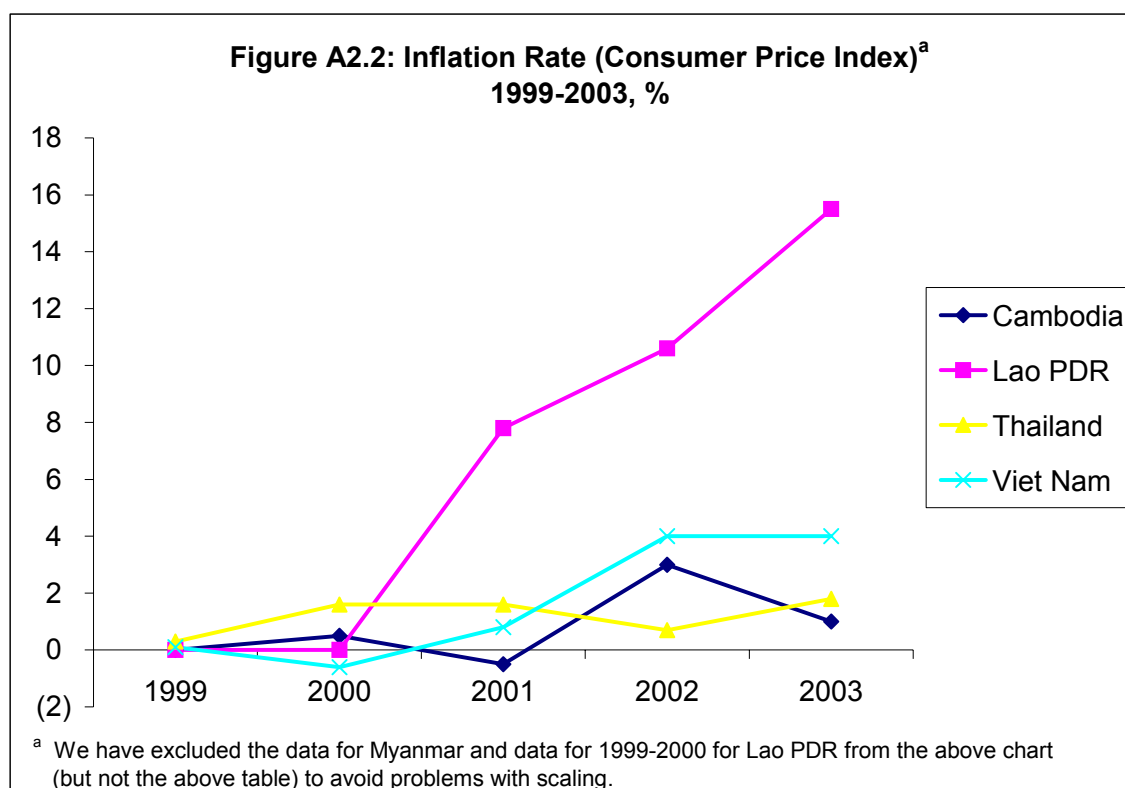


Table A2.3: Fiscal Balance/GDP^a
1999–2003, (%)

Country	1999	2000	2001	2002	2003
Cambodia ^a	(4.2)	(5.3)	(6.0)	(5.9)	(6.1)
Lao PDR ^a	(8.8)	(8.3)	(7.5)	(8.3)	(7.8)
Myanmar	(0.2)	0.7	—	—	—
Thailand ^b	(11.2)	(2.4)	(2.1)	(2.2)	0.6
Viet Nam	(2.8)	(4.8)	(3.7)	(3.5)	(4.3)

