INTERTEMPORAL DYNAMICS OF PUBLIC FINANCING FOR UNIVERSAL HEALTH COVERAGE:

Accounting for Fiscal Space Across Countries

DISCUSSION PAPER

December 2018

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WORLD BANK GROUP
Health, Nutrition & Population

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Health, Nutrition, and Population (HNP) Discussion Paper

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Health, Nutrition, and Population (HNP) Discussion Paper

Intertemporal Dynamics of Public Financing for Universal Health Coverage: *Accounting for Fiscal Space Across Countries*

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This document was prepared as background for informing activities related to the Multi-Donor Trust Fund on Integrating Externally-Financed Health Programs and the Domestic Resource Mobilization Collaborative of the Joint Learning Network for Universal Health Coverage.

Abstract: As countries undergo their health financing transitions, moving away from external and out-of-pocket (OOP) financing toward domestically sourced public financing, the issue of fiscal space – that is, of finding ways to increase public financing in an efficient, equitable, and sustainable manner -- is front and center in the policy dialogue around universal health coverage (UHC). Although how money is expended is just as critical as the overall resource envelope, we analyze changes in per capita public financing for health in real terms, a proxy for realized fiscal space, within and across 151 countries over time. This allows for an assessment not just of trends in public financing for health but also of contributions from three macro-fiscal drivers -- economic growth, changes in aggregate public spending, and reprioritization for health -- exploiting a macroeconomic identity that captures the relationship between these factors. Analysis of data from 2000 to 2015 shows per capita public financing for health in low- and middle-income countries increased by 5.0 percent per year on average: up from US$60 (2.2 percent of GDP) in 2000 to US$117 (2.8 percent of gross domestic product [GDP]) in 2015. Some of the largest increases were in countries in the Europe and Central Asia (ECA) and East Asia and Pacific (EAP) regions. At 3.1 percent per year, annual growth in public financing for health was lower among high-income countries, albeit from a much higher baseline in 2000. Increases in on-budget external financing comprised most of the changes among low-income countries, whereas domestic government revenues dominated changes in composition of public financing among lower- and upper-middle-income countries. Public financing increased at a faster rate than OOP sources for health in most regions except for South Asia. Although there are important country-specific differences, it is notable that more than half of the increase in public financing for health was due to economic growth alone. For the remainder of the increase, aggregate public spending contributed more than reprioritization across low and lower-middle-income countries, whereas the reverse was true in high-income countries. One key point of note from the landscaping exercise summarized in the paper is the diversity of growth trajectories across countries and, especially, the volatility in trends over time. The implications are clear: capturing public financing with a single growth rate is not the best metric to characterize country experiences, many of which are punctuated by episodes wherein trends are flat or have varying degrees of growth rates (positive or negative). Although country context matters, the importance of economic growth for public financing for health underscores the critical need to situate, integrate, leverage, and proactively manage health financing reforms within a country's overall macro-fiscal context and to assess different pillars of fiscal space holistically.

Keywords: public expenditures on health, health financing, fiscal space, universal health coverage

Disclaimer: The findings, interpretations and conclusions expressed in the paper are entirely those of the authors, and do not represent the views of the World Bank, its Executive Directors, or the countries they represent.

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INTRODUCTION

Public financing is key for UHC. UHC -- a policy commitment that is part of the United Nation's Sustainable Development Goals (SDGs) for 2030 -- is about ensuring that all people can use the promotive, preventive, curative, rehabilitative, and palliative health services they need, of sufficient quality to be effective, while also ensuring the use of these services does not expose the user to financial hardship. Despite progress, recent World Health Organization (WHO)-World Bank (WB) estimates indicate that almost half the world's population still does not have access to a basic package of health services, and more than 100 million individuals annually are impoverished due to high OOP spending at the time and place of seeking care (WHO and WB, 2017). OOP spending -- an inefficient and inequitable modality – remains the largest source of financing for health in most low- and middle-income countries. In addition to being a risk factor for impoverishment, lack of risk pooling under OOP makes it difficult to implement potential gains from strategic purchasing. OOP financing tends to deter or delay utilization and is often associated with perverse incentives for providers to offer unnecessary care.

Addressing shortfalls in service coverage and financial protection will require significant efforts across a variety of contributory factors, both within and outside of health systems, but the role of health financing is critical and intrinsic to UHC. Increasing the level and progressivity of public financing (and potentially other compulsory forms of prepayment and pooling) – expended in ways that increases access to services while improving financial protection by reducing high levels of OOP payments – will be essential for accelerating and sustaining progress towards UHC across low- and middle-income countries. Ensuring adequate and sustainable public financing for health is also a policy concern for high-income countries, given challenges related to ageing, shrinking labor force participation rates, and increasing demands for financing of long-term care.

Economic growth and development are usually accompanied by significant changes in how health systems are financed. In paralleling the demographic, epidemiological, and nutrition-related transitions faced by countries as they grow and develop, there is also what some have called a *health financing transition*: the tendency for levels of health expenditure to increase, accompanied by a rise in the domestic publicly-financed share of health spending; the flip side being a decline in the external- and OOP-financed shares as national incomes rise (Fan and Savedoff, 2014). These empirical trends are driven by a range of factors: institutional development, medical technological advancements, ageing, changing population preferences, etc. Some influence the overall quantum of health spending, while others impact the way in which health systems are financed. The health financing transition describes an empirical trend that reflects what happens on average as countries move up the income ladder. There are important differences, though, across countries and many factors can shape the timing and magnitude of the transition and the extent to which it poses a policy challenge, especially in lower-middle-income countries. For example, in most Pacific island countries, OOP financing has traditionally been low, and so the major challenges faced by those countries is keeping OOP low during the transition from external to domestic public sources of financing. In other low- and middle-income countries, the challenge is about replacing *both* external and OOP sources with domestically sourced public financing to accelerate and sustain progress towards UHC. In countries such as Myanmar, political events have led to the paradoxical situation whereby external financing for health has increased despite high levels of economic growth and the country's recent transition from low-income to lower-middle-income status. If and how countries undergo their health financing transition – especially in terms of the willingness and ability of countries to increase the level and progressivity of public financing for health – will largely determine the rate of progress toward UHC for decades to come. Hence, improving an understanding of some of the factors that can accelerate a country's health financing transition is important from a policy perspective. Given this backdrop, assessing fiscal

space for UHC -- that is, finding options for increasing public financing for health in an efficient, equitable, and sustainable manner -- is a key challenge facing many countries.

To date, the conceptualization and application of fiscal space has been largely forward-looking: examining opportunities and challenges to facilitate changes in the health financing landscape in low- and middle-income countries given a country's likely future demographic, epidemiological, and economic prospects (Barroy et al., 2017a). To complement such prospective assessments, this paper introduces a retrospective data-driven diagnostic that decomposes changes in public financing for health – a proxy for realized fiscal space -- by exploiting a simple macroeconomic identity: that public financing for health in any given year must, by definition, equal health's share of aggregate public expenditures in a country's economy. This implies that changes in public financing for health over time can be mathematically disaggregated into three sources: economic growth, changes in the aggregate public expenditure share of GDP, and reprioritization of health's share in aggregate public expenditures. As we demonstrate in the paper, such an identity-based decomposition – combined with assessments of how the composition of public financing for health has changed and benchmarked against changes in OOP financing over time -- could be included as part of broader diagnostic and analytical work on health financing. This will improve the understanding of past drivers of changes in public financing for health and would allow exploration of some of the reasons behind country-specific variations in trends and in the income elasticity of public financing for health.[1]

The remainder of the paper is organized as follows. The next section summarizes key variables and data sources used in the paper and outlines the decomposition methodology utilized. Section III presents results from retroactively applying the macroeconomic identity that decomposes fiscal space for health, summarizing and highlighting broad trends across low-, middle-, and high-income countries. Section IV investigates some country-specific applications. Section V discusses policy implications for health financing for UHC. Section VI summarizes with a brief conclusion.

[1] Income elasticity of public financing for health measures the percentage change in public financing for health for a given percentage change in national income; if elasticity is greater than unity implies that public financing for health increased by more than the increase in national income.

