

Financing

Implementing the Stop TB Strategy at the scale required to achieve the 2015 targets for global TB control (see also **CHAPTER 1** and **CHAPTER 2**) requires accurate budgeting of the financial resources required, mobilization of the necessary funding and spending of available funds such that TB control outcomes are improved. Analysis of budgets and funding for TB control was introduced into the annual WHO report on global TB control in 2002, and expenditures have been reported on since 2004.

This chapter provides WHO's latest analysis of financing of TB control. As with the previous two chapters, emphasis is placed on 22 high-burden countries (HBCs), but analyses for all countries reporting financial data are also included. The chapter is structured in eight major sections. The first section summarizes the data that were reported to WHO in 2008. The next six sections present the budgets of national TB control programmes (NTPs) from 2002 to 2009 and the sources of funding and funding gaps for these budgets; the total costs of TB control (including the cost of resources that are used within the general health system as well as the costs included in NTP budgets), also for 2002–2009; comparisons of funding requirements reported by countries with estimated funding requirements that were contained in the Global Plan to Stop TB, for the period 2006–2009; per patient costs and budgets in 2009; a comparison of expenditures with available funding and with changes in the number of cases that have been detected and treated; and the contribution of the Global Fund to financing for TB control. The eighth section discusses why funding gaps persist and the possible consequences of the global financial crisis for TB control.

Further details are also provided in **ANNEX 1** and **ANNEX 3**.

3.1 Data reported to WHO in 2008

WHO received financial data from 158 out of 212 (75%) countries and territories in 2008, similar to the number that reported data in 2007.¹ Complete budget data for 2009 were provided by 102 countries (**FIGURE 3.1**), 98 countries provided complete budget data for 2008 and 92 countries provided complete expenditure data for 2007. Overall, countries reporting financial data accounted for 98% of the global burden of TB. The countries that provided financial reports accounted for 97% or more of the regional burden of TB in five WHO regions, with a lower figure of 83% for the European Region. This is the most complete reporting of financial data to WHO since financial monitoring began in 2002.

Complete budget data for 2009 were reported by all HBCs except South Africa (**FIGURE 3.1**). Of particular note is Thailand, which provided complete budget data for the

first time in five years following a comprehensive planning and budgeting effort that was facilitated by use of the WHO planning and budgeting tool (**BOX 3.1**).² Expenditure data for 2007 were reported by all HBCs except South Africa and Uganda (data not shown).

Considerable clarification and verification of financial data by WHO are still required, but the quality of the data when first submitted continues to improve. In 2008, this was notable for the African Region, the Region of the Americas and the South-East Asia Region. Improvements were probably facilitated by related work on planning and budgeting undertaken with 35 African countries in 2007 and with nine countries from the South-East Asia Region in 2008, as well as close collaboration with countries in the Region of the Americas during regional meetings.

3.2 NTP budgets, available funding and funding gaps

3.2.1 High-burden countries

NTP budgets in the 22 HBCs amount to US\$ 2.5 billion in 2009, almost three times their level in 2002 (**TABLE 3.1**; **FIGURE 3.2**; **FIGURE 3.3**). The Russian Federation has the highest budget (US\$ 1.2 billion), followed by South Africa (US\$ 352 million), China (US\$ 225 million), India (US\$ 100 million) and Brazil (US\$ 64 million). These five countries account for 80% of the NTP budgets reported for 2009 by the 22 HBCs. The eight HBCs in the African Region (excluding South Africa) had a combined budget of US\$ 225 million in 2009, only 10% of the total for all 22 HBCs.

Much of the increase in NTP budgets since 2007 is explained by an increase in the budget for MDR-TB (**FIGURE 3.2**), almost all of which (US\$ 372 million, or 88% of a total of US\$ 422 million) is accounted for by the Russian Federation and South Africa (**ANNEX 1**). Nonetheless, NTP budgets increased in most HBCs between 2007 and 2009, and NTP budgets have increased substantially in all HBCs except Viet Nam since 2002 (**FIGURE 3.4**; **ANNEX 1**).

In 2002–2006, activities to support the DOTS component of the Stop TB Strategy accounted for the largest proportion of NTP budgets (**FIGURE 3.2**). However, budgets for collaborative TB/HIV activities, ACSM, PPM and MDR-TB are much more in evidence in 2009 compared with previous years (**FIGURE 3.2**; **FIGURE 3.5**). This suggests that many HBCs are

¹ *Global tuberculosis control: surveillance, planning and financing. WHO report 2008*. Geneva, World Health Organization, 2008 (WHO/HTM/TB/2008.393).

² See http://www.who.int/tb/dots/planning_budgeting_tool/en/index.html

FIGURE 3.1
Reporting of financial data, NTP budgets for 2009

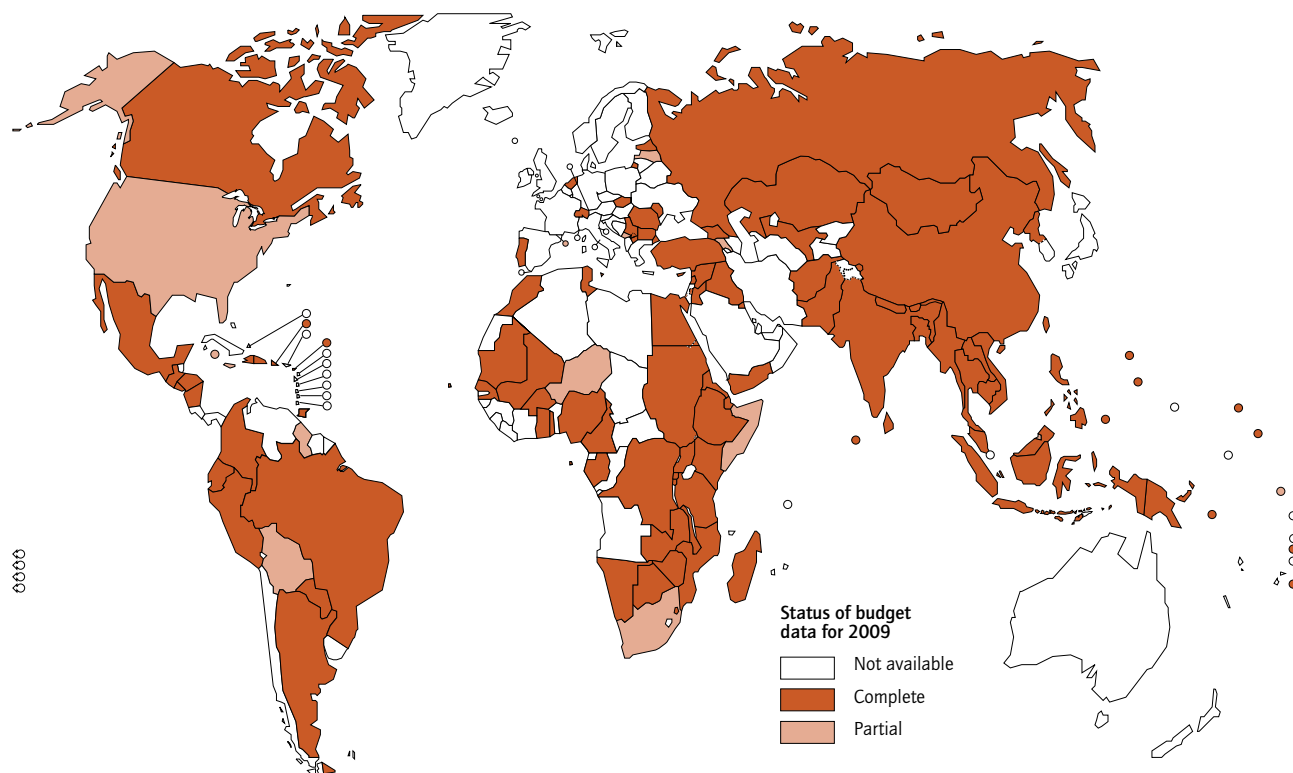


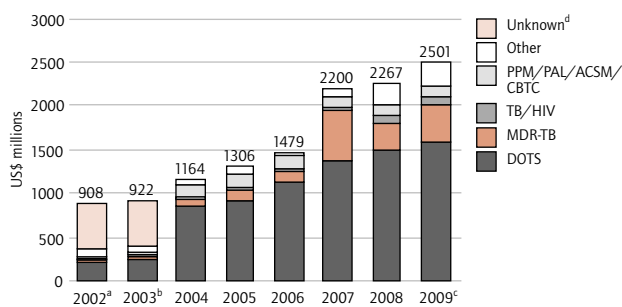
TABLE 3.1
NTP budgets, available funding, cost of utilization of general health-care services and total TB control costs (US\$ millions), high-burden countries, 2009

	NTP BUDGET	AVAILABLE FUNDING				FUNDING GAP	COST OF UTILIZATION OF GENERAL HEALTH-CARE SERVICES	TOTAL TB CONTROL COSTS ^a
		GOVERNMENT (EXCLUDING LOANS)	LOANS	GRANTS (EXCLUDING GLOBAL FUND)	GLOBAL FUND			
1 India	100	9.2	37	9.8	14	30	38	138
2 China	225	163	11	0.7	41	9.8	0	225
3 Indonesia	80	34	0	13	17	16	4.8	85
4 Nigeria	44	7.3	0	4.4	13	19	11	55
5 South Africa	352	—	—	—	—	—	251	603
6 Bangladesh	15	4.9	1.1	0	9.2	0.1	5.8	21
7 Ethiopia	26	1.1	0	1.0	6.2	18	8.5	35
8 Pakistan	54	10	0	12	6.4	25	3.8	58
9 Philippines	23	7.9	0	0	10	4.4	11	34
10 DR Congo	53	1.6	0	3.3	11	37	12	66
11 Russian Federation	1 249	1 014	0	1.4	6.9	226	24	1 273
12 Viet Nam	13	5.3	0	4.3	3.9	0	13	27
13 Kenya	37	6.6	1.0	12	2.5	15	5.1	42
14 Brazil	64	50	0.6	1.5	0	11	28	92
15 UR Tanzania	25	7.1	0	4.7	5.4	7.4	4.2	29
16 Uganda	17	1.3	0	0.1	4.8	11	1.2	18
17 Zimbabwe	17	0.6	0	4.1	3.4	9.4	4.1	22
18 Thailand	50	46	0	0	0.8	3.2	1.0	51
19 Mozambique	25	6.4	0	7.9	4.4	6.0	5.9	31
20 Myanmar	11	1.2	0	5.3	0	4.3	1.9	13
21 Cambodia	11	1.1	0	1.3	4.6	3.7	2.5	13
22 Afghanistan	10	0.2	0	5.4	4.1	0.3	1.2	11
High-burden countries	2 501	1 379	50	93	169	457	438	2 939

— Indicates not available.

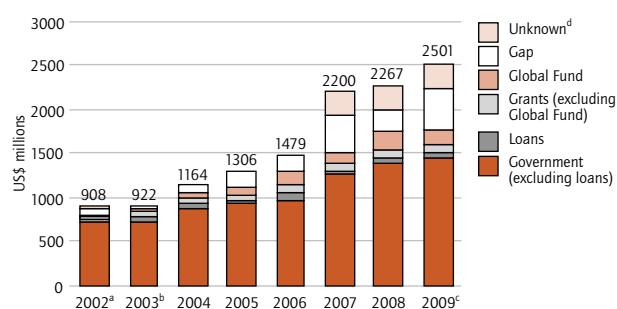
^a Calculated as NTP budget plus the cost of utilization of general health-care services.