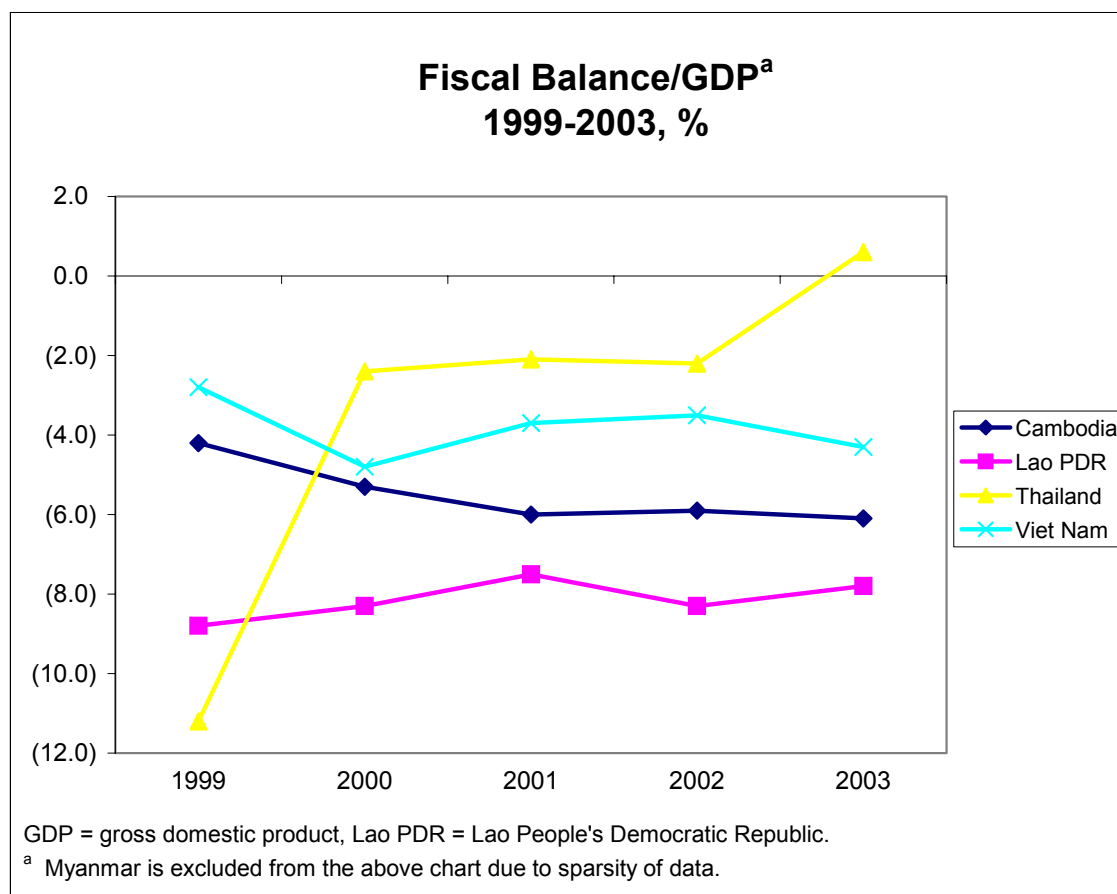
— = not available.

GDP = gross domestic product, Lao PDR = Lao People's Democratic Republic.

^a Excluding grants.

^b Includes national government's budgetary and nonbudgetary accounts.

Sources: Bank of Lao PDR; General Statistics Office, Viet Nam; International Monetary Fund; Ministry of Finance, Lao PDR; Ministry of Economy and Finance, Cambodia; National Bank of Cambodia; National Economic and Social Development Board, Thailand; National Institute of Statistics, Cambodia; National Statistical Center, Lao PDR; State Bank of Viet Nam; Asian Development Bank estimates.



**Table A2.4: Current Account Balance/GDP^a
1999–2003, (%)**

Country	1999	2000	2001	2002	2003
Cambodia	(8.4)	(7.6)	(6.3)	(8.1)	(8.9)
Lao PDR	(6.3)	(8.3)	(6.9)	(5.6)	(5.4)
Thailand	10.0	7.6	5.3	6.0	6.0
Viet Nam	4.1	1.7	1.5	(2.8)	(6.2)

GDP = gross domestic product, Lao PDR = Lao People's Democratic Republic.

^a Excluding official transfers.

Sources: Bank of Lao PDR; General Statistics Office, Viet Nam; International Monetary Fund; Ministry of Finance, Lao PDR; Ministry of Economy and Finance, Cambodia; National Bank of Cambodia; National Economic and Social Development Board, Thailand; National Institute of Statistics, Cambodia; National Statistical Center, Lao PDR; State Bank of Viet Nam; Asian Development Bank estimates.