DATA AND METHODS

The analysis focuses on changes in per capita public financing for health in real terms. This serves as a proxy measure of realized fiscal space. Data were extracted from the June 2018 update of World Health Organization's (WHO's) Global Health Expenditure Database (GHED). GHED classifies data using the revised System of Health Accounts (SHA) methodology for estimating and reporting on expenditures by source, scheme, and use of resources in health systems (OECD, Eurostat, and WHO, 2011). Public financing for health was calculated by summing three major subaccounts of health expenditure by revenue source that were reported for the first time in GHED: (a) transfers from government domestic revenue (labelled 'FS.1' under the new SHA), transfers distributed by government from foreign origin ('FS.2'), and social health insurance (SHI) contributions ('FS.3'). Data from GHED yielded a sample of 151 countries for which time series were available for a minimum of 10 years between 2000 and 2015. Public financing for health was converted to real per capita terms using population and inflation numbers derived from variables included in GHED. Health's share of aggregate public expenditures, the aggregate public expenditure share of GDP, and OOP financing for health were also used from GHED. Additional data from World Bank (WB) sources were also used: specifically, we used the WB country classifications based on 2015 income levels to categorize countries as low-income countries (LICs), lower middle income (LMI), upper middle income (UMI), and high-income countries (HICs). HICs were further classified into those that were members of the Organization of Economic Cooperation and Development (OECD) and non-OECD countries. Data for low- and middle-income countries were also disaggregated into six WB regions: Latin America and Caribbean (LAC), EAP, Middle East and North Africa (MNA), ECA, Sub-Saharan Africa (SSA), and South Asia (SAR).[2] Additional relevant variables, such as the aggregate public revenue share of GDP, were extracted from the April 2018 update of the International Monetary Fund's (IMF's) World Economic Outlook (WEO) database.

Public Financing for Health: System of Health Accounts versus Official Budgetary Data

Although conceptually more accurate, data on health spending using the SHA 2011 framework do not always comport with how policymakers relate to and dialogue around public financing for health. For example, under SHA, estimates of government spending on health could include resource flows through sectors and institutions that might be outside the immediate budgetary concerns of ministries of health (OECD, Eurostat, and WHO, 2011).[3] SHA 2011 allows for a more systematic assessment of how financing for health is mobilized, managed, and used. SHA 2011 specifically outlines three approaches to measuring health care expenditures flows: by financing schemes (such as national health service, SHI, and voluntary private insurance); by the institutional units (such as government units, social security agencies, and private insurance corporations); or by revenue-raising mechanisms. The first main category of financing agent classified by SHA 2011 is the general government. As an agent, the government is involved in all three major elements of the health financing system: revenue-raising, pooling, and purchasing. The main subcategory of general government is the central government, which includes not only ministries of health, but any central government entity involved in public financing for health. Indeed SHA 2011 acknowledges that other government agencies not obviously involved in health may still hold useful information in constructing national health accounts. Thus, for example, although military hospital spending might be included as part of the budget of ministries of defense and not under ministries of health, these resources are generally included as health spending under SHA classification. State/regional/local governments are other categories of government financing agents, separate from the central government. They may act for different health financing schemes and may receive funds from the general government separate from ministries

[2] The full list of countries included in the sample is summarized in Annex I; countries with population<600,000 have been excluded from the analysis.

[3] In addition, SHA data reflect *expenditures*, and not *allocations*. In many low- and middle-income countries, often significant proportions of allocated funds are unexpended and returned at end of the fiscal year due to absorptive capacity constraints (e.g., due to delays in release of funds by ministries of finance, inability to transfer resources across line items, poor planning and budgeting on the part of ministries of health, or other public financial management [PFM] challenges). Hence, it is sometimes useful to look separately at trends in allocations versus expenditures for government budgetary spending on health.

of health. Furthermore, some private health care financing schemes may receive revenues from government and not necessarily from ministries of health. SHA 2011 recommends that to determine public financing for health, all government transfers be included, even those to private entities.

The methodology we use to assess public financing over time is derived from the concept of fiscal space for health. Although there are many different definitions of fiscal space, one of the seminal references is Heller (2005) who defines fiscal space as "…the availability of budgetary room that allows a government to provide resources for a desired purpose without any prejudice to the sustainability of a government's financial position". This definition does not specify fiscal space for any specific sector; it is presumed that additional public financing would be needed for a suitably meritorious purpose. Alternative definitions of fiscal space focus on issues around debt sustainability, defining fiscal space in terms of the difference between current and "optimal" or "safe" measures of debt (Baum et al., 2017; IMF, 2016).

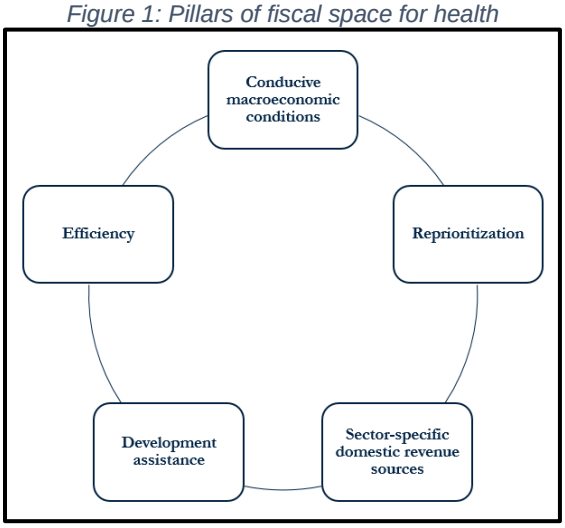
The framework for fiscal space that we use in this paper is the one presented in Heller (2006) and subsequently elaborated in Tandon and Cashin (2010). Both outline a sector-specific framework that summarizes several potential mechanisms by which increases in public financing for health could be realized (Figure 1). Among these are: (a) conducive macroeconomic conditions, such as sustained economic growth and increases in aggregate public revenues, both of which are outside the domain of the health sector but are nevertheless important determinants of public financing for health; (b) increasing health's share in aggregate public expenditures by reprioritization; and (c) introduction or expansion of earmarked consumption or income taxes, including via SHI where levels of formality of the labor might make this a feasible option.[4] Effective expansions of public financing for health across countries have typically resulted from a combination across all three dimensions, in addition to improvements in efficiency of spending that can help realize effective fiscal space for health while at the same time being an important determinant of reprioritization.[5] Furthermore, in some low- and middle-income countries, development assistance has often played a key role in increasing fiscal space, especially for expanding coverage and financial protection for the poor and vulnerable.[6]

[4] Studies that explore the dynamics of some of these pillars in generating fiscal space for health include Basrin (2013), Bitran (2012), Durairaj and Evans (2010), Lu et al. (2010), Marten et al. (2014), McIntyre et al., (2014), and, Meheus and McIntyre (2017). Other studies that found strong correlation between government revenue and public spending on health include Ángeles-Castro and Ramírez-Camarillo (2014), Bajo-Rubio and Gómez-Plana (2015), Behera and Dash (2018), Lora and Olivera (2007), and Reeves et al. (2015).

[5] In India for instance, Behera and Dash (2018) used an econometric model to show that both economic growth and fiscal balance would generate fiscal space needed to allocate more funds toward public health care in 15 major states.

[6] An interesting strand in the literature show evidence that donor assistance in health may have partially or fully substituted domestic government financing on health. See for instance Dieleman et al. (2013) and Farag et al. (2009). Ideally, donor funding should be complementary to government spending.

Figure 1: Pillars of fiscal space for health



The decomposition method used in this paper focuses on uncovering the relative contributions to changes in public financing for health over time – that is, of realized fiscal space -- from a sub-set of factors using a modified version of the sector-specific framework and by exploiting a key macroeconomic identity that, in any given years *t* and *t*+1, the following must hold true:

$$P_t = H_t E_t Y_t$$
$$P_{t+1} = H_{t+1} E_{t+1} Y_{t+1},$$

where *P* is per capita public financing for health in constant local currency units (LCUs), *H* is health's share of public expenditure, *E* is the public expenditure share of GDP, and *Y* is real GDP per capita in LCUs. Taking the logarithmic difference in *t*+1 versus *t* (denoted by lowercase with 'hat') of public financing for health must mathematically equal the sum of the logarithmic growth rates in health's share of public expenditures, of aggregate public expenditures as share of GDP, and of GDP per capita:[7]

$$\hat{p}_t = \hat{h}_t + \hat{e}_t + \hat{y}_t.$$

In other terms, this implies that the growth rate of public financing for health ($\hat{p}_t$) over a given time period must be exactly accounted for by changes in GDP per capita (that is, by economic growth, or $\hat{y}_t$), changes in aggregated public expenditures as share of GDP ($\hat{e}_t$), and by changes in health's share in aggregate public expenditure ($\hat{h}_t$).