FIGURE 3.2
NTP budgets by line item, high-burden countries, 2002–2009



- ^a Estimates assume budget 2002 equal to expenditure 2002 (Ethiopia), budget 2003 (Afghanistan, Bangladesh, Mozambique and Uganda) or expenditure 2003 (Russian Federation and Zimbabwe).
- ^b Estimates assume budget 2003 equal to expenditure 2003 (Russian Federation and Zimbabwe).
- ^c Estimates assume budget 2009 equal to budget 2008 for South Africa.
- ^d "Unknown" applies to Afghanistan 2002–2004, Russian Federation 2002–2003 and Mozambique 2002–2003. In these years, a breakdown by line item was not available.

FIGURE 3.3
NTP budgets by source of funding, high-burden countries, 2002–2009



- ^a Estimates assume budget 2002 equal to expenditure 2002 (Ethiopia), budget 2003 (Afghanistan, Bangladesh, Mozambique and Uganda) or expenditure 2003 (Russian Federation and Zimbabwe).
- ^b Estimates assume budget 2003 equal to expenditure 2003 (Russian Federation and Zimbabwe).
- ^c Estimates assume budget 2009 equal to budget 2008 for South Africa.
- ^d "Unknown" applies to Afghanistan 2004, DR Congo 2002, Nigeria 2002, South Africa 2007–2009 and UR Tanzania 2007. In these years, a breakdown by funding source was not available or only partially available.

expanding the range of interventions to control TB, in line with the Stop TB Strategy.

The large budget increases described above have been accompanied by big improvements in available funding (FIGURE 3.3; FIGURE 3.4). Funding for NTP budgets in the 22 HBCs reached US\$ 1.8 billion in 2009, up from US\$ 0.8 billion in 2002. Governments of HBCs have provided most of the available funding since 2002; this funding amounts to US\$ 1.4 billion in 2009 (57% of the total budget, and 85% of the available funding) (TABLE 3.1).¹ Financing from the Global Fund has become more important since 2004, reaching US\$ 169 million (7% of the total budget and 10% of the available funding) in 2009. The Global Fund accounts for 65% of total grant funding for HBCs in 2009. Grants provided to HBCs from sources other than the Global Fund have not changed much since 2002, and in 2009 account for 4% of the total budget (and 5% of available funding).

Despite these increases in funding, funding gaps that total US\$ 457 million (18% of the total budget) have been reported for 2009; this could be as high as US\$ 0.7 billion if the funding gap in South Africa could be accurately quantified (TABLE 3.1).² All HBCs except Viet Nam reported funding gaps in 2009. In India, Indonesia and Pakistan, these gaps may be reduced or closed by funding from grants from the Global Fund approved in round 8 or via the so-called "rolling continuation channel" of funding (ANNEX 1).

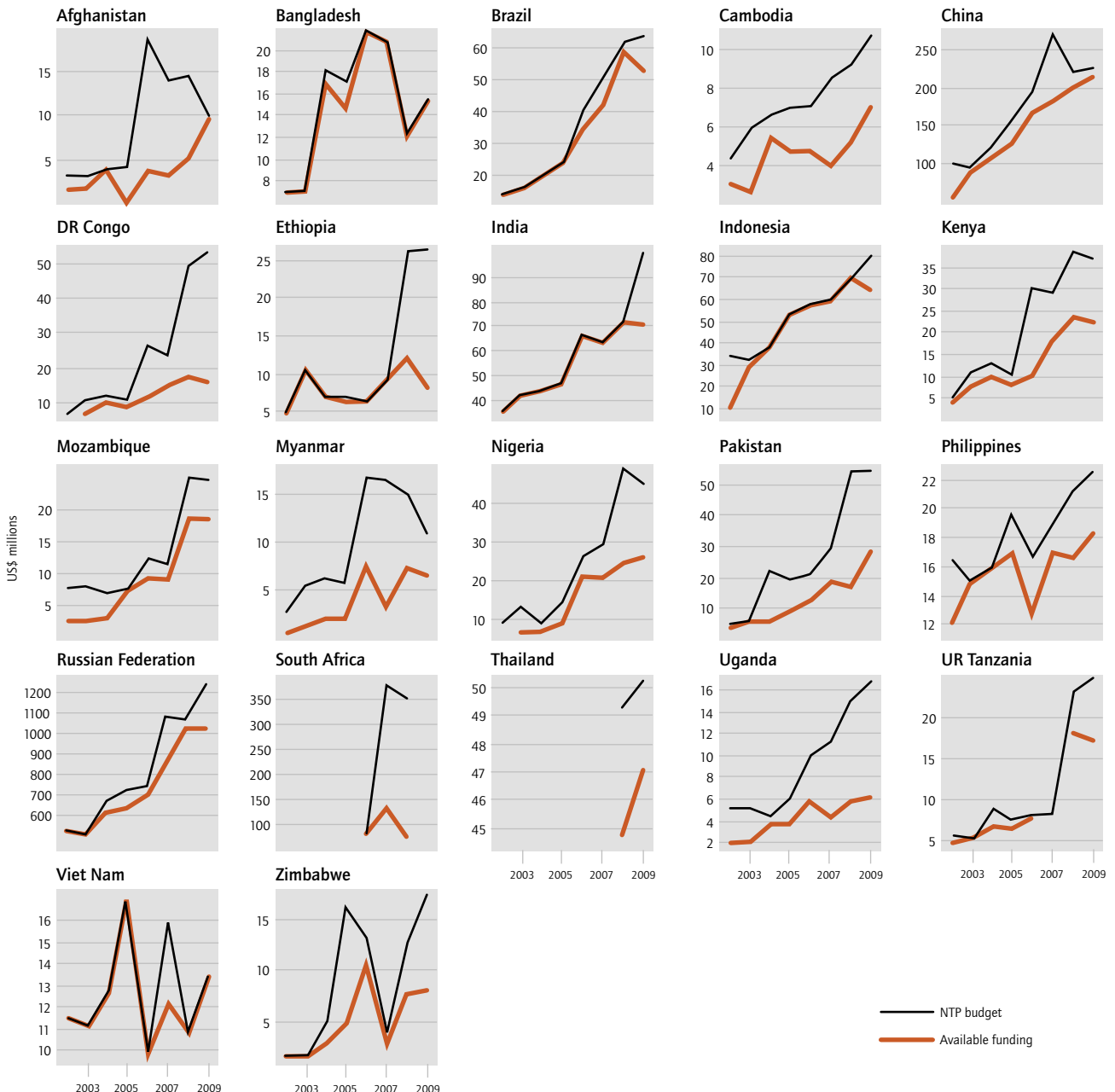
Most of the additional domestic funding since 2002 (government funding including loans) has come from three countries only: Brazil, China and the Russian Federation (an extra US\$ 717 million in 2009 compared with 2002). These three countries plus Thailand will fund 77% or more of their NTP budgets from domestic sources in 2009 (TABLE 3.1). In other HBCs, increases in funding have come mainly from the Global Fund. In 2009, grants from the Global Fund will finance around one-third or more of the NTP budget in seven countries: Bangladesh, the Philippines, Cambodia, Afghanistan, Nigeria, Uganda and Viet Nam (in that order). In addition, grants from sources besides the Global Fund will finance one third or more of the NTP budget in Afghanistan, Mozambique, Myanmar, Kenya and Viet Nam (TABLE 3.1).

In absolute terms, the largest funding gaps are those reported by the Russian Federation, the Democratic Republic of the Congo, India, Pakistan, Nigeria and Ethiopia (in that order), which together account for 78% of reported funding gaps. The Russian Federation alone accounts for 50% of the total funding gaps reported by HBCs. Proportionally, the largest gaps are (in order) in the Democratic Republic of the Congo, Ethiopia, Uganda, Zimbabwe, Pakistan, Nigeria, Kenya, Myanmar and Cambodia; funding gaps in these countries represent more than one-third of the required budget (TABLE 3.1). Only three HBCs reported no funding gap

¹ Figures would probably be higher if complete information on funding from provincial governments in South Africa were available.

² The 11% of NTP budgets for which funding is unknown, which is accounted for by South Africa, is likely to be a mixture of funding from provincial governments and a funding gap (ANNEX 1).

FIGURE 3.4
NTP budgets and available funding, high-burden countries, 2002–2009



or a negligible funding gap: Afghanistan, Bangladesh and Viet Nam.

3.2.2 All countries

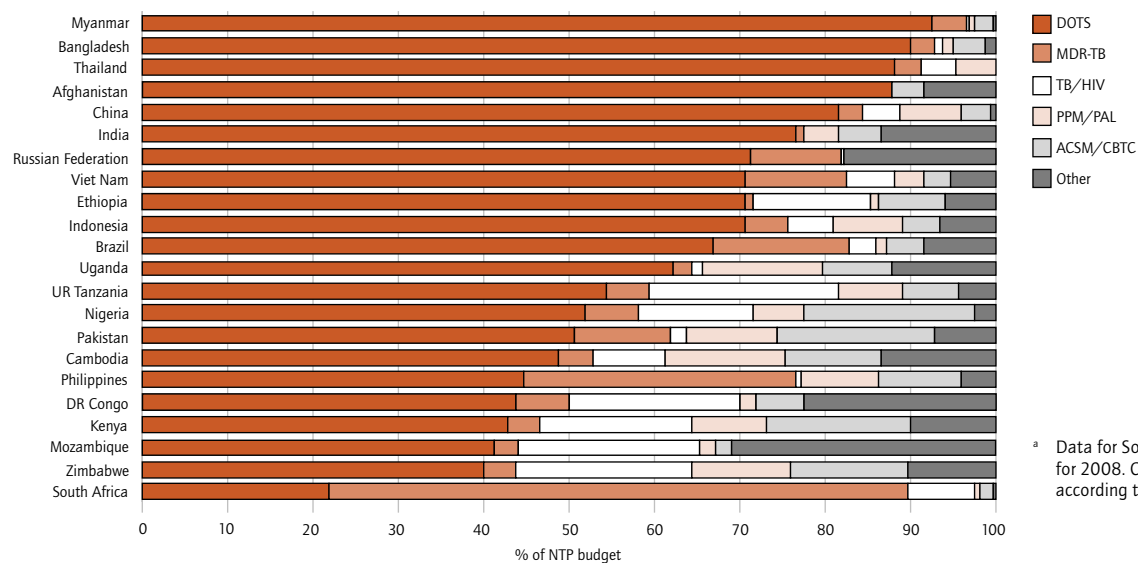
WHO began collecting financial data from all countries (in addition to the 22 HBCs) in 2003 and reported these data for the first time in 2004. Total NTP budgets in 2009, by WHO region and source of funding, are shown for the 103 countries for which data are available (22 HBCs and 81 other countries) in **FIGURE 3.6**.¹ Globally, these countries account for 93% of incident TB cases; at regional level, they account

for almost all TB cases in the African, Eastern Mediterranean, South-East Asia and Western Pacific regions (89–99.6%, depending on the region), for 85% of the regional total in the Region of the Americas (up from 74% in 2008), and for 66% of the regional total in the European Region. NTP budgets amount to US\$ 3.6 billion in 2009, up from US\$ 2.6 billion in 2008 (for countries with 91% of global cases) and US\$ 1.6 billion in 2007 (also for countries that accounted for 91% of TB cases globally). The funding gaps reported by these 103 countries total US\$ 0.9 billion, of which US\$ 0.5 billion is in the European Region. This is somewhat surprising given the relative wealth of the European Region. Overall, the reported funding gap is more than double the US\$ 385 million reported for 2008.