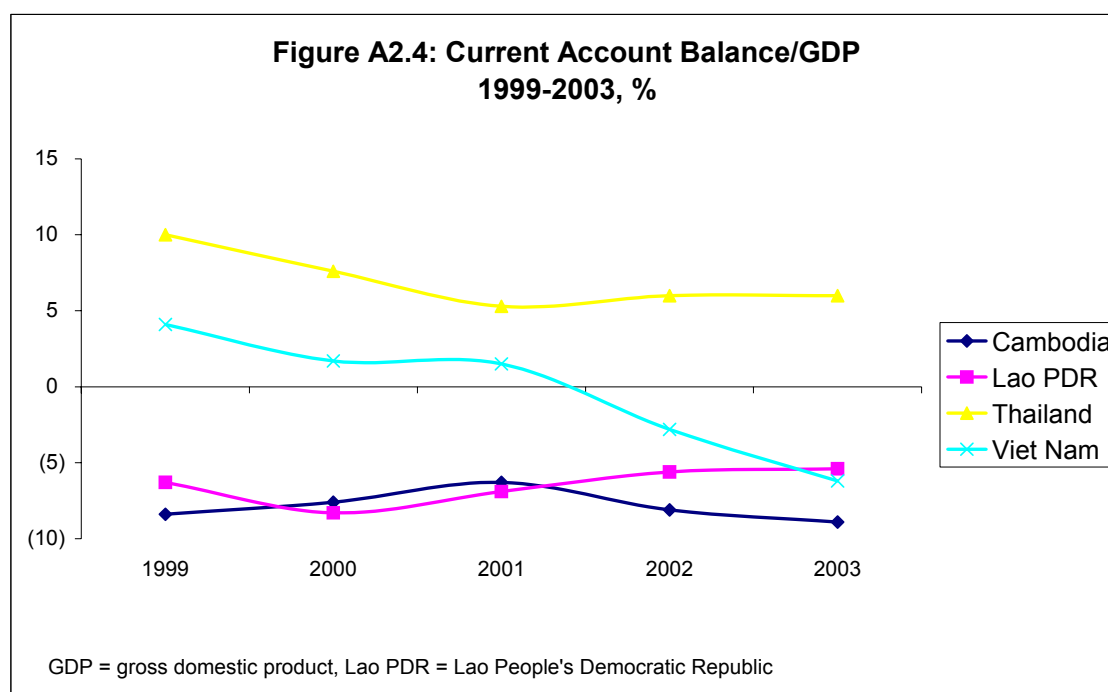


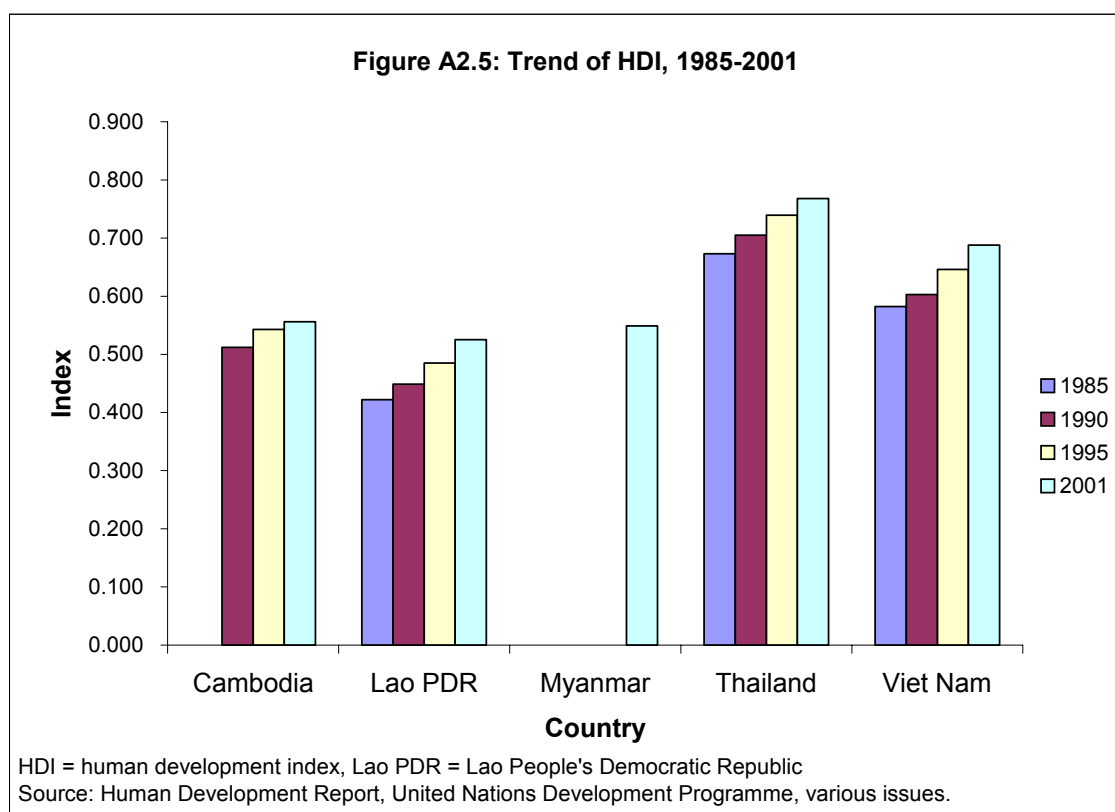
Table A2.5: Human Development Index, 1985–2001