For example, a country with GDP per capita of US$1,000, an aggregate public expenditure share of 20 percent, and health's share of public expenditure of 5 percent will have per capita public financing for health of US$10. If GDP per capita increases to US$1,310, the aggregate public expenditure share increases to 21 percent, and health share of public expenditure declines to 4 percent, per capita public financing for health will rise to approximately US$11. As can be seen in Table 1, the logarithmic growth rate of public financing for health ($\hat{p}_t$) of 9.6 percent equals the sum of the logarithmic growth rates in GDP per capita of 27.0 percent ($\hat{y}_t$), in aggregate public expenditures of 4.9 percent ($\hat{e}_t$), and in reprioritization for health of -22.3 percent ($\hat{h}_t$). In this example, the largest source of the increase in public financing for health comes from economic

[7] Although mathematically this identity must hold exactly, empirically it will hold only approximately given data-related measurement errors.

growth, followed by contributions from an increase in aggregate public expenditures. Both increases were offset by a decline in prioritization for health.

Table 1: Illustrating fiscal space decomposition

Levels	*t*	*t*+1	Changes	Δ (%)
Y (US$)	1,000	1,310	$\hat{y}_t$	27.0
E (%)	20	21	$\hat{e}_t$	4.9
H (%)	5	4	$\hat{h}_t$	-22.3
P (US$)	10	11	$\hat{p}_t$	9.6

As can be inferred from this stylized example, in conceptualizing and measuring potential sources of fiscal space for health, there are no guarantees that the combined impact of underlying drivers would necessarily lead to increases in overall public financing for health. In some cases, an increase from one source could be offset by a decline from another source. It is also important to underscore that each option for realizing fiscal space for health comes with its own set of costs and benefits. Whereas increasing public revenues may ease fiscal constraints, the way in which additional revenues are raised is a crucial consideration. Regressive, inefficient, and excessive taxation could stifle economic growth, skew income distributions, raise informality, and have adverse intertemporal effects. Similarly, while external financing may help ease budgetary shortfalls in LICs that lack domestic financing to cope with the costs of high disease burdens, it can also come with its own set of negative externalities and raise issues of sustainability. As countries become richer, public financing for health generally tends to rise. However, there are huge variations around this trend. This reflects in large part the intermediating influence of other factors such as the extent to which health is prioritized over other sectors as well as the ways in which health systems are organized and financed. In assessing the availability of fiscal space, it is imperative to situate the health sector in a broader macro-fiscal context, as well as to carefully evaluate the costs and benefits of different options and cross-sectoral trade-offs that may or may not lead to availability of additional public financing for health.

The method for decomposing public financing for health is conceptually similar to macroeconomic growth accounting, whereby changes in GDP are attributed to changes in labor, capital, and productivity.

Macroeconomic Growth Accounting: Decomposing Changes in GDP into Labor, Capital, and Productivity

The fiscal space accounting framework outlined in this paper is conceptually similar to the economic growth accounting framework that is often employed to identify to what extent growth in GDP is a result of changes in labor and capital inputs in an economy (Senhadji, 1999). Economic growth accounting decomposes changes in GDP into labor and capital. Anything not explained by changes in labor and capital is attributed to a residual, often referred to as the *Solow residual*, which is assumed to capture changes in total factor productivity reflecting how efficiently inputs are used to yield aggregate production in an economy.

Following a typical application of this framework, aggregate GDP in an economy at time *t* (G_t) is assumed to follow a Cobb-Douglas production of the form:

$$G_t = A_t K_t^{\alpha} (L_t C_t)^{1-\alpha},$$

where K_t is the stock of capital, L_t is total employment, C_t is an index of human capital (and, therefore, $L_t C_t$ represents a human capital-adjusted measure of labor input), and A_t is total factor productivity. Taking logs of both sides and differentiating totally yields:

$$\hat{g}_t = \hat{a}_t + \alpha \hat{k}_t + (1-\alpha)(\hat{l}_t + \hat{c}_t).$$

The above equation decomposes growth in GDP into the weighted average of growth in capital and in human capital-adjusted labor, with $\hat{a}_t$ representing growth in total factor productivity in the economy which is usually estimated

indirectly as a residual from a regression of GDP on labor and capital in logarithmic growth rate terms. The weights can be approximated by the shares of the two inputs in GDP.

Furthermore, dividing each component of the fiscal decomposition equation by the logarithmic difference of GDP per capita in *t*+1 versus *t* (that is, by $\hat{y}_t$) yields the elasticity ε of each component with respect to the relative percentage change in national income:

$$\varepsilon_{p,y} = \varepsilon_{h,y} + \varepsilon_{e,y} + 1.$$

This equation shows that the income elasticity of public financing for health ($\varepsilon_{p,y}$) is the sum of the income elasticity of health's share of public expenditures ($\varepsilon_{h,y}$) and of aggregate public expenditure ($\varepsilon_{e,y}$). This implies that the income elasticity of public spending on health will be greater than unity if this sum is positive; if the sum is negative, the elasticity will be less than unity. In the illustrative example in Table 1, $\varepsilon_{p,y}$ is less than unity (0.35) because of the large negative income elasticity of health's share of public expenditures (-0.83). Hence, the decomposition exercise can also shed light on why the income elasticity of public financing for health deviates from unity.

Table 2 provides a snapshot of the 2015 averages for GDP per capita and per capita total health spending across income and regional groupings for the 151 countries included in the analytical sample.[8] Total health spending in low- and middle-income countries averaged US$221 per capita (6.0 percent of GDP) compared to US$2,838 in HICs (8.2 percent of GDP). Across low- and middle-income countries, public financing for health was US$117 per capita (2.8 percent of GDP). This number was almost 15-fold higher among HICs (US$1,692, 5.6 percent of GDP). Less than 10 percent of all low- and middle-income countries had levels of public financing for health that exceeded 5 percent of GDP in 2015, a benchmark recently recommended in the literature (Meheus and McIntyre, 2017; Røttingen, Ottersen, and Ablo, 2014). Among low- and middle-income countries, LAC countries had the highest levels of public financing for health, including as share of GDP. The SAR region is notable for having the lowest levels and share of GDP for public financing among low- and middle-income countries.

Table 2: Summary indicators for analytical sample of 151 countries, 2015

Classification	*N*	Per Capita GDP, US$	Per Capita Total Health Spending, US$ (Share of GDP, %)	Per Capita Public Financing for Health, US$ (Share of GDP, %)	OOP Share of Total Health Spending, %
Low- and middle-income	***113***	***3,841***	***221 (6.0)***	***117 (2.8)***	***40***
LIC	27	592	39 (6.9)	14 (2.4)	39
LMI	42	2,214	121 (5.4)	56 (2.4)	45
UMI	44	7,387	430 (6.1)	246 (3.4)	35
SSA	42	1,917	103 (6.2)	49 (2.6)	37
SAR	7	1,734	64 (4.6)	30 (1.3)	57
MNA	12	3,849	244 (5.9)	136 (2.9)	38
EAP	13	3,782	157 (4.2)	87 (2.0)	37
ECA	20	5,200	331 (7.0)	168 (3.4)	46
LAC	19	7,475	456 (6.6)	263 (3.6)	34
High-income	***38***	***32,647***	***2,838 (8.2)***	***1,692 (5.6)***	***18***
Non-OECD	13	26,532	1,265 (5.5)	836 (3.6)	23
OECD	25	35,826	3,655 (9.6)	2,803 (6.8)	16
All	***151***	***11,090***	***888 (6.6)***	***398 (3.5)***	***34***

Source: Authors' calculation based on data from WHO (2017).