Budgetary funding gaps as a proportion of the total bud-

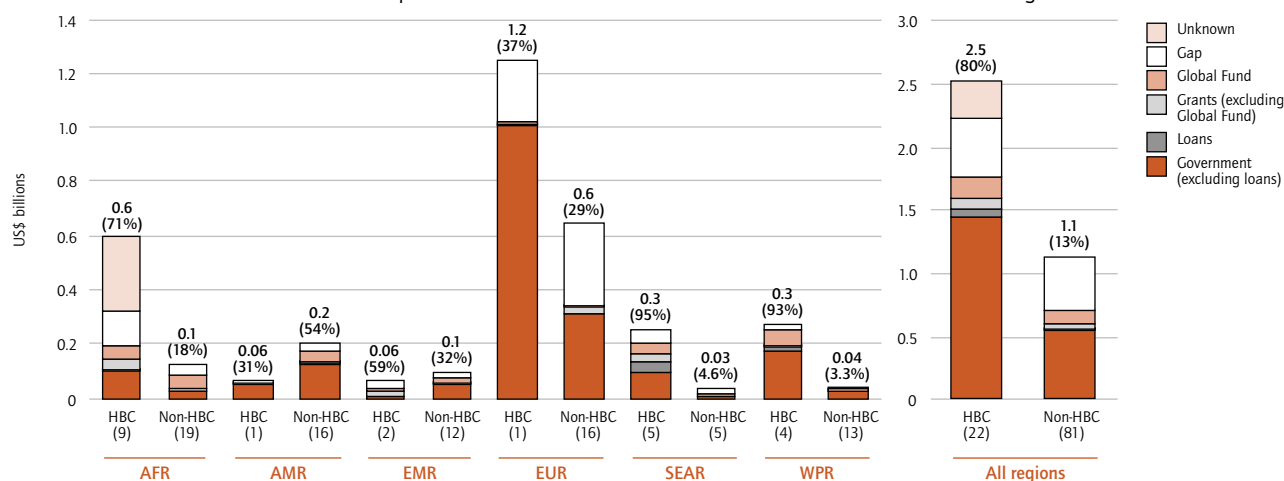
¹ The total of 103 countries is one more than the total of 102 countries mentioned in section 3.1, since South Africa is included in **FIGURE 3.6** with the assumption that the budget for 2009 would be the same as the budget reported for 2008.

FIGURE 3.5
NTP budgets by line item, high-burden countries,^a 2009



^a Data for South Africa are for 2008. Countries ranked according to DOTS budget.

FIGURE 3.6
Regional distribution of NTP budgets by source of funding, 22 high-burden countries and 81 non high-burden countries, 2009. Numbers in parentheses above bars show the percentage of all estimated incident cases of TB in the region that are accounted for by the countries included in the bar. Numbers in parentheses on the x-axis show the number of countries contributing to each bar.



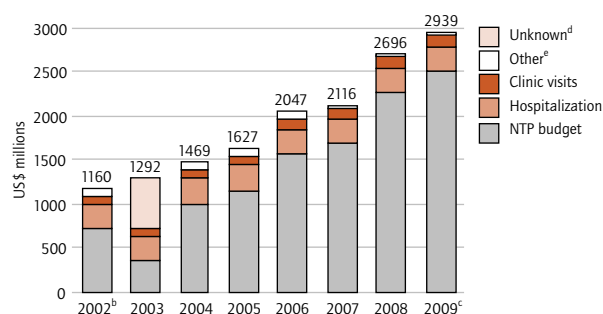
get were higher for non high-burden countries compared with HBCs in the African, European and South-East Asia regions. Funding gaps as a proportion of the total budget were similar for Brazil and non-HBCs in the Region of the Americas. Funding gaps were lower for non high-burden countries relative to HBCs in the Eastern Mediterranean and Western Pacific regions. Overall, NTP budgets per incident TB case were higher for HBCs compared with non-HBCs in the African Region and the European Region, and much lower for HBCs compared with non-HBCs in the Region of the Americas and the Eastern Mediterranean, South-East Asia and Western Pacific regions.

3.3 Total costs of TB control

3.3.1 High-burden countries

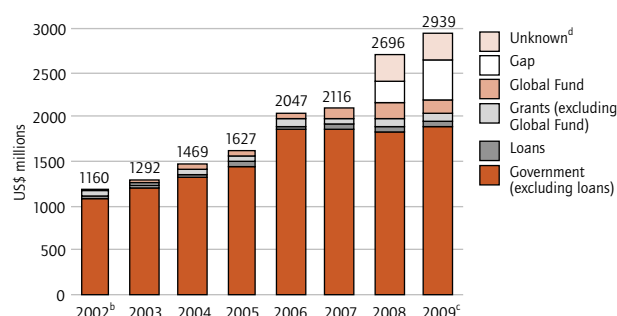
NTP budgets include only part of the resources needed to control TB. Specifically, they do not include the costs associated with using general health-service staff resources and infrastructure for TB control, both of which are used when TB patients are hospitalized or visit outpatient facilities during treatment. For the 22 HBCs combined, the total cost of TB control will reach almost US\$ 2.9 billion in 2009 if funding gaps can be closed, almost three times higher than the US\$ 1.2 billion actual expenditures estimated for 2002 (FIGURES 3.7–3.10; TABLE 3.1). The total of US\$ 2.9 billion is mostly for DOTS (US\$ 2 billion, or 69%). The other major components are MDR-TB (US\$ 0.4 billion, or 14%; 88% of this total is accounted for by the Russian Federation and South Africa), TB/HIV (US\$ 90 million, or 3%) and ACSM

FIGURE 3.7
Total TB control costs by line item, high-burden countries,^a 2002–2009



- ^a Total TB control costs for 2002–2007 are based on expenditure data, whereas those for 2008–2009 are based on budget data.
^b Estimates assume costs 2002 equal to costs 2003 for Afghanistan, Bangladesh, Mozambique, Nigeria, Uganda and Zimbabwe.
^c Estimates assume costs 2009 equal to costs 2008 for South Africa.
^d “Unknown” applies to Russian Federation 2003.
^e “Other” includes costs for fluorography in the Russian Federation that are not reflected in NTP budget or NTP expenditure data.

FIGURE 3.8
Total TB control costs by source of funding, high-burden countries,^a 2002–2009



- ^a Total TB control costs for 2002–2007 are based on expenditure data, whereas those for 2008–2009 are based on budget data.
^b Estimates assume costs 2002 equal to costs 2003 for Afghanistan, Bangladesh, Mozambique, Nigeria, Uganda and Zimbabwe.
^c Estimates assume costs 2009 equal to costs 2008 for South Africa.
^d “Unknown” applies to South Africa 2008–2009.

(US\$ 70 million, or 2%). The remaining 12% includes PPM, surveys of the prevalence of TB disease, community TB care and a variety of miscellaneous activities.

Total costs have increased year-on-year since 2002 across all HBCs, a pattern that is repeated in most individual countries (FIGURE 3.9). Exceptions are Bangladesh and Viet Nam; however, the apparently low expenditures in these countries in 2007 probably reflect only partial reporting of expenditures. The steady climb in the total resources available for TB control in Brazil, China and India since 2002 is impressive. Increases in projected costs during 2002–2009 arise because of the large increases in NTP budgets (described above) and, to a much lesser extent, because of the higher costs of clinic visits and hospitalization that are associated with treating more patients (FIGURE 3.7).

As in previous years, the Russian Federation and South Africa rank first and second in terms of total costs. Together, they account for US\$ 1.9 billion (64%) of the total of US\$ 2.9 billion (FIGURE 3.10; TABLE 3.1). China (US\$ 225 million), India (US\$ 138 million), Brazil (US\$ 92 million) and Indonesia (US\$ 85 million) rank third to sixth. These six countries account for 82% of the total cost of TB control in the 22 HBCs in 2009. In South Africa, there are two major reasons for the high cost of TB control estimated for 2009. One is the large costs associated with maintaining around 8000 TB beds in district hospitals and specialized TB hospitals at a unit price per bed-day of around US\$ 100 and US\$ 40, respectively. The second is a large budget for the diagnosis and treatment of MDR-TB (ANNEX 2; SECTION 3.2). The largest components of the budget for MDR-TB are for renovating and constructing infrastructure in line with a national policy of hospitalizing all patients with MDR-TB for at least six months; improving infection control in MDR-TB and XDR-TB units as well as in general district hospitals; and providing second-line anti-TB drugs for the enrolment of around 5000 patients on treatment. High costs in the Russian Federation

in 2009 are associated with continued staffing and maintenance of an extensive network of TB hospitals and sanatoria; a large budget for second-line anti-TB drugs to treat MDR-TB patients (US\$ 133 million, with an estimated total of about 4000 cases to be enrolled on treatment in 2009); and continued use of fluorography for mass population screening.

Funding for the general health-service staff and infrastructure used by TB patients during clinic visits and hospitalization is assumed to be provided by governments (ANNEX 2). This assumption, together with the implicit assumption that health systems have sufficient capacity to support the treatment of a growing numbers of patients in 2009,¹ means that the resources available for TB control are estimated to have increased from US\$ 1.2 billion in 2002 to US\$ 2.2 billion in 2009 (FIGURE 3.8). For all HBCs, the estimated gap between the funding already available and the total cost of TB control is between US\$ 0.5 and US\$ 0.7 billion in 2009.²

Of the US\$ 2.2 billion available in the 22 HBCs in 2009, 88% is from HBC governments, 8% (US\$169 million) is from the Global Fund and 4% (US\$ 94 million) is from grants from sources other than the Global Fund. The distribution of funding sources is different when the Russian Federation and South Africa are excluded: the government contribution to available funding drops to 70%, the Global Fund contribution increases to 19%, and grants from sources besides the Global Fund account for 11%.

As in previous years, there is considerable variation in the distribution of funding sources among countries (FIGURE 3.11; TABLE 3.1). For example, Afghanistan is highly dependent on grant financing and four other countries (Ban-

¹ Nonetheless, the capacity of health systems to manage an increasing number of TB patients warrants further analysis, particularly in countries where the number of patients will need to increase substantially to achieve the MDG and related Stop TB Partnership targets for TB control.

² The range reflects uncertainty about the level of funding from provincial governments in South Africa.