Country	1985	1990	1995	2001
Cambodia	—	0.512	0.543	0.556
Lao PDR	0.422	0.449	0.485	0.525
Myanmar	—	—	—	0.549
Thailand	0.673	0.705	0.739	0.768
Viet Nam	0.582	0.603	0.646	0.688

— = not available.

Lao PDR = Lao People's Democratic Republic.

Source: United Nations Development Programme. (Various issues). *Human Development Report*, New York).



**Table A2.6: Population Below the National Poverty Line
in Urban and Rural Areas
(%)**

Country	1993 (1994)		1997 (1996)		Latest Figure	
	Urban	Rural	Urban	Rural	Urban	Rural
Cambodia	—	—	21.1	40.1	25.2 ^b	40.0 ^b
Lao PDR	24.1 ^a	53.0	26.9	41.0	—	—
Myanmar	—	—	23.9	22.4	—	—
Thailand	10.2	13.1	—	—	1.5 ^c	17.2 ^c
Viet Nam	25.9	57.2	—	—	6.6 ^d	36.0 ^d

— = not available.

Lao PDR = Lao People's Democratic Republic.

^a 1994 figure.

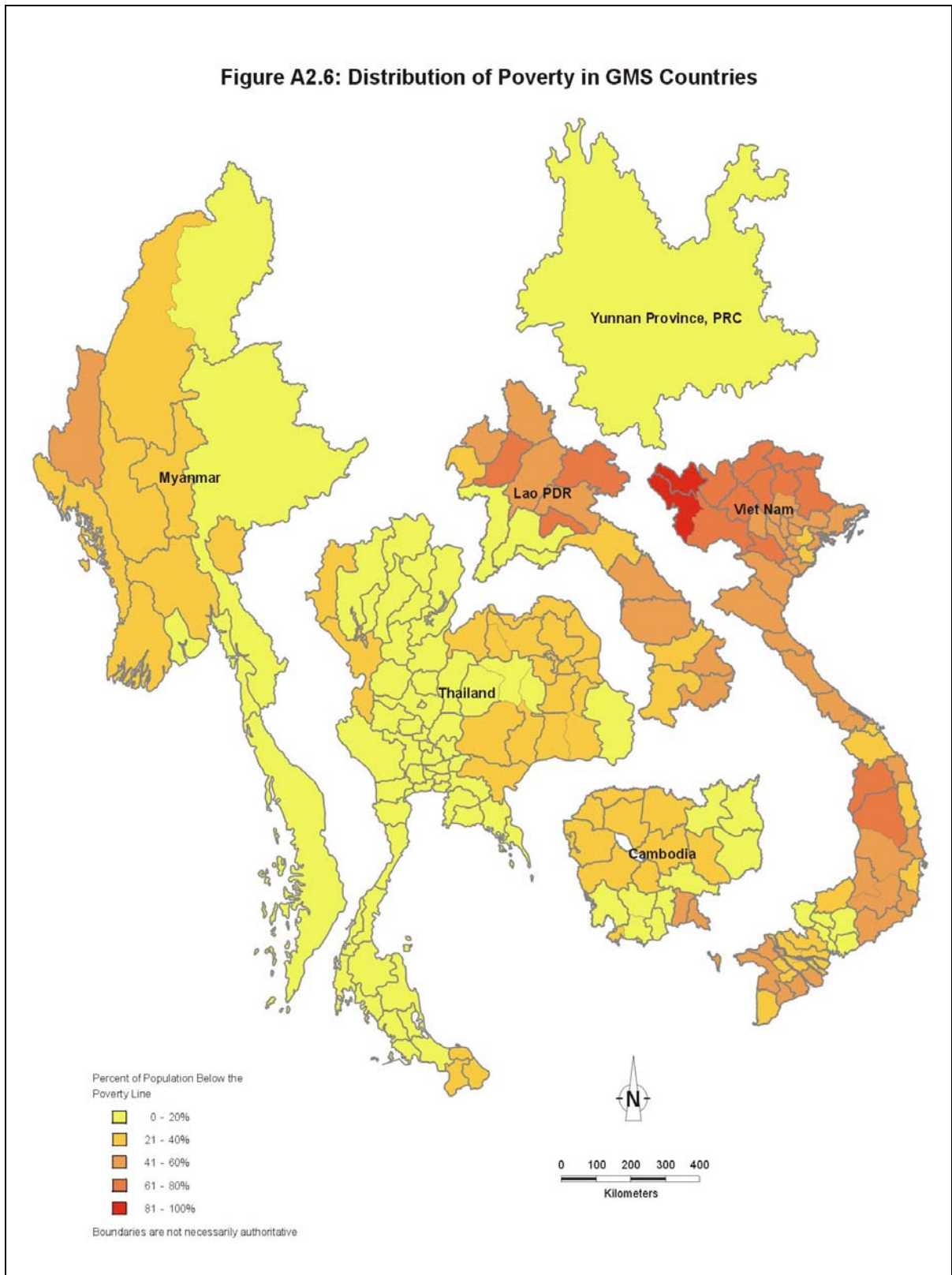
^b 1999 figure.

^c 2000 figure.

^d 2002 figure.

Source: Country yearbook and websites; and ASEAN in Figures 2003.

Figure A2.6: Distribution of Poverty in GMS Countries



GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic, PRC = People's Republic of China
Source: ADB, Greater Mekong Subregion Atlas of the Environment, 2004.

Table A2.7: Human Development Indicators

Country	Life Expectancy at Birth (Years) 2001	Adult Literacy Rate (%) 2001^a	Gross Enrolment Ratio (%) 2000–2001^b	Life Expectancy Index	Education Index
Cambodia	57.4	68.7	55.0	0.54	0.64
Lao PDR	53.9	65.6	57.0	0.48	0.63
Myanmar	57.0	85.0	47.0	0.53	0.72
Thailand	68.9	95.7	72.0 ^c	0.73	0.88
Viet Nam	68.6	92.7	64.0	0.73	0.83

Lao PDR = Lao People's Democratic Republic.

^a Age 15 and above.

^b Combined primary, secondary, and tertiary.

^c Preliminary United Nations Educational, Scientific and Cultural Organization. Institute for Statistics estimate, subject to further revision.

Source: United Nations Development Programme. *Human Development Report* New York (various issues).