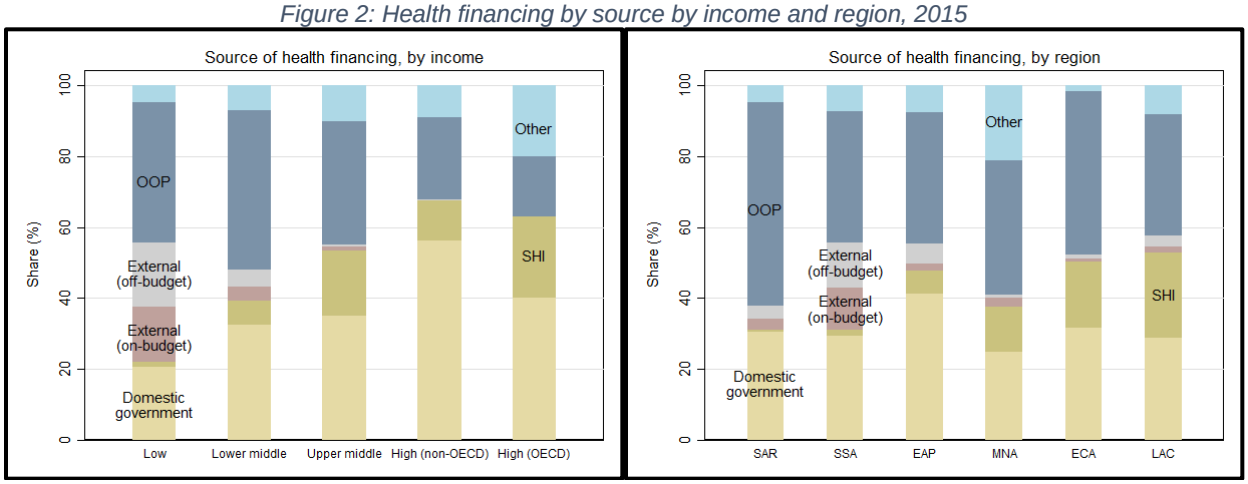
Data on the composition of total health spending reveal evidence of the health financing transition: HICs financed a greater share of their health spending from public sources – both domestic government revenues and SHI -- and a lower share from OOP and external sources. For example, over two-thirds of total health spending in high-income OECD countries was public and less than one-fifth was OOP. In LICs, on the other hand, OOP financing was 39 percent, external financing was almost a third, and domestically sourced public financing was only 20 percent of total (Figure 2).[9] Among low- and middle-income countries, by region, SSA had the highest share of total health spending from external financing. LAC countries had a generally higher share coming from SHI contributions. SAR is notable as the region with the highest (greater than 50 percent) share of health financing from OOP sources, followed closely by ECA. High-income OECD countries – which are also the most advanced in terms of both the service coverage and financial protection dimensions of UHC -- had OOP financing shares of less than 20 percent on average.[10] These patterns of health expenditure component shares across income groups are consistent with those reported by WHO (Xu et al., 2017).

[8] All data are in constant 2015 US$ exchange rates unless specified otherwise; total health spending refers to total current spending and excludes capital expenditures.

[9] The remainder was private financing, including by firms and non-governmental organizations (NGOs).

[10] WHO also recommends that countries move towards OOP financing shares being less than 20 percent because this has empirically found to be correlated with lower incidence of large and impoverishing health spending; some countries such as Sri Lanka and Malaysia had OOP shares of total health spending that exceeded 20 percent but are largely incident on the rich and were less than 1.5 percent of GDP (since total health spending levels are low) so in these countries the relatively high OOP is not generally associated with poor levels of financial protection.

Figure 2: Health financing by source by income and region, 2015



Source: Authors' calculation based on data from WHO (2017).

Over 2000-2015, per capita public financing for health in real terms grew annually by 5.0 percent across all 113 low- and middle-income countries included in the analytical sample.[11] By way of contrast, the average annual increase was only 3.1 percent in HICs, albeit from a much higher base in 2000 (Table 3). As a group, UMI countries had the fastest growth rates, and high-income OECD countries the slowest. Although growth rates in real per capita public financing for health were higher in low- and middle-income countries, so was the variation. The standard deviation in the average annual growth rate for low- and middle-income countries was 15 percentage points, more than double the standard deviation for growth rates across HICs. Figure 3 shows the scatter plot of initial per capita public financing for health in 2000 against subsequent annualized growth rates over 2000-2015. Whereas the generally negative correlation between growth and initial public financing is barely noticeable, the larger variance in growth rates among low- and middle-income countries is clearly evident. Among low- and middle-income countries, those in the ECA and EAP regions experienced relatively high annual growth rates, higher than 7 percent on average; at 1.4 percent, MNA countries had the lowest growth rates in per capita public financing for health.

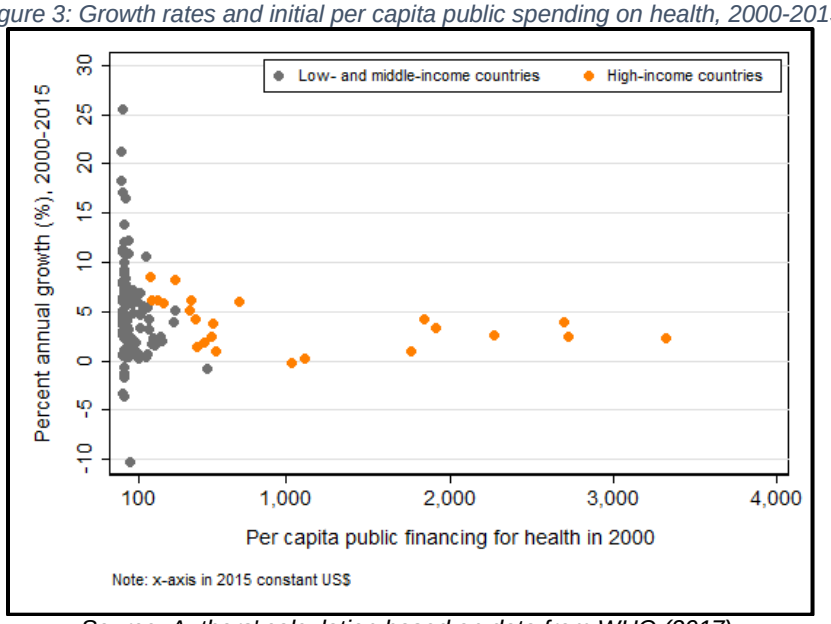
Table 3: Per capital public and OOP financing for health across 151 countries, 2000-2015

	Per Capita Public Financing for Health			Per Capita OOP Financing for Health		
	2000 (US$)	*Annual Growth (%)*	*2015 (US$)*	*2000 (US$)*	*Annual Growth (%)*	*2015 (US$)*
Low- and middle-income	***60***	***5.0***	***117***	***56***	***3.0***	***81***
LIC	8	4.6	14	13	1.7	16
LMI	29	5.1	56	31	3.6	55
UMI	125	5.2	246	107	3.3	147
SSA	27	4.8	49	23	1.8	33
SAR	21	3.9	30	14	5.1	32
MNA	83	1.4	136	109	0.7	98
EAP	37	7.2	87	25	4.9	53
ECA	72	7.5	168	60	5.9	146
LAC	141	4.2	263	134	2.0	147
High-income	***1,067***	***3.1***	***1,692***	***346***	***2.4***	***473***
Non-OECD	485	4.0	836	245	1.3	296
OECD	1,824	2.6	2,803	409	2.9	573
All	***240***	***4.5***	***398***	***126***	***2.9***	***177***

Source: Authors' calculation based on data from WHO (2017).

[11] Growth rates in per capita public financing for health were calculated in real LCUs.

Figure 3: Growth rates and initial per capita public spending on health, 2000-2015



Source: Authors' calculation based on data from WHO (2017).

From the perspective of UHC, it is not just the overall quantum of health financing but also its composition that matters. If public financing for health grows at 5 percent per year and OOP spending is growing at 10 percent per year, OOP financing will over time dominate a country's health financing system. Ideally, the pace of growth in public financing for health and how it is allocated should 'crowd out' OOP financing, especially among the poor and vulnerable. Although there are important country-specific differences discussed later, public financing for health has, on average, grown at a faster rate than OOP financing in almost all regions except for SAR (Table 3).

Among low- and middle-income countries, annual per capita economic growth rates of 2.9 percent accounted for more than half of the 5.0 percent increase in public financing for health. For the remainder of the increase, the contribution of aggregate public expenditures was higher than that of reprioritization (Table 4). Economic growth rates of 1.5 percent were also the dominant source of the 3.1 percent of realized fiscal space for health in HICs; however, unlike the case of low- and middle-income countries, the contribution of reprioritization was higher than that of increases in public spending for the remainder of the increase. More than two-thirds of the increase in public financing for health came from economic growth among LMI countries, especially in SAR and EAP countries. Increases in on-budget external financing comprised most of the increases among LICs, whereas domestic government revenues dominated changes in composition of public financing among LMI and UMI countries. SHI contributions accounted for 44 percent of the increase in public financing in UMI countries, mostly in the LAC, ECA, and MNA regions.