FIGURE 3.9
Total TB control costs, high-burden countries, 2002–2009

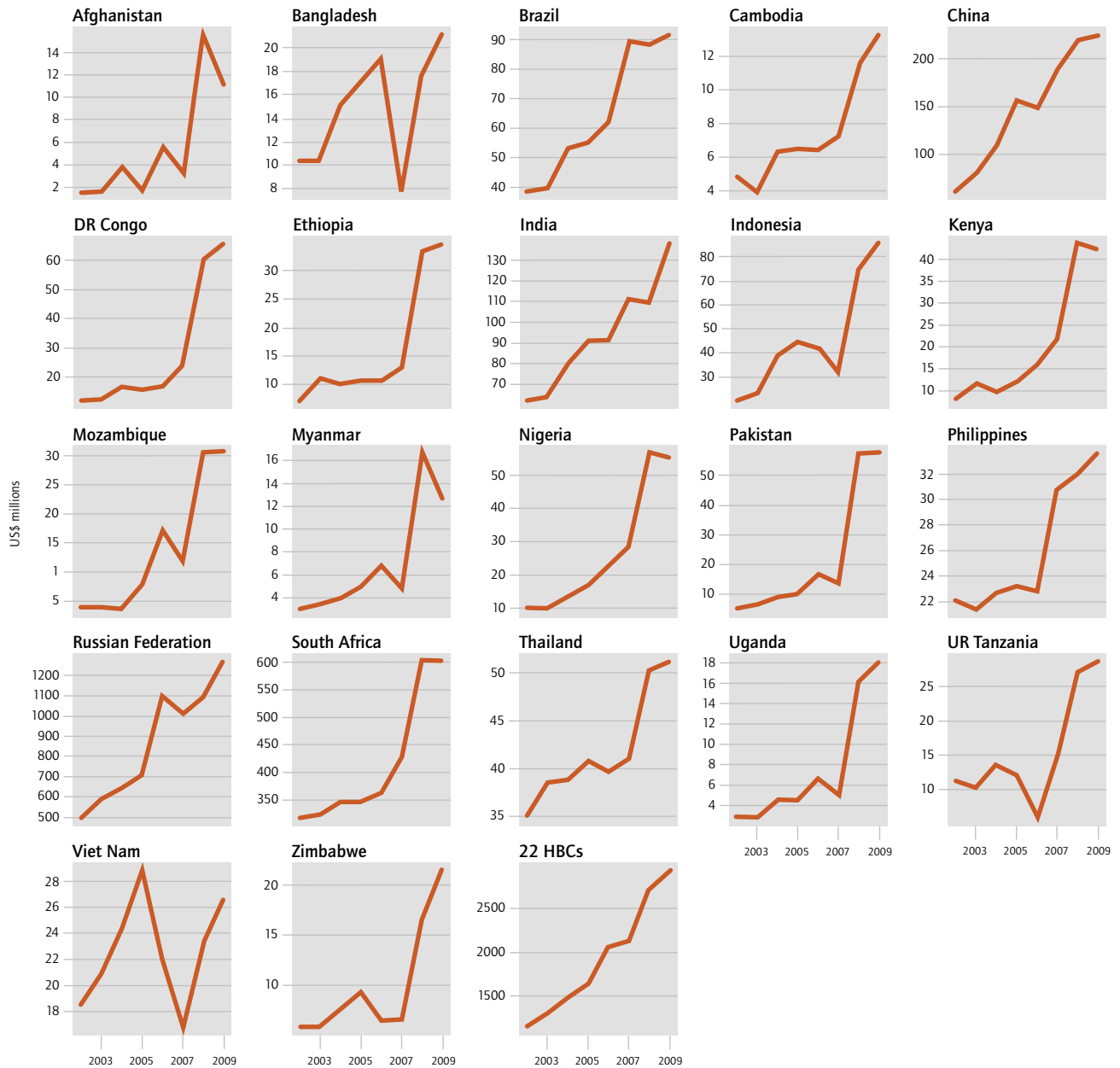


FIGURE 3.10
Total TB control costs by country, high-burden countries, 2002–2009

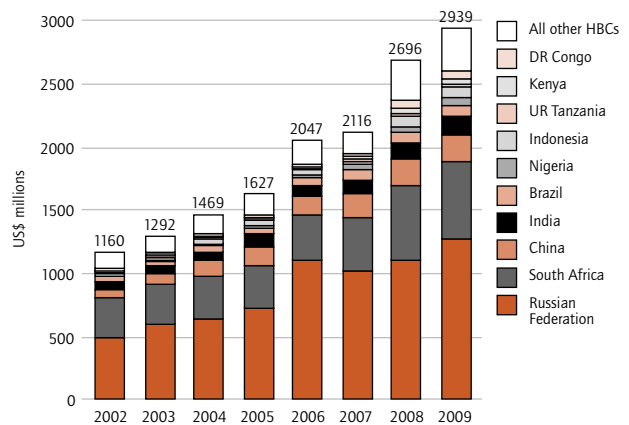
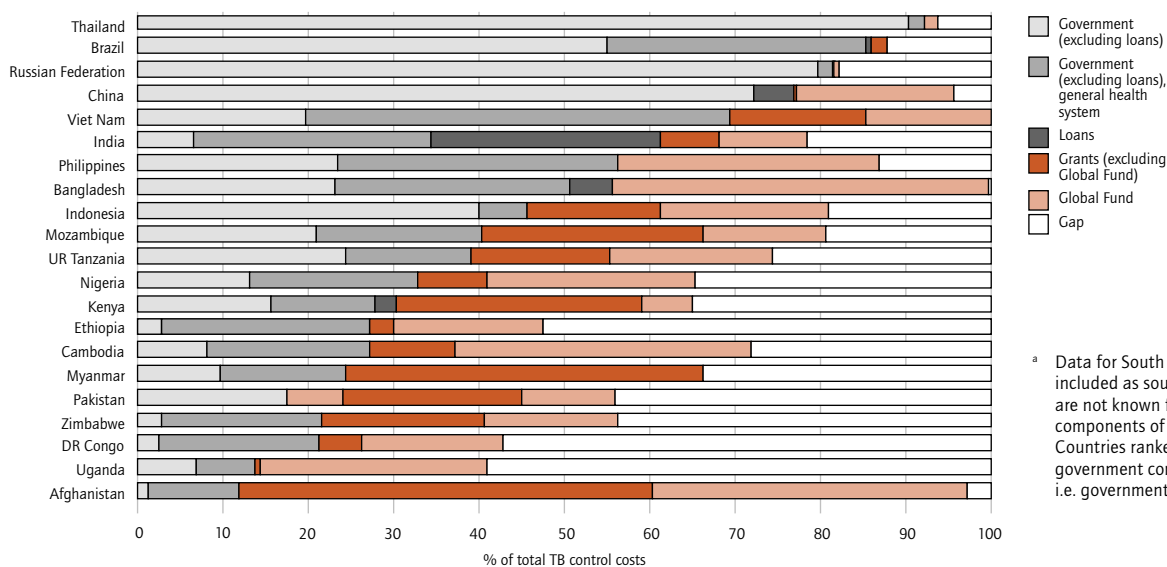


FIGURE 3.11
Total TB control costs by source of funding, 21 high-burden countries,^a 2009



^a Data for South Africa not included as sources of funding are not known for most components of the budget. Countries ranked according to government contribution, i.e. government plus loans.

ladesh, Cambodia, Mozambique and Myanmar) rely on grants to cover at least 40% of the total resources needed for TB control. In nine HBCs, grant funding accounts for more than 50% of the currently available funding in 2009 (Afghanistan, Cambodia, the Democratic Republic of the Congo, Kenya, Mozambique, Myanmar, Pakistan, Uganda, and Zimbabwe). In contrast, grant financing contributes less than 2% of the total funding required in 2009 in Brazil, the Russian Federation and Thailand.

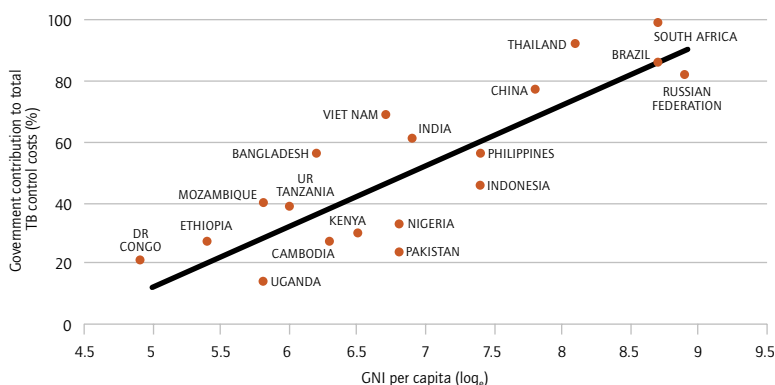
The share of the total costs financed by HBC governments is closely related to average income levels (FIGURE 3.12), although there appears to be scope to increase the government contribution in several countries (for example, Indonesia, Pakistan and the Russian Federation).

3.3.2 All countries

Total costs for 2006–2009 can be estimated for 111 countries that collectively account for 93% of TB cases globally (FIGURE 3.13).¹ The total costs of TB control will increase from US\$ 2.6 billion in 2006 to US\$ 4.3 billion in 2009 (if funding gaps in 2009 can be closed). DOTS implementation accounts for the largest single share of these costs, but the share for MDR-TB and a range of other interventions is increasing. The share of total costs accounted for by collaborative TB/HIV activities and ACSM remains small.

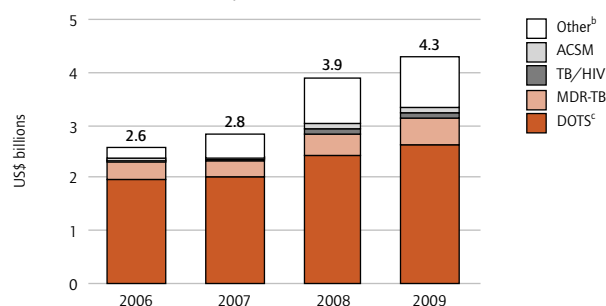
For 89 countries outside the 22 HBCs for which data are available, trends in total costs by region and for all regions combined are shown in FIGURE 3.14. Costs are generally

FIGURE 3.12
Government contribution (including loans) to total TB control costs by gross national income (GNI) per capita, 19 high-burden countries,^a 2009



^a Data on GNI per capita not available for Afghanistan, Myanmar and Zimbabwe.

FIGURE 3.13
Total TB control costs by line item, 22 high-burden countries and 89 other countries,^a 2006–2009



^a These 111 countries account for 93% of the global total of 9.27 million incident cases of TB estimated in 2007.

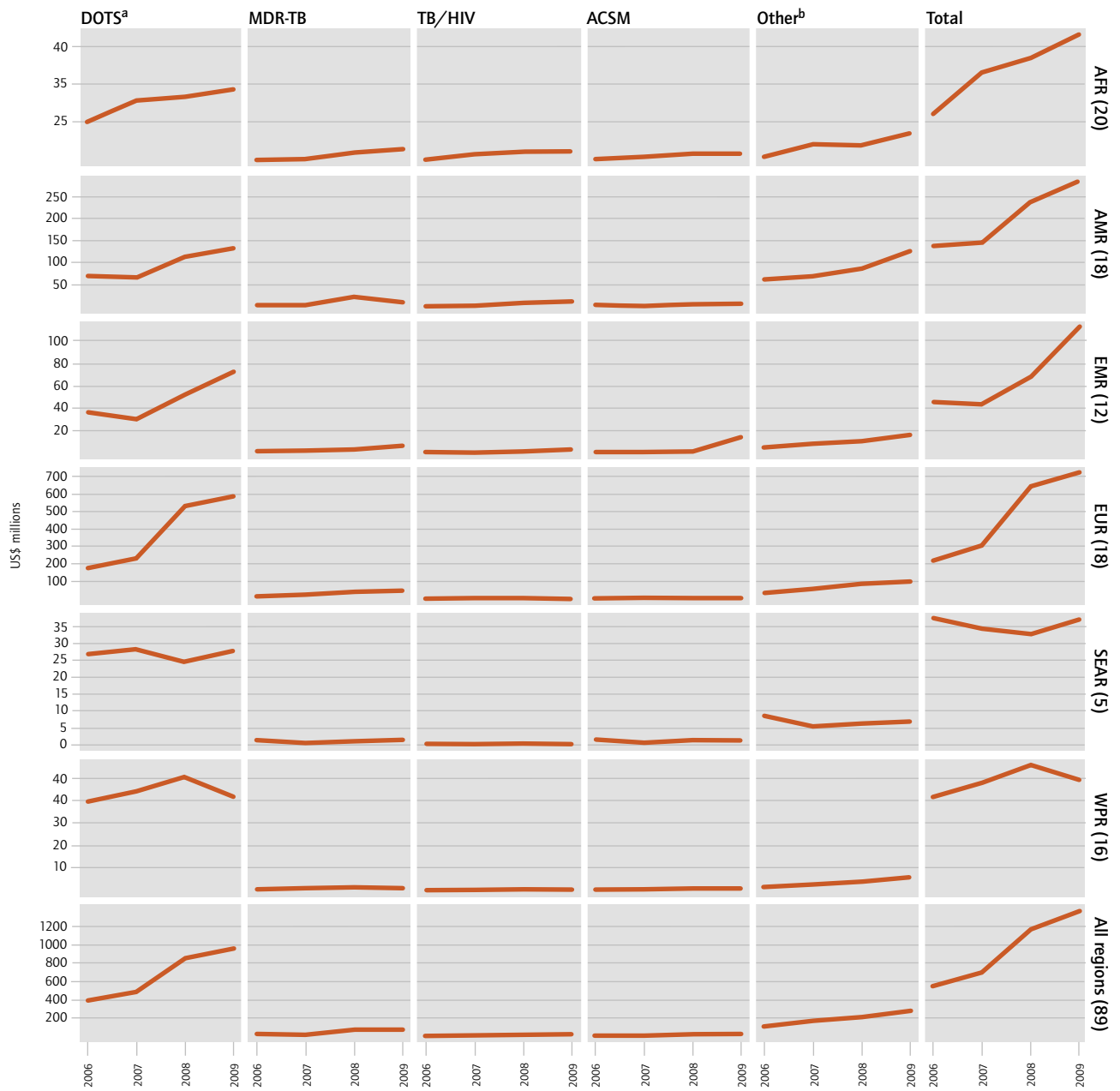
^b "Other" includes PPM, PAL, CBTC, operational research, surveys and other.