Table A2.8: Openness Ratios^a
(% of GDP)

Country	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Cambodia	30.0	30.4	45.0	60.3	49.9	58.0	64.3	72.7	92.6	96.3	101.8
Lao PDR	29.8	44.6	46.0	43.2	47.5	44.0	62.5	51.3	45.3	43.2	40.9
Myanmar ^b	3.6	3.4	2.9	2.5	2.2	1.9	1.5	1.2	1.1	1.0	—
Thailand	61.3	61.7	64.2	70.9	65.1	74.2	80.0	81.2	101.2	102.1	98.1
Viet Nam	50.8	49.4	57.1	61.4	70.1	73.1	72.4	77.1	91.5	90.5	103.9
Yunnan Province, PRC	9.1	8.7	14.9	16.0	12.3	8.2	7.3	7.7	8.0	8.6	—
Average for GMS ^c	48.0	48.1	52.3	57.7	54.8	59.8	61.2	62.6	76.3	75.8	99.0 ^d

— = not available, GMS = Greater Mekong Subregion, GDP = gross domestic product, Lao PDR = Lao People's Democratic Republic, PRC = People's Republic of China.

^a Defined as the ratio of total trade to GDP at current market price. For most countries, exports and imports in US dollar terms were taken from the BOP statistics, and converted to local currency using the average nominal exchange rate.

^b Ratio of total trade in kyats (local currency) to GDP at current market price.

^c Weighted average based on PPP Gross National Income shares.

^d Weighted average does not include the figures for Myanmar and Yunnan Province, which are not yet available.

Sources: Asian Development Bank. *Key Indicators*. Manila; and National Bureau of Statistics of China

Table A2.9: Share of Intra-regional Trade to Total Trade^a
(%)

Country	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Cambodia	20.1	34.5	39.0	36.4	33.6	40.0	31.5	22.0	19.5	27.3	24.5
Lao PDR	63.3	48.9	55.8	57.3	61.1	66.8	65.7	70.6	65.5	68.6	67.8
Myanmar	23.4	23.6	22.8	24.1	18.1	17.5	18.5	27.6	28.9	34.0	35.6
Thailand	2.8	2.5	3.4	4.0	4.0	4.6	5.3	6.0	6.8	7.7	8.9
Viet Nam	4.7	8.0	9.9	10.4	7.9	8.9	10.9	11.9	14.9	14.6	13.9
Yunnan Province, PRC ^b	1.2	1.2	1.3	1.9	1.7	1.8	1.7	1.7	2.1	2.1	1.9
Average for GMS ^c	5.7	6.2	7.2	7.6	6.7	7.4	8.3	9.5	10.7	12.0	12.6

GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic. PPP = purchasing power parity, PRC = People's Republic of China.

^a Ratio of total trade with GMS countries (total trade with entire PRC was used) to total trade with the world.

^b Ratio of total trade of the entire PRC with the other GMS countries to total trade of the entire PRC with the world.

^c Weighted average based on PPP Gross National Income shares.

Source: International Monetary Fund. *Direction of Trade Statistics*. Washington DC.

Table A2.10: Cambodia: External Debt Indicators
(Stock Measures)

Item	1998	1999	2000	2001	2002
Total External Debt ^a (\$ billion)	2.11	2.27	2.26	2.25	2.25
Total Convertible Currency External debt ^b (\$ billion)	0.35	0.60	0.60	0.59	0.59
Total Convertible Currency External Debt/ GDP (%)	11.70	18.50	17.60	16.80	15.70
Total Convertible Currency External Debt/ Exports (%)	33.60	44.60	31.60	29.50	24.90
Total Convertible Currency External Debt/ Government Revenue (%)	140.00	173.40	163.50	139.80	—

— = not available, GDP = gross domestic product.

^a This amount excludes the debts owing to Russia and the United States.

^b Total convertible currency external debt is defined here to exclude debts owing to Russia and the United States.

**Table A2.11: Cambodia: Debt Service
(Flow Measures)**

Item	1998	1999	2000	2001	2002
Debt Service Payment (\$ million)	9.6	28.6	23.4	8.5	—
Of which					
Principal Repayments on Long-Term Debt (\$ million)	4.2	15.0	6.9	0.9	—
Interest on Long-Term Debt (\$ million)	3.7	11.9	11.9	4.5	—
Interest on Short-Term Debt (\$ million)	1.7	1.7	4.6	3.1	—
Reserve Coverage ^a	32.8	13.6	21.4	69.0	—
External Debt Service ^b (%)	17.9	14.2	10.1	3.8	3.4

^a Foreign exchange reserves divided by debt service payment.