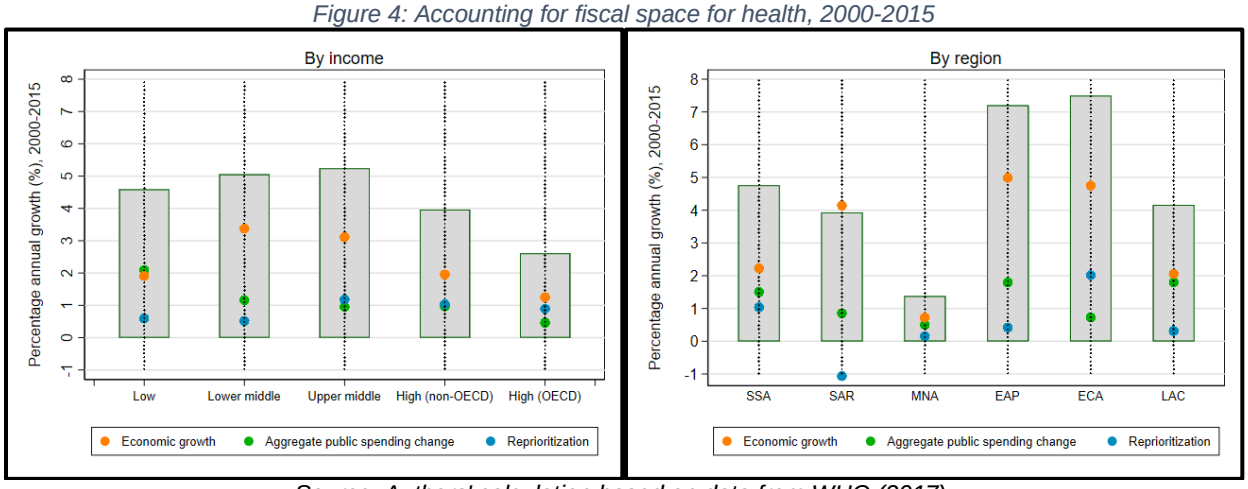
Table 4: Accounting for fiscal space for health for 151 countries, 2000-2015[12]

	Per capita Public Financing for Health						
		Change in Sources, Share From:			Fiscal Space Decomposition, Share From:		
	Annual Growth (%)	*Domestic Government Revenues (%)*	*Social Health Insurance Contributions (%)*	*On-Budget External Financing (%)*	*Economic Growth (%)*	*Change in Aggregate Public Expenditure (%)*	*Reprioritization for Health (%)*
Low- and middle-income	***5.0***	***57***	***28***	***17***	***56***	***25***	***17***
LIC	4.6	37	3	59	37	42	19
LMI	5.1	73	14	13	67	24	10
UMI	5.2	55	44	1	60	19	23
SSA	4.8	56	4	40	46	31	21
SAR	3.9	54	1	44	69	23	10
MNA	1.4	48	39	13	50	36	14
EAP	7.2	76	16	8	69	25	6
ECA	7.5	55	44	1	64	9	27
LAC	4.2	43	52	5	50	43	7
High-income	***3.1***	***80***	***20***	***0***	***48***	***19***	***29***
Non-OECD	4.0	88	12	0	50	25	25
OECD	2.6	72	28	0	50	19	35
All	***4.5***	***60***	***27***	***15***	***57***	***26***	***20***

Source: Authors' calculation based on data from WHO (2017).

Figure 4 is a visual summary of the fiscal space decomposition reported in Table 4. The bar shows the average growth in real per capita public financing for health by income classification and for low- and middle-income countries, by region. The dots represent the growth rates in economic growth, in aggregate public spending, and in reprioritization; all three dots will, as per the macroeconomic identity outlined earlier, equal the height of the bar. As can be seen, except for LICs, economic growth was the largest contributor to fiscal space for health across all groupings. Relative to low- and middle-income countries in other regions, the role of reprioritization was highest among ECA countries.

Figure 4: Accounting for fiscal space for health, 2000-2015



Source: Authors' calculation based on data from WHO (2017).

As can be seen in Table 5, the global income elasticity of public expenditures on health was estimated to be 1.8, that is, a 1 percent increase in real GDP per capita translated into a 1.8 percent increase in real per capita public expenditures on health over 2000-2015 in the sample of 155 countries. The elasticity estimates were highest for LICs (2.4). EAP, ECA, and SAR countries had the lowest income elasticities. One advantage of using the fiscal space decomposition to estimate elasticities is that it enables an explanation of why income elasticities are what they are. For example, SAR countries had an income elasticity for public financing for

[12] For reference, the accounting exercise using public financing as agent and using PPP international $ numbers are reported in Annex III and IV.

health of only 0.9, partly because of the low contribution from reprioritization for health. The magnitudes of these estimates are consistent with estimates reported by others in the literature – for example, in Schieber and Maeda (1999), Musgrove, Zeramdini, and Carrin (2002), and Barroy et al. (2017b) -- who found that the sensitivity of per capita public spending on health to changes in income per capita was greater than unity. However, other more recent papers have calculated the elasticity to be less than unity. These papers addressed specific econometric issues, such as accounting for potential non-stationarity of data and using modern methods of panel data regression analysis (for example, Xu et al., 2011; Fan and Savedoff, 2014). Given that these papers used data that exhibit public spending on health rising more rapidly than national income over time, their results are consistent with previous papers. Their estimates resulted in lower elasticities only after adjusting for other factors that influence health spending, such as demographics (share of population above the age of 60 years), 'fiscal capacity' (that is, total government expenditure as a share of GDP), and health system and other characteristics (that is, OOP spending and incidence of tuberculosis). In other words, part of the association between health spending and national income is explained by other determinants of health spending (see Costa-Font, Gemmill, and Rubert [2011] for a meta-analysis of published studies). One important driver of health spending that is closely correlated with a country's economy is technological change. For instance, research has shown that the invention of new medical technologies and changing medical practices accounted for 27-48 percent of health spending growth since 1960 (Smith, Newhouse, and Freeland, 2009).

Table 5: Income elasticity of public financing for health

	Elasticity
Low- and middle-income	***1.7***
LIC	2.4
LMI	1.5
UMI	1.7
SSA	2.1
SAR	0.9
MNA	1.9
EAP	1.4
ECA	1.6
LAC	2.0
High-income	***2.1***
Non-OECD	2.0
OECD	2.1
All	***1.8***

Source: Authors' calculation based on data from WHO (2017).

There is also evidence in the data of systematic variations in growth rates of public financing for health over 2000-2015. Although some country subgroups have experienced consistently steady linear growth trends in per capita public spending for health, others show large shifts in trends over time, often with statistically identifiable policy-relevant 'break points' (Pritchett, 2000).[13] Using Pritchett's method, the year when a break in trend for per capita public spending on health can be identified by estimating the equation below and finding the breakpoint year (t^*) that minimizes the sum of squared errors over all t:

$$P_t = a_1 * I(t \leq t^*) + b_1 t * I_1(t \leq t^*) + a_2 * I(t > t^*) + b_2 t * I(t > t^*) + \varepsilon_t,$$

where $I(.)$ is an indicator function (1 if the argument holds; 0 otherwise), $t=[t_0,\ldots,T]$ where t_0 is 2000, T is 2015, t^* is the breakpoint year that is chosen subject to the constraint that each segment of the trend covers a minimum of three years (that is, $t^*-t_0 \geq 3$ and $T-t^* \geq 3$) and a and b are the intercept and time-trend slope, respectively, where the suffix 1 or 2 represent the estimates before

[13] Pritchett (2000) extends Ben-David and Papell's (1998) method for determining the significance and timing of shifts in trends of variables.