^c DOTS includes the cost of clinic visits and hospitalization.

¹ These 111 countries reported data for at least two of the years 2006–2009. For countries that did not report data in all four years, costs were estimated using data for the two or three years for which data were reported.

FIGURE 3.14

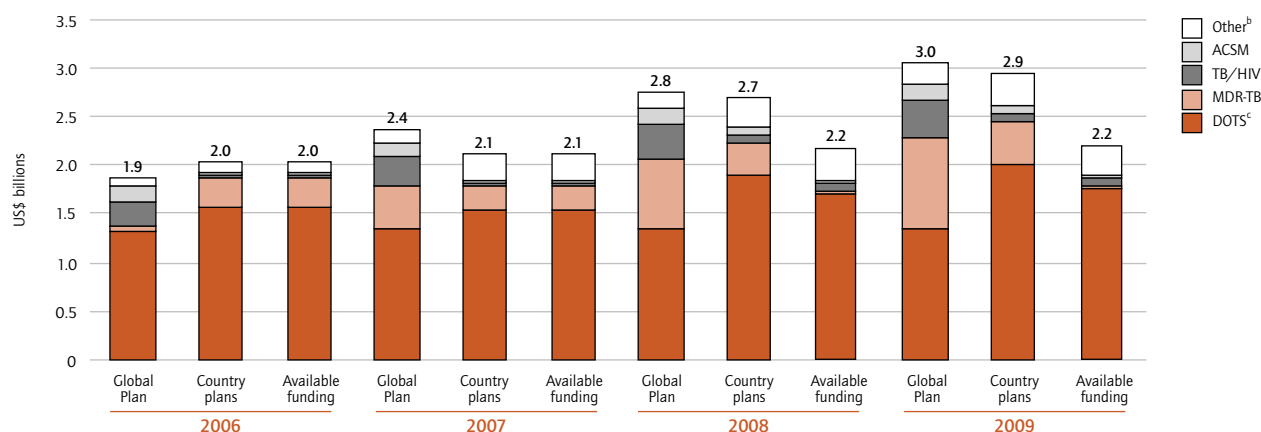
Total TB control costs by region, 89 non high-burden countries, 2006–2009. Numbers in parentheses show the number of countries included in the analysis in each region.



^a DOTS includes the cost of clinic visits and hospitalization.

^b "Other" includes PPM, PAL, CBTC, operational research, surveys and other.

FIGURE 3.15
Total TB control costs: the Global Plan compared with country plans^a and available funding, high-burden countries, 2006–2009



^a Costs of country plans are based on expenditures (2006–2007) and budgets (2008–2009).

^b "Other" includes PPM, PAL, CBTC, operational research, surveys and other.

^c DOTS includes the cost of clinic visits and hospitalization.

increasing (the exception being countries in the South-East Asia Region where the trend is relatively flat) and are mostly accounted for by DOTS implementation.

3.4 Comparisons with the Global Plan

The Global Plan sets out what needs to be done between 2006 and 2015 to achieve the 2015 targets for TB control that have been set within the context of the Millennium Development Goals (MDGs) and by the Stop TB Partnership (see also [CHAPTER 1](#) and [CHAPTER 2](#)). To assess the extent to which planning and financing for TB control at country level are aligned with the Global Plan, the financial resources estimated to be required for TB control in the Global Plan can be compared with the financial data reported by countries.

3.4.1 High-burden countries

The cost of TB control and available funding reported by countries during the period 2006–2009 are compared with the funding requirements included in the Global Plan in [FIGURE 3.15](#).¹ In 2006, actual costs (based on expenditure data) were slightly above those estimated to be required in the Global Plan, although there were shortfalls for collaborative TB/HIV activities and ACSM. From 2007 to 2009, the total funding requirements set out in country plans almost match those included in the Global Plan (for example, US\$ 2.9 billion and US\$ 3.0 billion respectively in 2009). However, available funding falls short of the amounts included in country plans and the Global Plan. The gap was US\$ 0.3 billion in 2007 and US\$ 0.8 billion in 2009.

For MDR-TB and collaborative TB/HIV activities, the funding estimated to be required in the Global Plan is much higher than the funding estimated to be required by countries. For MDR-TB, the shortfall is mainly accounted for by China and India. In contrast, the funding estimated to be required for DOTS by countries is higher than the funding estimated to be required in the Global Plan.

These aggregated comparisons conceal the fact that five HBCs have planned costs consistent with those detailed in

the Global Plan in 2009: Brazil, Cambodia, the Democratic Republic of the Congo, Thailand and the United Republic of Tanzania. In addition, there are five countries in which the discrepancy is due to the mid-2007 revision of the MDR-TB component of the Global Plan to include much more ambitious targets.² With the exception of MDR-TB, country plans are consistent with the Global Plan in China, Indonesia, the Philippines, the Russian Federation and Viet Nam ([ANNEX 1](#)).

For collaborative TB/HIV activities, the shortfall is mainly in Cambodia, the Democratic Republic of the Congo, Ethiopia, Kenya, India, Mozambique, Myanmar, Nigeria, Uganda and Zimbabwe. In these countries, the shortfall is exaggerated because the funding requirements for several collaborative TB/HIV activities (including the most costly ones such as ART) are part of the budgets of national AIDS control programmes, rather than NTPs.³ For ACSM, there are five countries with ACSM budgets comparable to or larger than those indicated in the Global Plan: Brazil, Cambodia, Kenya, Pakistan and the Philippines.

Country-by-country comparisons with the Global Plan are presented in [ANNEX 1](#).

3.4.2 All countries

The financial data submitted to WHO allow total TB control costs for 2009 to be estimated for 94 of the 171 countries that were included in the Global Plan (22 HBCs and 72 other countries).⁴ These 94 countries account for 93% of all incident cases of TB arising each year.⁵

¹ See [ANNEX 2](#) for an explanation of how costs for individual countries were derived from the Global Plan.

² *The Global MDR-TB & XDR-TB response plan, 2007–2008*. Geneva, World Health Organization, 2007 (WHO/HTM/TB/2007.387).

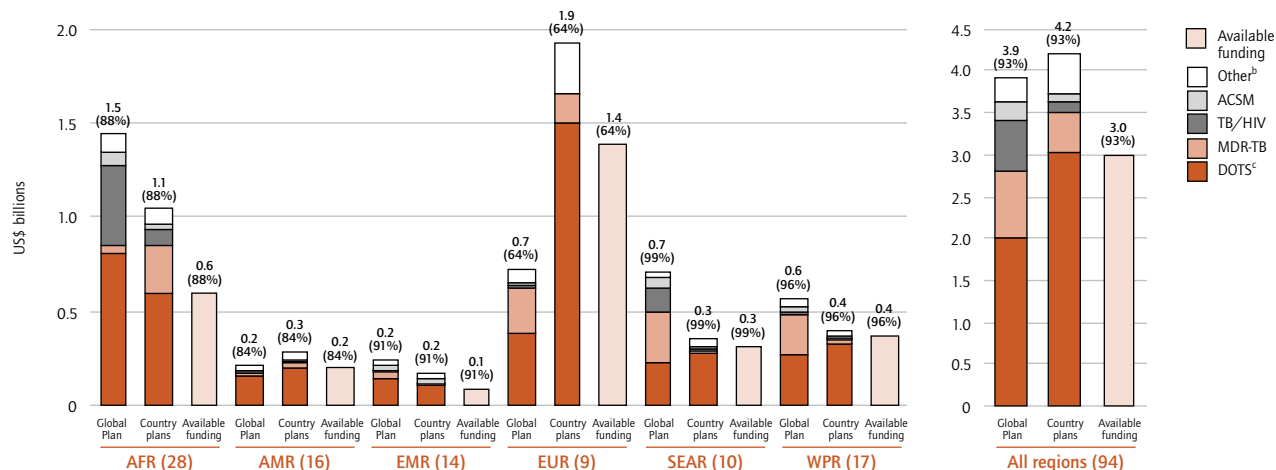
³ In most of the countries that reported data, the costs of HIV testing, co-trimoxazole preventive therapy and antiretroviral treatment were part of the budgets of national AIDS control programmes rather than the budgets of NTPs.

⁴ Of the 103 countries included in [FIGURE 3.6](#), nine were not considered in the Global Plan cost estimates.

⁵ All of the 171 countries included in the Global Plan accounted for 98% of TB cases globally in 2004.

■ FIGURE 3.16

Total TB control costs in 22 high-burden countries and 72^a other countries: the Global Plan compared with country plans and available funding, 2009. Numbers in parentheses above bars show the percentage of all estimated incident cases of TB in the region that are accounted for by the countries included in the bar. Numbers in parentheses on the x-axis show the number of countries contributing to each bar.



^a Canada, Cyprus, Malta, the Netherlands, Portugal, Serbia, Slovakia, the former Yugoslav Republic of Macedonia and Switzerland are excluded because they were not included in the Global Plan.
^b "Other" includes PPM, PAL, CBTC, operational research, surveys and other.
^c DOTS includes the cost of clinic visits and hospitalization.

A regional comparison of costs planned by countries with the costs included in the Global Plan is shown for these 94 countries in **FIGURE 3.16**. Overall, country plans indicate planned costs of US\$ 4.2 billion in 2009 (up from US\$ 3.1 billion in 2008 and US\$ 2.3 billion in 2007), compared with US\$ 3.9 billion in the Global Plan, and available funding of US\$ 3.0 billion. Of the available funding of US\$ 3.0 billion, 87% is funding from governments (including loans), 9% is funding from Global Fund grants and 4% is funding from donors other than the Global Fund.

The total of US\$ 4.2 billion required for full implementation of country plans in these countries in 2009 is mostly for DOTS (US\$ 3.0 billion, or 72%). The other major components are MDR-TB (US\$ 0.5 billion, or 12%; 76% of the total for MDR-TB is accounted for by the Russian Federation and South Africa), collaborative TB/HIV activities (US\$ 120 million, or 3%) and ACSM (US\$ 100 million, or 2%). The remaining 11% includes PPM, surveys of the prevalence of TB disease, community TB care and a variety of miscellaneous activities.