^b Debt service payment as a percentage of exports of goods and services.

Table A.12: Cambodia: Average Terms of New Commitments

Item	1998	1999	2000	2001
Interest (% p.a.)	0.5	1.1	1.3	0.9
Maturity (years)	39.5	37.6	30.3	34.5
Grace Period (years)	10.0	9.7	8.2	9.9
Grant Element (%)	82.5	76.2	68.6	76.8

p.a. = per annum.

**Table A2.13: Lao PDR: External Debt Indicators
(Stock Measures)**

Item	1998	1999	2000	2001	2002
Total External Debt ^a (\$ billion)	3.5	2.8	2.7	2.8	3.0
Total Convertible Currency External Debt ^b (\$ billion)	1.7	1.1	1.1	1.2	1.2
Total Convertible Currency External Debt/GDP (%)	101.3	73.4	64.4	68.2	70.0
Total Convertible Currency External Debt/Exports (%)	361.7	241.0	214.4	249.5	240.2
Total Convertible Currency External Debt/Government Revenue (%)	1,491.0	846.2	509.3	542.1	—

— = not available

^a This amount excludes the debt owing to Russia.^b Total convertible currency external debt is defined here to exclude debt owing to Russia.**Table A2.14: Lao PDR—Debt Service
(Flow Measures)**

Item	1998	1999	2000	2001	2002
Debt Service Payment (\$ million)	24.2	28.6	32.6	34.0	36.3
of which					
Principal Repayments on Long-Term Debt (\$ million)	16.4	19.5	22.9	24.1	25.6
Interest on Long-Term Debt (\$ million)	7.6	9.0	9.4	9.8	10.7
Interest on Short-Term Debt (\$ million)	0.2	0.1	0.3	0.1	—
Reserve Coverage ^a	4.4	3.5	4.3	3.8	5.1
External Debt Service ^b (%)	4.6	6.3	5.7	7.2	8.0

— = not available.

^a Foreign exchange reserves divided by debt service payment.^b Debt service payment as a percentage of exports of goods and services.

Table A2.15: Lao PDR: Average Terms of New Commitments

Item	1998	1999	2000	2001
Interest (% p.a.)	1.7	1.2	1.4	1.2
Maturity (years)	39.4	33.8	31.6	32.9
Grace Period (years)	9.9	8.7	8.1	8.8
Grant Element (%)	71.7	72.8	69.9	72.4

Lao PDR = Lao People's Democratic Republic, p.a. = per annum.

**Table A2.16: Viet Nam: External Debt Indicators
(Stock Measures)**

Item	1998	1999	2000	2001	2002
Total External Debt (\$ billion)	20.5	20.3	11.9	13.0	14.1
Total External Debt/GDP (%)	76.5	72.1	38.7	40.9	41.6
Total External Debt/ Exports (%)	219.0	176.5	82.2	86.7	84.4

GDP = gross domestic product.

**Table A2.17: Viet Nam: Debt Service
(Flow Measures)**

Item	1998	1999	2000	2001	2002
Debt Service Payment (\$ million)	910.0	1,380.0	1,279.0	1,171.0	1,108.0
of which					
Principal Repayments on Long-Term Debt (\$ million)	587.0	1,021.0	932.0	789.0	824.0
Interest on Long-Term Debt (\$ million)	387.0	326.0	296.0	354.0	284.0
Interest on Short-Term Debt (\$ million)	36.0	33.0	51.0	28.0	—
Reserve Coverage ^a	2.2	2.4	2.7	3.1	—
External Debt Service ^b (%)	13.9	12.8	10.5	10.6	10.2

— = not available.

^a Foreign exchange reserves divided by debt service payment.^b Debt service payment as a percentage of exports of goods and services.**Table A2.18: Viet Nam: Average Terms of New Commitments**

Item	1998	1999	2000	2001
Interest (% p.a.)	2.4	2.3	1.4	1.0
Maturity (years)	29.1	34.0	36.1	38.8
Grace Period (years)	8.2	9.1	9.6	9.8
Grant Element (%)	59.5	63.9	73.2	77.3

p.a. = per annum.