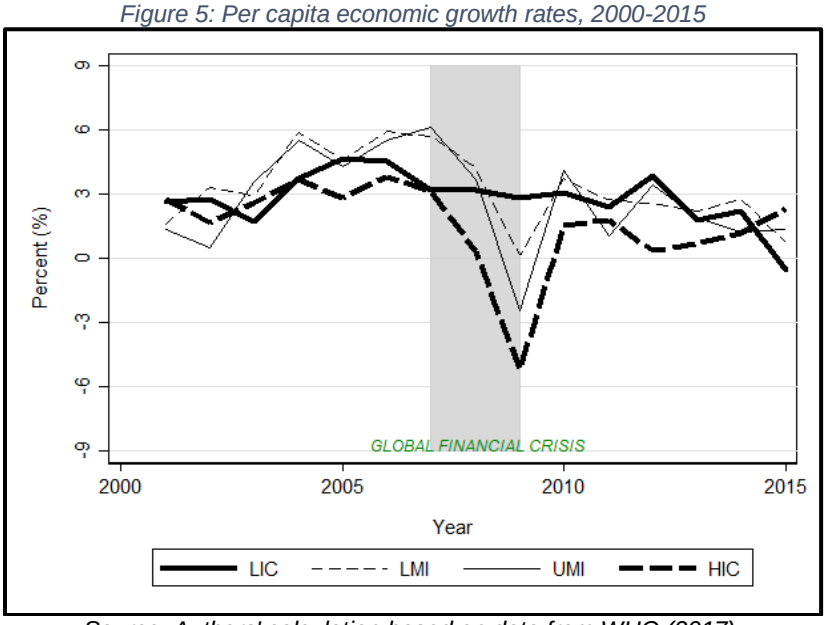
and after the estimated breakpoint.[14] Table 6 summarizes results from application of the break point estimation methodology across all 151 countries in our analytical sample. The first noticeable aspect of shifts in trends is the general deceleration of growth in per capita public financing for health before and after country-specific breakpoints which, on average, occurred around the year 2008. Growth rates in low- and middle-income countries decelerated 4.0 percentage points, while growth rates in HICs decelerated by 1.8 percentage points. The timing of the deceleration across countries appears to coincide with the global financial crisis of 2007-2009 which initially originated in the United States, and resulted in a severe global economic contraction that affected many LMIs, UMIs, and HICs (Figure 5).[15] We investigate the issue of variations in trends over time further in the next section that summarizes country-specific results.

Table 6: Statistics on instability of growth rates of per capita public financing for health

	Summary from 'Best Break' Analysis				
	Year	*Percentage Point Shift*	*Growth before Break*	*Growth after Break*	*R^2 of Trend*
Low- and middle-income					
Mean	2008	-4.0	8.0	4.0	0.61
Standard deviation	3	27.5	26.5	9.0	0.34
High-income					
Mean	2008	-1.8	4.3	2.5	0.66
Standard deviation	2	6.3	5.0	3.4	0.35

Source: Authors' calculation based on data from WHO (2017).

Figure 5: Per capita economic growth rates, 2000-2015



Source: Authors' calculation based on data from WHO (2017).

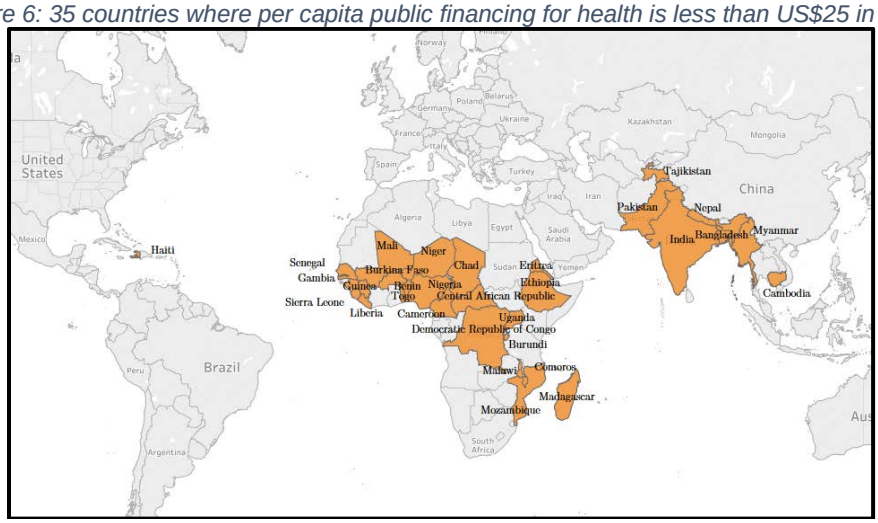
[14] Given the relatively short time period over which cross-country data are available, the method allows for only a single break point and the choice of a minimum of three years is arbitrary and for illustrative purposes only. In country-specific applications of this analysis, where longer time series data may be available, additional break points could be considered.

[15] Despite LICs being somewhat insulated from the global economic crisis, their breakpoint was also estimated at 2008; in addition, a second break point – one that is not picked up by the statistical method – appears to have occurred around 2014 for LICs, LMIs, and UMIs.

INVESTIGATING COUNTRY-SPECIFIC LEVELS AND TRENDS

Per capita public financing for health varies widely across countries, both in levels and as share of GDP. In 2015, levels ranged from a low of US$4 in the Central African Republic (CAR) to US$4,802 in the United States. Public financing for health as share of GDP ranged from a low of 0.5 percent in Bangladesh to 9.4 percent in Germany. It is notable (and sobering) that 2.5 billion people – more than one-third of the world's population – live in 35 low- and middle-income countries where public financing for health remains especially low, less than US$25 per capita (Figure 6). These include the three countries that recently saw an Ebola outbreak (Sierra Leone, Guinea, and Liberia) and several others mostly in the SSA and SAR regions (including India, Nigeria, Ethiopia, Pakistan, Uganda, Nepal, Tanzania, and Bangladesh). Many of these countries are also those that are lagging, across both the service coverage and financial protection dimensions of UHC (WHO and WB, 2017).

Figure 6: 35 countries where per capita public financing for health is less than US$25 in 2015



Source: Authors' calculation based on data from WHO (2017).

Among low- and middle-income countries, public financing for health grew fastest in the former Yugoslav Republic (FYR) of Macedonia averaging an increase of 25.5 percent per year, albeit from a base spending of only US$4 per capita in 2000, to US$190 in 2015. Other low- and middle-income countries where public financing grew rapidly include the Democratic Republic of Congo (DRC), Myanmar, Liberia, and China. Each saw an annual increase of more than 15 percent per year, again though from very low base levels of spending in 2000 (Table 7). Among HICs, Trinidad and Tobago, Republic of Korea, Singapore, Latvia, and Qatar increased public financing by more than 5 percent per year. A few countries saw negative growth rates. For example, the five low- and middle-income countries with the lowest rates experienced negative growth and are classified by WB as those that are affected by fragility, conflict, or violence (FCV): Yemen, Haiti, CAR, Eritrea, and Comoros. Among HICs, United Arab Emirates (UAE) exhibited negative growth rates. The difference between the low- and middle-income country with the fastest growth (FYR Macedonia) and the slowest (Yemen) was over 35 percentage points. The same contrast between the fastest (Trinidad and Tobago) and slowest (UAE) among HICs was around 9 percentage points.

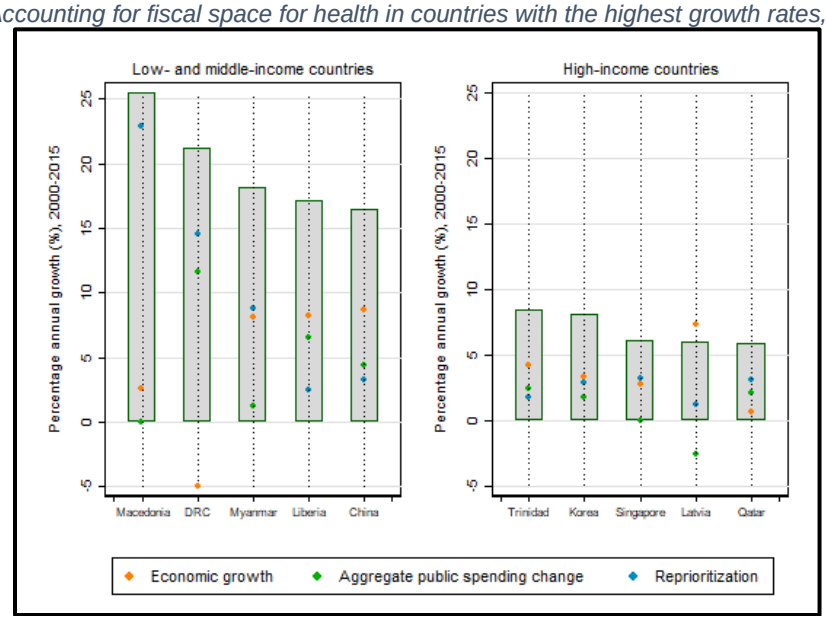
Table 7: Levels and growth rates of real per capita public expenditure on health, 2000-2015[16]

	Low- and Middle-Income				High-Income			
Rank	*Country*	*2000 (US$)*	*Growth Rate (%)*	*2015 (US$)*	*Country*	*2000 (US$)*	*Growth Rate (%)*	*2015 (US$)*
Five highest growth rates	FYR Macedonia	4	25.5	190	Trinidad and Tobago	174	8.4	617
	DRC	0.4	21.2	9	Republic of Korea	352	7.8	1,135
	Myanmar	0.9	18.2	14	Singapore	427	6.8	1,183
	Liberia	2	17.1	23	Latvia	182	6.1	451
	China	22	16.5	254	Qatar	717	5.9	1,733
Five lowest growth rates	Yemen	49	-10.3	10	UAE	1,038	-0.3	999
	Haiti	13	-3.6	7	Portugal	1,115	0.1	1,140
	CAR	6	-3.3	4	Greece	831	0.5	889
	Eritrea	18	-1.8	14	Croatia	573	0.9	654
	Comoros	13	-1.3	10	Italy	1,766	0.9	2,022

Source: Authors' calculation based on data from WHO (2017).