The apparent similarity between the Global Plan and country plans when data are aggregated for all countries is distorted by the comparatively high cost of country plans in the European Region. As **FIGURE 3.16** makes clear, the funding estimated to be required for MDR-TB in country plans falls far short of Global Plan estimates in the South-East Asia and Western Pacific regions. This is consistent with the relatively small number of cases of MDR-TB that countries in these regions (notably China and India) expect to diagnose and treat in 2009 (as documented in **CHAPTER 2**). Country plans also indicate lower planned spending on collaborative TB/HIV activities compared with the Global Plan in the African Region, which has 79% of the estimated global total of HIV-positive TB cases. This is consistent with data on the

current level of implementation of collaborative TB/HIV activities (**CHAPTER 2**), although the difference (as noted above) is exaggerated because the planned activities and associated funding of national AIDS control programmes are not included in the data reported by NTPs.¹ It is only in the Eastern Mediterranean Region and the Region of the Americas that country plans appear to be consistent with the Global Plan.

Excluding the European Region, the funding gaps reported by countries amount to US\$ 0.6 billion in 2009 (US\$2.3 billion required compared with US\$ 1.7 billion available). Compared with the needs set out in the Global Plan, the gap is US\$ 1.6 billion (US\$ 3.2 billion required according to the Global Plan compared with available funding of US\$ 1.6 billion). In the European Region, the funding available in 2009 exceeds the funding estimated to be required in the Global Plan. One explanation is the reductions anticipated in the Global Plan in the use of hospitalization during treatment, which are not happening in practice.

These differences between the funding requirements set out in country plans and the Global Plan suggest that country planning, budgeting and financing lag behind the Global Plan in three major areas: DOTS and collaborative TB/HIV activities in Africa, and diagnosis and treatment of MDR-TB in the European, South-East Asia and Western Pacific regions (and within these regions, in the Russian Federation, India and China in particular).

¹ This may also explain the higher costs of collaborative TB/HIV activities in the Global Plan compared with country plans in the South-East Asia Region. For example, the only TB/HIV-related costs included in the NTP budget in India are those for HIV testing of TB patients, which is a relatively inexpensive intervention. In India, it is not known to what extent other activities are budgeted for and funded by the national AIDS control programme.

WHO has developed a planning and budgeting tool that is designed to help countries to align their plans and budgets with the Stop TB Strategy and the targets set out in the Global Plan, as well as to produce more accurate country-specific estimates of the financial resources required to achieve these targets.¹ The development and use of this tool is described in **BOX 3.1**.

3.5 Budgets and costs per patient

Budgets and costs per patient in HBCs are shown in **TABLE 3.2**. The budget for first-line anti-TB drugs per patient is lowest in Cambodia (US\$ 18) and highest in Brazil (US\$ 121), Thailand (US\$ 161) and the Russian Federation (US\$ 308). In most countries, the budget is in the range US\$ 20–40, with a median of US\$ 33.

The budget per patient for DOTS treatment also varies. Only two countries (India and Myanmar) have budgets below US\$ 100 per patient. A total of four countries have budgets in the range US\$ 100–200 per patient, four are in the range US\$ 200–300 and seven are in the range US\$ 300–600.² The four countries with a budget per patient exceeding US\$ 600 are Brazil, Mozambique, the Russian Federation and Thailand. Of these, all except Mozambique are middle-income countries where budgets are expected to be higher, although the budget of US\$ 9292 per patient in the Russian Federation is exceptionally high compared with all other HBCs. As noted in **SECTION 3.2**, these high costs can be explained by extensive use of hospitalization during treatment.

In 2009, the total cost per patient treated in a DOTS programme is estimated at under US\$ 100 in only one country: Myanmar. It is in the range US\$ 100–300 in seven countries, and US\$ 300–500 in nine countries (up from three in 2007 and 2008). Four countries have much higher costs: Brazil, Mozambique, the Russian Federation and Thailand. As already noted, three of these countries are middle-income countries with generally higher prices for the inputs needed for TB control, while the Russian Federation also has large budgets for MDR-TB treatment as well as maintenance of hospital infrastructure. The relatively high cost for Mozambique relative to other African countries is mainly due to comprehensive budgeting for collaborative TB/HIV activities.

Among the low-income countries, there is no obvious relationship between the cost per patient treated and GNI per capita. For example, in India the cost per patient treated is low relative to income levels, while in the Democratic Republic of the Congo and Mozambique this cost is relatively high compared with GNI per capita (data not shown). Overall, budgets and costs per patient are generally increasing, with a median increase of 350% per patient in the NTP budget per patient and a median increase in the total cost per patient of 240% (although the median increase for first-line drugs was only 20%).

¹ See http://www.who.int/tb/dots/planning_budgeting_tool/en/index.html

² Figures were not calculated for South Africa because the financial data available for 2009 were not complete. See also **FIGURE 3.1**.

BOX 3.1

Planning and budgeting for TB control: the WHO TB planning and budgeting tool

The WHO TB planning and budgeting tool is designed to help countries to develop comprehensive plans and budgets for TB control within the framework of the Stop TB Strategy and the Global Plan to Stop TB, and to use these as the basis for resource mobilization from national governments and donors. The tool was developed with support from USAID's TB Control Assistance Program, and can be downloaded (together with accompanying documentation) from the Stop TB Department's web site http://www.who.int/tb/dots/planning_budgeting_tool/en/.

Major advantages of using the tool include: (i) it allows plans and budgets to be set out comprehensively in one place in a standardized format; (ii) it offers a ready-made list of inputs and activities to consider when planning and budgeting for each component of the Stop TB Strategy; (iii) it includes epidemiological and demographic projections as well as information about the targets set out in the Global Plan; (iv) it provides a solid foundation for resource mobilization from national and local governments as well as donors such as the Global Fund; (v) it is easy to revise or update plans and budgets because it is set out in Excel; and (vi) it automatically produces summary analyses in the form of figures and tables. Overall, these benefits should help to improve the quality of planning and budgeting.

A draft version of the tool was developed in April–May 2006. Following extensive field-testing in countries in the African and South-East Asia regions and the Region of the Americas, a final version with was produced by January 2007. The tool was translated into English, French, Spanish and Russian.

Promotion and practical application of the tool started in 2007. Four planning and budgeting workshops were conducted: two in the African Region for a total of 34 countries; one in the South-East Asia region for nine countries; and one in the Region of the Americas for 11 countries. Two training workshops have also been conducted: one for seven countries in Latin America and one for three countries in the Western Pacific Region. During these workshops, feedback about the tool was very positive. Other examples of how the tool has been disseminated include presentations at workshops for the development of Global Fund proposals, presentations at international meetings and regional NTP manager meetings; a training workshops for technical partners and staff from WHO regional and country offices, and inclusion of the tool in an international course on management and budgeting organized annually by the International Union Against Tuberculosis and Lung Disease.

To date, 27 countries are known to have used the tool to budget their national strategic plans for TB control. The Democratic Republic of the Congo, Ethiopia, Kenya, Mozambique, Myanmar, Thailand and Zambia are examples of countries that have developed particularly comprehensive and detailed plans and budgets using the tool. Most of the countries that have attended one of the workshops have used the tool to budget at least some of the components of the Stop TB Strategy. Others have used it to develop the budget component of a Global Fund proposal. A recent example is Indonesia, whose proposal was rated Category 1 (recommended for funding with no or minor clarifications).

In future, the tool could provide the basis for National Strategy Applications (NSAs) to the Global Fund.

■ **TABLE 3.2**

Total TB control costs and NTP budgets per patient for DOTS treatment, high-burden countries, 2009

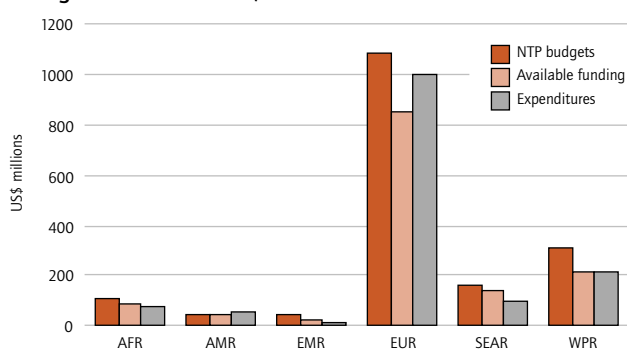
	2009 (US\$)			CHANGES SINCE 2002, (FACTOR ^a)		
	FIRST-LINE DRUGS BUDGET	NTP BUDGET (EXCLUDING MDR-TB)	TOTAL COST (EXCLUDING MDR-TB)	FIRST-LINE DRUGS BUDGET	NTP BUDGET (EXCLUDING MDR-TB)	TOTAL COST (EXCLUDING MDR-TB)
1 India	22	80	111	2.2	3.5	1.9
2 China	28	226	226	1.7	1.7	1.7
3 Indonesia	48	288	307	1.5	2.5	2.3
4 Nigeria	25	351	442	0.5	2.7	2.0
5 South Africa	—	—	—	—	—	—
6 Bangladesh	24	104	144	1.2	1.3	1.2
7 Ethiopia	24	166	220	0.9	3.8	3.4
8 Pakistan	58	205	221	1.0	4.5	2.4
9 Philippines	34	112	193	0.7	0.9	1.0
10 DR Congo	27	359	447	0.8	3.9	2.6
11 Russian Federation	308	9292	9491	4.7	2.0	2.5
12 Viet Nam	50	120	254	1.5	1.4	1.3
13 Kenya	21	331	378	0.6	6.4	3.9
14 Brazil	121	812	1234	2.7	4.9	2.6
15 UR Tanzania	28	407	480	0.7	5.0	2.6
16 Uganda	74	327	351	1.4	7.0	5.2
17 Zimbabwe	68	396	491	2.3	12	7.0
18 Thailand	161	810	827	—	—	—
19 Mozambique	28	679	847	1.3	9.8	6.2
20 Myanmar	33	73	87	1.9	3.5	1.6
21 Cambodia	18	264	329	0.4	2.0	1.7
22 Afghanistan	37	329	368	0.5	1.1	3.2
High-burden countries (median value)	33	327	351	1.2	3.5	2.4

— Indicates not available.

^a Calculated as 2009 value divided by 2002 value.

■ **FIGURE 3.17**

NTP budgets, available funding and expenditures by region, 19 high-burden countries,^a 2007



^a AFR excludes South Africa and Uganda. SEAR excludes Thailand.

3.6 Expenditures compared with available funding and changes in the number of patients treated

Countries that have received large increases in funding face two important challenges: to spend the extra money, and to translate extra spending into improved rates of case detection and treatment success. To date, WHO has been able to conduct analyses for the HBCs only.

The ability to mobilize resources can be assessed by comparing available funding with budgets, and the ability to use financial resources can be assessed by comparing expenditures with available funding (TABLE 3.3; FIGURE 3.17; FIGURE 3.18). The latest year for which data are available for all three indicators is 2007. In 2007, Bangladesh, Ethiopia, India and Indonesia were the most successful of the HBCs in mobilizing funds for their budgets, while Afghanistan, Cambodia, Myanmar and Uganda were least successful (TABLE 3.3). Most HBCs reported spending a high proportion of their available funding, and in some cases the funds that were raised and spent exceeded the original budget (TABLE 3.3).¹ Three countries had expenditures that appeared to be particularly low relative to available funding: Bangladesh, Mozambique and Viet Nam. Review of the financial data reported by these

¹ This explains why the value of expenditures in 2007 as a percentage of the available funding prospectively reported in 2007 (final column of TABLE 3.3) exceeds 100.