Figure 7 shows the fiscal space decomposition for low-, middle-, and high-income countries that had the five highest growth rates of public financing on health as reported earlier in Table 7. The diversity of drivers of fiscal space for health across this subset of countries is notable. China is an example where the largest contributor was economic growth: annual per capita income grew by an average 8.7 percent per year in China, far above the corresponding average for all low- and middle-income countries (2.9 percent). In FYR Macedonia, on the other hand, the biggest source of fiscal space was due to reprioritization. In Latvia, increases in public financing for health resulting from economic growth were offset by declining aggregate public spending as share of GDP.

Figure 7: Accounting for fiscal space for health in countries with the highest growth rates, 2000-2015



Source: Authors' calculation based on data from WHO (2017).

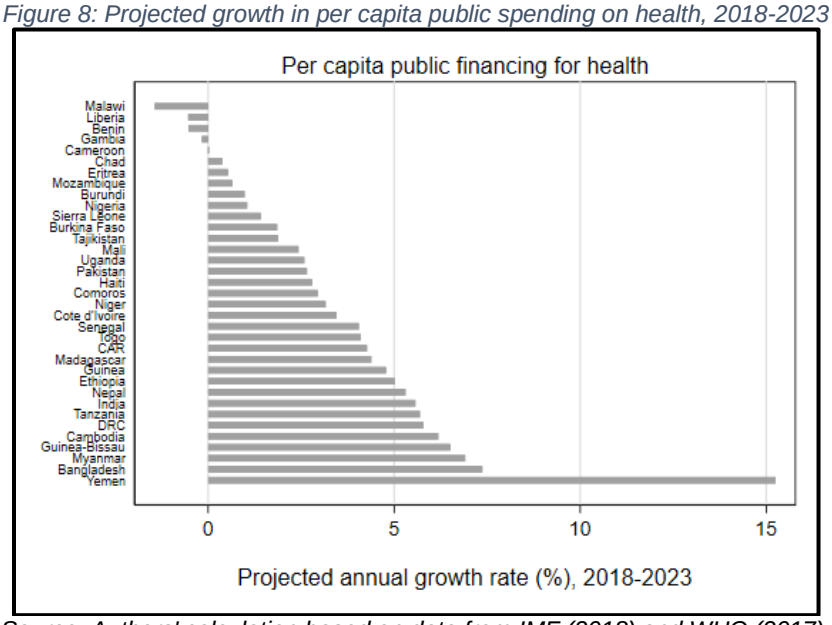
The macroeconomic identity described earlier provides one simple way to project future public financing for health.[17] Using 5-year forecasts of GDP per capita and aggregate public expenditures and assuming health's share of aggregate public spending remains the same as it

[16] All numbers are in constant 2015 US$.

[17] Using models to project health spending levels can be useful especially in assessing if countries would be able to achieve normative targets developed by the global health community (e.g., Abuja declaration, Chatham House targets). Ly et al. (2017), for instance, use econometric methods to project GDP and use this and inflation assumptions to forecast costs of an essential package of health services (EPHS) in selected countries in Sub-Saharan Africa.

was in 2013-2015, we apply this method to the 35 countries that spent less than US$25 per capita in 2015 shown in Figure 6. The results show that – at current projections over 2018-2023 – real per capita spending on health would likely increase in a majority of the countries, including at an annual rate of more than 7 percent in Bangladesh and Yemen. However, barring other interventions, spending levels are expected to decline in some of the other countries, including Benin, Gambia, Liberia, and Malawi (Figure 8). At current trends, only four countries – Cambodia, Guinea-Bissau, Tanzania, and Burkina Faso – would cross the US$25 mark by 2022. This implies that reprioritization or other ways of generating additional fiscal space for health will be needed to make a significant dent in resource mobilization in some of the other countries if the US$25 barrier is to be crossed anytime soon.

Figure 8: Projected growth in per capita public spending on health, 2018-2023



Source: Authors' calculation based on data from IMF (2018) and WHO (2017).

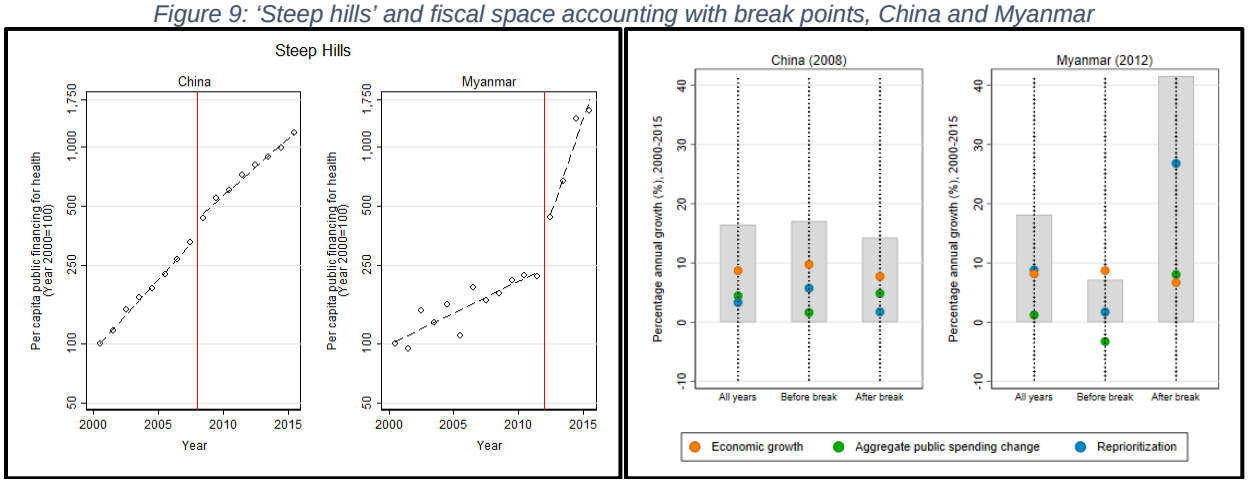
Additional analysis of country-specific trends in per capita public financing on health reveal six distinct patterns of growth, based on the speed of growth before and after the statistically determined structural break over 2000-2015. Following Pritchett's (2000) terminology, countries are classified based on these six patterns into: *steep hills*, *hills*, *plateaus*, *mountains*, *plains*, and *accelerators*.[18]

Steep Hills: This group included 36 countries that had average growth rates higher than 5 percent per year both before and after their breakpoints. Several LIC SSA countries are in this group, including DRC, Mali, Sierra Leone, and Rwanda. The fast growth rates in this subset of countries has occurred from a very low base in levels, with average per capita public spending on health being less than US$5 per capita in 2000. This group also included 12 high-income OECD countries including Estonia, France, and Hungary. Several EAP countries were also prominent 'steep hill' countries. Figure 9 shows the trends in two EAP countries in this group, China and Myanmar. Myanmar's per capita public spending on health increased by more than 15-fold, whereas China's grew 12-fold over 2000-2015. Both are among the five countries with the highest increases globally. These increases are greater than the corresponding increases in the economies of the two countries. China's GDP per capita grew more than 3.5 times over this period, whereas Myanmar's more than tripled (Figure 9). The income elasticity of public spending

[18] The full list of 151 countries in terms of where they fall on the "Pritchett Landscape" is in Annex II.