TABLE 3.3
NTP budgets, available funding and expenditures (US\$ millions), high-burden countries, 2007

	NTP BUDGET	AVAILABLE FUNDING ^a	EXPEN-DITURES ^b	AVAILABLE FUNDING AS % OF NTP BUDGET	EXPEN-DITURES AS % OF AVAILABLE FUNDING ^c
1 India	63	63	67	100	106
2 China	272	181	188	66	104
3 Indonesia	59	59	27	100	46
4 Nigeria	29	20	21	69	105
5 South Africa	378	—	—	—	—
6 Bangladesh	21	21	2.2	100	11
7 Ethiopia	8.9	8.9	8.2	100	92
8 Pakistan	29	18	10	62	55
9 Philippines	19	17	20	89	117
10 DR Congo	24	15	15	62	105
11 Russian Federation	1 078	846	991	78	117
12 Viet Nam	16	12	4.3	77	35
13 Kenya	29	18	18	63	97
14 Brazil	51	42	59	82	140
15 UR Tanzania	8.2	—	11	—	—
16 Uganda	11	4.2	—	38	—
17 Zimbabwe	3.9	2.6	2.2	68	83
18 Thailand	—	—	40	—	—
19 Mozambique	11	8.9	3.5	78	40
20 Myanmar	16	3.1	3.1	19	100
21 Cambodia	8.5	4.0	5.0	47	124
22 Afghanistan	14	3.2	2.2	22	71
High-burden countries	2 151	1 347	1 498	70^d	86^d

— Indicates not available.

^a Based on budget data, reported prospectively in 2007.

^b Based on actual expenditures, reported in 2008.

^c Figures can be above 100% when additional funds were mobilized after reporting of data about budgets and sources of funding in 2007.

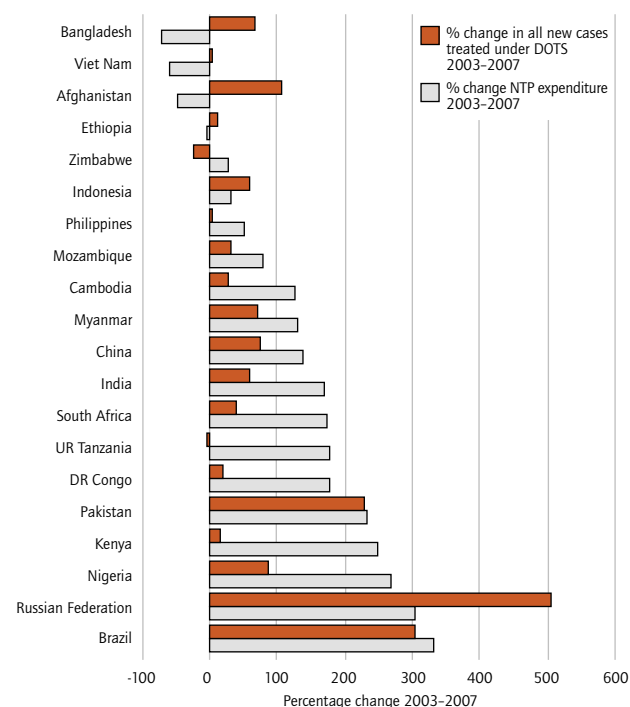
^d Mean values.

countries suggests that this reflects underreporting of expenditure data, at least in Bangladesh and Viet Nam (see also **FIGURE 3.9**).

When country data for the HBCs are aggregated by region (**FIGURE 3.17**), the ability to mobilize resources was best in the South-East Asia Region and the Region of the Americas, and worst in the Eastern Mediterranean Region. The ability to spend available resources was best in the Western Pacific Region and the Region of the Americas. It appeared to be worst in the South-East Asia, but this finding is affected by apparent underreporting of expenditures in Bangladesh and a temporary cessation of funding from a Global Fund grant in Indonesia.

The ability to translate spending into an increased number of detected and treated patients can be assessed by comparing changes in expenditures 2003–2007 with changes in the number of TB patients treated in 2003–2007 (**FIGURE 3.18**; 2007 is the most recent year for which both case notification and expenditure data are available). Of the 20 HBCs for which data were available, all except one (the United Republic of Tanzania) of the 16 countries that increased spending between 2003 and 2007 also increased the number of new cases that were detected and treated in DOTS programmes

FIGURE 3.18
Change in NTP expenditure and change in all types of patients treated under DOTS, 20 high-burden countries,^{a,b,c} 2003–2007



^a Countries ranked by percentage change in NTP expenditure.

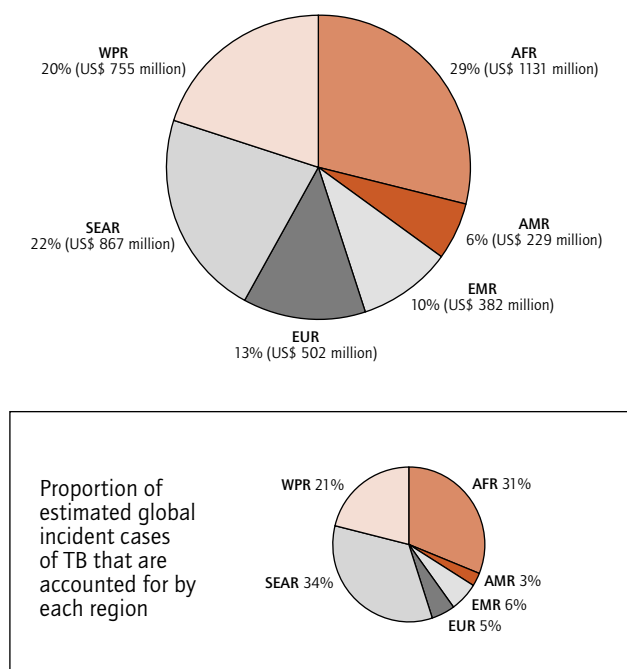
^b Expenditure data not available for Thailand and Uganda. Comparison for Kenya is between 2007 and 2004. For South Africa the comparison is between 2006 and 2005.

^c Expenditure data for Afghanistan, Bangladesh and Viet Nam appear incomplete. See also **FIGURE 3.9**.

(a similar relationship applied for new smear-positive cases specifically; data not shown). For the United Republic of Tanzania, the explanation may be that much of the increased expenditure was for collaborative TB/HIV activities, which (with the exception of intensified TB case-finding in people who are HIV-positive) are not expected to increase the number of cases detected and treated in DOTS programmes.

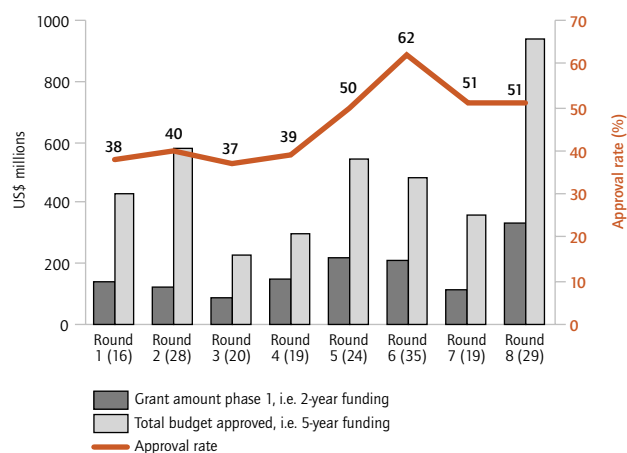
The relationship between increased expenditure and changes in the total number of patients treated was, however, variable. In Brazil, Indonesia, Pakistan and the Russian Federation, the increase in the number of patients treated under DOTS exceeded or approached the increase in expenditures. In Brazil and the Russian Federation, increasing the number of cases treated under DOTS should be easier than in other countries, since it requires mainly a substitution of DOTS for non-DOTS treatment rather than an increase in total case notifications. There was an almost one-to-one relationship between increased expenditures and increased notifications of new cases under DOTS in Pakistan. At the other end of the spectrum, four countries (Afghanistan, Bangladesh, Ethiopia and Viet Nam) reported lower expenditures in 2007 compared with 2003, although none of these countries reported a fall in the number of cases treated. While the data

FIGURE 3.19
Global Fund commitments for TB control by region, as of end 2008^a



^a Refers to the total budgets approved in rounds 1–8.

FIGURE 3.20
Global Fund commitments and proposal approval rate by round. Numbers under bars show the number of TB proposals approved in each round.



are plausible for Ethiopia (given high investments in 2003), it seems likely that expenditures have been underreported in the other three countries.

3.7 Global Fund financing

3.7.1 High-burden countries

After eight rounds of proposals, the total value of approved proposals in the HBCs is US\$ 2.3 billion; the amounts in the Phase 1 grant agreements (that is, for grants covering the first two years of the proposal) total US\$ 632 million (data not shown). The Global Fund is the single most important source of external financing in HBCs (65% of total grant financing); seven countries (Afghanistan, Bangladesh, Cambodia, Nigeria, the Philippines, Uganda and Viet Nam) rely on grants from the Global Fund to finance more than 25% of their NTP budgets. Only Myanmar does not have a Global Fund grant.

By the end of 2008, US\$ 719 million had been disbursed. Across all grants and countries, the actual disbursement rate is very similar to the expected rate,¹ although there is variation among countries. Disbursements were higher than expected in 16 out of 56 grants, similar to what is expected in six grants and less than expected in 34 grants (data not shown). Countries for which disbursements are particularly low in relation to the expected disbursement of funds include Bangladesh (round 5), India (round 3), Indonesia (round 5, probably linked to a temporary cessation of funding in 2007), Kenya (round 2) and Uganda (round 6).

3.7.2 All countries

In eight funding rounds between 2002 and 2008, the Global Fund approved proposals worth a total of US\$ 3.9 billion for TB control in 102 countries, out of total commitments for HIV, TB and malaria of around US\$ 15 billion.² The African Region has the single largest share of grants for TB control, at 29% (FIGURE 3.19), which is similar to its share of the global burden of TB (31%). The South-East Asia and Western Pacific regions have the second and third highest funding in absolute terms, but less than might be expected given their share of the global burden of TB (42% of total funding compared with 55% of estimated cases). The share of total funding approved for the Eastern Mediterranean Region, the European Region and the Region of the Americas (10%, 13% and 6% respectively) is much higher than these regions' share of the global burden of TB (6%, 5% and 3%).

The value of approved proposals for TB control was highest in absolute terms in round 8 and relatively high in rounds 2, 5 and 6 (FIGURE 3.20). The percentage of proposals that were approved was highest in round 6, at 62%.³

¹ The expected rate assumes that disbursements are spread evenly over the two- or five-year period of the grant agreement following the programme start date.

² The Global Fund has committed US\$ 15.2 billion in rounds 1–8 for HIV, TB and malaria; grant agreements worth US\$ 10.3 billion have been signed and US\$ 7.2 billion has been disbursed. See www.theglobalfund.org/en/commitmentsdisbursements.

³ Calculated as the number of proposals approved divided by the number of proposals reviewed by the Global Fund's Technical Review Panel.

An analysis of the components of TB control for which countries requested funding in rounds 6 to 8 is presented in **BOX 3.2**.

3.8 Funding gaps and the global financial crisis

The global financial crisis that developed in 2008 has been followed by either a halt to economic growth or an economic recession in most of the world's biggest economies, including the United States, Japan, Germany, the United Kingdom, Italy, Spain and the European Union as a whole. The International Monetary Fund has predicted that the global economy will grow by just 0.5% in 2009 (compared with 3.4% in 2008), its lowest rate for 60 years.¹ The consequences of economic slowdown and recession will be widespread, and the likely implications for global health are already being debated.^{2,3} The consequences for financing of TB control specifically are unpredictable, but while funding in 2009 is slightly higher than in previous years, funding gaps are likely to become more difficult to fill. In the next 2–3 years, the WHO financial monitoring system set up in 2002 will allow changes in the total level of funding as well as sources of funding in the aftermath of the global financial crisis to be identified.

The 22 HBCs have reported a combined funding gap for TB control in the range of US\$ 0.5–0.7 billion in 2009, while the funding gap reported for 111 countries (the 22 HBCs plus 89 other countries) amounts to US\$ 0.9–1.1 billion in 2009. The main options for filling these funding gaps are (i) increasing the number and size of grants awarded for TB control by the Global Fund and other major donors and (ii) an increase in domestic funding.

There does appear to be potential to increase grants from the Global Fund. The US\$ 3.9 billion committed thus far for TB control (**SECTION 3.7**) represents 25% of total commitments to date. If funds were split evenly among the three global health priorities supported by the Global Fund (AIDS, TB and malaria), grants for TB control would be US\$ 5.0 billion, or US\$1.1 billion more than their existing level. With commitments currently spread over 11 years, this would be equivalent to around US\$ 460 million per year, instead of the current value of approximately US\$ 350 million per year.

An increase in financing for TB control from the Global Fund to US\$ 500 million per year would reduce but certainly not eliminate the funding gaps that have been reported. However, if funding gaps in four middle-income countries with greater domestic resources (Brazil, China, the Russian Federation and South Africa) are excluded, the gaps reported by HBCs fall to about US\$ 200 million in 2009. In the

BOX 3.2

Funding requested from the Global Fund in rounds 6 to 8

The Global Fund issued eight calls for proposals between 2002 and 2008. For rounds 6–8, it is possible to analyse the components of TB control for which countries sought funds according to the major components of the Stop TB Strategy.

In rounds 6–8, the Global Fund approved 85 TB proposals. Most of the funding that was approved was for DOTS (56%), which was defined to include programme management and supervision, laboratory strengthening, training, patient support, human resource development, first-line drugs and monitoring and evaluation. In round 8, there was a clear increase in the total funds approved for DOTS compared with previous rounds. This increase was mainly accounted for by increased funding for laboratory strengthening and an increase in the expected number of patients to be treated in DOTS programmes. Management of MDR-TB, including coordination activities, second-line drugs and laboratory strengthening specific to the diagnosis of drug resistance, was the second largest component (20%). The funds approved for MDR-TB increased steadily in absolute terms between round 6 and round 8, linked to an increase in the planned number of patients to be treated for MDR-TB. ACSM and community-based TB care accounted for 11% of requested funding in rounds 6 to 8.

The remaining funding that was approved in rounds 6 to 8 was accounted for by health system strengthening, including the Practical Approach to Lung Health (5%), activities to control TB in high-risk populations and infection control (4%), collaborative TB/HIV activities (3%) and activities to engage all care providers (1%). Although it is likely that some of the costs for public-private mix initiatives are included under other headings (such as first-line drugs and programme management), the amount appears surprisingly small given the need to ensure that all providers diagnose and treat TB patients according to the International Standards for Tuberculosis Care. A possible explanation for the small amount of funding requested for collaborative TB/HIV activities is that funds were requested mainly for coordination activities, while the funds for interventions such as CPT and ART are requested via HIV proposals. In future, the funding requested for infection control is expected to increase, linked to new policy guidance.

¹ *IMF Survey Magazine* [Online magazine] (available at <http://www.imf.org/external/pubs/ft/survey/so/2009/res012809a.htm>; accessed February 2009).

² *The Financial Crisis and Global Health. Report of a High-Level Consultation, World Health Organization, Geneva, 19 January 2009* [Information Note 2009/1]. Geneva, World Health Organization, 2009 (available at http://www.who.int/mediacentre/events/meetings/2009_financial_crisis_report_en_.pdf; accessed February 2009).

³ The global financial crisis: an acute threat to health. *Lancet*, 2009, 373:355–356.

TABLE 3.4
Financial indicators,^a high-burden countries, 2009

	NTP BUDGET PER CAPITA (US\$)	TOTAL TB CONTROL COSTS PER CAPITA (US\$)	FUNDING GAP PER CAPITA (US\$)	GOVERNMENT EXPENDITURE ON HEALTH PER CAPITA (US\$) ^b	TOTAL EXPENDITURE ON HEALTH PER CAPITA (US\$) ^b	GOVERNMENT HEALTH SPENDING USED FOR TB CONTROL (%) ^c	TB GAP AS PERCENTAGE OF GENERAL GOVERNMENT HEALTH SPENDING ^c
1 India	0.08	0.1	0.02	6.8	36	1.8	0.4
2 China	0.2	0.2	0.01	31	81	0.5	0.02
3 Indonesia	0.3	0.4	0.1	12	26	3.2	0.6
4 Nigeria	0.3	0.4	0.1	8.4	27	4.6	1.6
5 South Africa	7.2	12.3	—	182	437	—	—
6 Bangladesh	0.1	0.1	0.001	3.4	12	4.0	0.02
7 Ethiopia	0.3	0.4	0.2	3.9	6.4	11	5.9
8 Pakistan	0.3	0.3	0.1	2.5	15	14	6.3
9 Philippines	0.2	0.4	0.05	14	37	2.9	0.4
10 DR Congo	0.8	1.0	0.6	1.7	5.0	64	37
11 Russian Federation	8.9	9.0	1.6	171	277	5.2	0.9
12 Viet Nam	0.1	0.3	0	9.6	38	3.3	0
13 Kenya	0.9	1.1	0.4	11	24	11	3.7
14 Brazil	0.3	0.5	0.1	164	371	0.3	0.04
15 UR Tanzania	0.6	0.7	0.2	9.5	17	7.9	2.0
16 Uganda	0.5	0.6	0.3	6.4	22	9.9	5.8
17 Zimbabwe	1.3	1.6	0.7	9.2	21	18	7.8
18 Thailand	0.8	0.8	0.05	63	98	1.3	0.1
19 Mozambique	1.1	1.4	0.3	9.2	15	16	3.2
20 Myanmar	0.2	0.3	0.1	0.4	4.0	62	21
21 Cambodia	0.7	0.9	0.3	6.9	29	14	3.9
22 Afghanistan	0.3	0.4	0.01	4.0	20	11	0.3
High-burden countries (mean value)	1.2	1.5	0.2	33	73	13	4.8

— Indicates not available.

^a For definition of how financial indicators are calculated see ANNEX 2. Data for South Africa are for 2008.

^b Latest data available are for 2005. Source: *National health accounts* [online database]. Geneva, World Health Organization, 2008.

^c The indicators in these columns will be overestimates if government health expenditure has increased since 2005. Furthermore, there is uncertainty around the denominator used to calculate these indicators.

89 non-HBCs that reported data, funding gaps amount to US\$ 120 million in 2009 (instead of US\$ 423 million) when upper middle-income countries (defined as those with a GNI per capita of \geq US\$ 3706) are excluded. Filling funding gaps via the Global Fund appears much more feasible in this context, but still depends on (i) the submission of high-quality and sufficiently ambitious proposals including well-justified budgets and (ii) the criteria used to determine which countries are eligible to apply for funding.

While funding gaps currently identified by low and lower-middle income countries could in theory be closed via applications to the Global Fund, closing gaps in upper-middle income countries as well as the additional gap that will open up if all countries plan in line with the Global Plan will require other sources of funding. The two other major options are external resource mobilization from donors other than the Global Fund and an increase in domestic financing.

Besides grant funding from the Global Fund, the (United States) President's Emergency Plan for AIDS Relief is the other major source of donor funding for health. The plan supports HIV prevention, treatment and care, of which collaborative TB/HIV activities is one part, in most of the African HBCs as well as Viet Nam. With billions of dollars per year avail-

able through this plan, it is important that collaborative TB/HIV activities and related aspects of TB control (for example, laboratory strengthening) are supported as much as possible. UNITAID¹ is also a source of donor funding for TB diagnostics and anti-TB drugs. At the end of 2008, UNITAID had committed support for first-line and second-line anti-TB drugs in 66 countries up to 2011. This support includes funding for first-line anti-TB drugs provided through the Global Drug Facility (GDF) for 876 000 patients during the period 2007–2009 and for a further 4530 patients for the first two years of grants approved in round 6 of the Global Fund; funding for second-line anti-TB drugs for the treatment of 4716 patients with MDR-TB during 2007–2011; and funding for paediatric anti-TB drugs provided through the GDF for 750 000 patients during 2007–2010.

Increasing domestic financing for TB control would mean a major shift from trends during the period 2002–2009, when almost all of the increase in domestic funding among the 22 HBCs was accounted for by Brazil, China and the Russian Federation. Two ways to assess the extent to which countries can mobilize more domestic funds are (i) to compare the percent-

¹ <http://www.unitaid.eu/>

age of funding being provided from domestic sources with a country's national income (measured as GNI per capita) to assess differences between countries with similar income levels (FIGURE 3.12) and (ii) to compare costs and funding gaps per capita with total government health expenditure per capita (TABLE 3.4).

Comparing countries with similar income levels and a similar TB burden suggests that there is scope for increasing domestic funding in several countries, including Indonesia (compared with the Philippines), Pakistan (compared with India) and Kenya (compared with Viet Nam). Comparing costs and funding gaps per capita with government health expenditure suggests that the countries with the most capacity to fund TB control from domestic resources are Brazil, China and Thailand, followed by India, the Philippines, Indonesia and the Russian Federation. The countries with the least capacity to increase funding from domestic sources include the African countries (except South Africa) as well as Cambodia and Myanmar. Furthermore, much of the gap between the expectations set out in the Global Plan and existing country plans is accounted for by MDR-TB treatment in China and India. While affected by the global financial crisis, these countries' economies are still expected to grow by 6.75% and 5% respectively in 2009.¹

3.9 Summary

The financial data reported to WHO in 2008 are the most complete since financial monitoring began in 2002, with more than 100 countries that collectively account for 93% of the world's estimated TB cases providing the entire budget and funding data that were requested. Expenditure data continue to be more challenging to report, but 92 countries submitted a complete report in 2008.

The data show that funding for TB control has increased year-on-year since 2002. Among 94 countries that reported complete data, which account for 93% of TB cases globally and which were among the 171 countries considered in the Global Plan, available funding reached US\$ 3.0 billion in 2009. Most of this funding (87%) will be provided by national governments, with the remainder provided by the Global Fund (9%) and other donors (4%). Among the 22 HBCs in which 80% of incident cases of TB occur, a total of US\$ 2.2 billion is available in 2009, a small increase of US\$ 27 million compared with 2008 but substantially above the US\$ 1.2 billion that was spent on TB control in 2002. Most of the increased funding in HBCs since 2002 has come from domestic funding in Brazil, China and the Russian Federation, and external financing from the Global Fund. Of the US\$ 2.2 billion available in the 22 HBCs in 2009, 88% is from HBC governments, 8% (US\$ 169 million) is from the Global Fund and 4% (US\$ 94 million) is from grants from sources other than the Global Fund. The distribution of funding sources is strikingly different when the Russian Federation and South Africa are excluded: the government contribution to available funding drops to 70%, the Global Fund contribution increases to 19% and grants from sources besides the Global Fund account for 11%.

Despite the increase in funding for TB control that has occurred over the past eight years, large funding gaps remain. Countries have identified funding gaps of US\$ 1.2 billion in 2009. The gap is larger still, at US\$ 1.6 billion, when available funding is compared with the funding requirements for 2009 that were estimated in the Global Plan. To close these funding gaps, additional resources will need to be mobilized from domestic sources as well as donors. This will be a major challenge in the context of a global financial crisis.

¹ IMF Survey Magazine [Online magazine] (available at <http://www.imf.org/external/pubs/ft/survey/so/2009/res012809a.htm>; accessed February 2009).