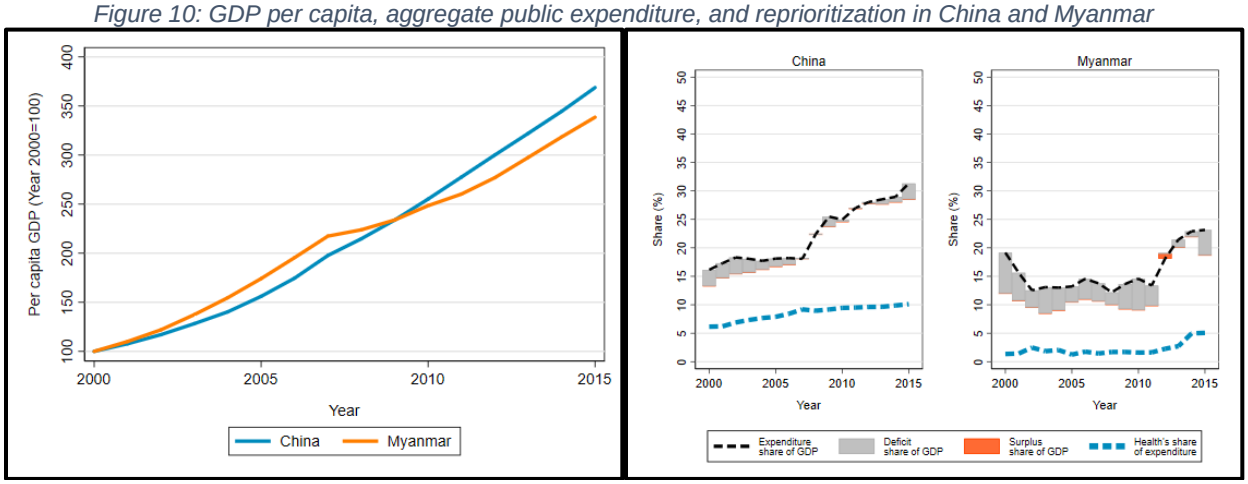
on health was far greater than unity in both countries. In China, the remainder of the increase in public financing for health came from a doubling of aggregate public expenditures from 16 percent of GDP to over 30 percent of GDP due to a rise aggregate public revenues, as well as from a sustained reprioritization of health's share in aggregate public expenditures. During the period, China introduced two health insurance schemes: the New Rural Cooperative Scheme in 2003 and the Urban Resident Medical Insurance in 2007. The break in 2008 coincides with the adoption of the New Health Reform Plan that resulted in substantial increases in central government funding. Specifically, the program invested in improving the infrastructure of public hospitals, introduced provider payment reforms, and established the National Essential Medicines Policy to ensure availability and affordability of essential drugs at primary care facilities (WHO 2015). The composition of public financing moved toward more financing from SHI contributions in relation to domestic government revenues. In aggregate, in China, almost half of the increase in realized fiscal space for health was a result of economic growth, with the remainder coming from increases in both aggregate public expenditures and in reprioritization of health. The break in Myanmar coincided with the country's transition to a democracy beginning in 2011. Further in 2012, the Social Security Law was passed as a measure to expand coverage and reduce OOP spending. In Myanmar, roughly equal shares came from a combination of reprioritization and economic growth. Little of the increase in realized fiscal space for health came from changes in aggregate public expenditures. The composition of public financing remained largely domestic government revenue financing, despite increases in development assistance.

Figure 9: 'Steep hills' and fiscal space accounting with break points, China and Myanmar



Source: Authors' calculation based on data from WHO (2017).

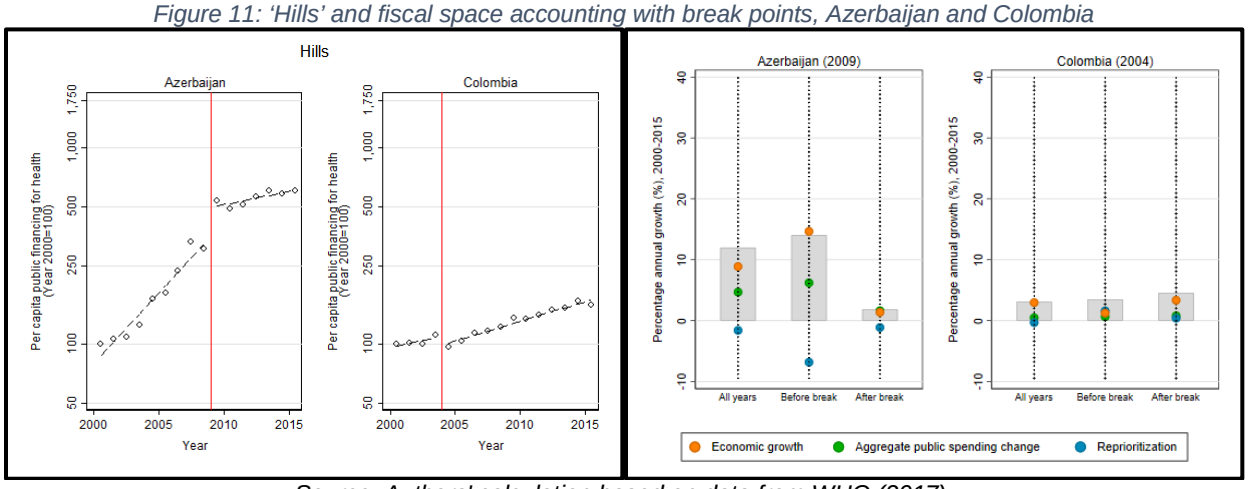
Figure 10: GDP per capita, aggregate public expenditure, and reprioritization in China and Myanmar



Source: Authors' calculation based on data from IMF (2018) and WHO (2017).

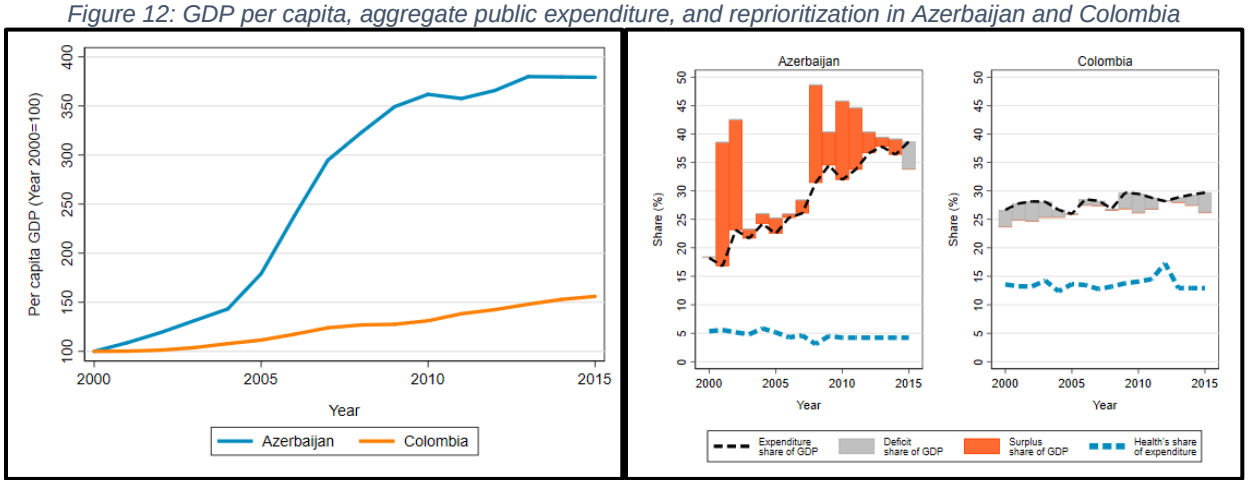
Hills: This group included 21 countries that had growth rates that exceeded 3 percent in each period before and after their breakpoints. This group represents countries that were a lower-growth version of those in the 'steep hill' group. LMI and UMI countries in ECA and LAC are prominent among 'hill' countries. For example, the group includes the Kyrgyz Republic, Moldova, Costa Rica, and Peru. Figure 11 shows trends for two countries in this group: Colombia and Azerbaijan. In Colombia, public financing for health rose due to an increase in the size of the economy and an increase in aggregate public expenditures (Figure 12), with changes in reprioritization for health apparently being used as a mechanism to smooth trends. The break in 2004 coincides with the commodity price boom that resulted in significantly higher oil and mining exports. Moreover, in the same year the government introduced a fiscal rule to reduce the public-sector deficit below 2.5 percent of GDP. Colombia is one of the few countries where the composition of public financing changed due to a decline in domestic government revenue financing and rise in SHI contributions. In Azerbaijan, increases in realized fiscal space for health due to economic growth. Deficit-financed increases in aggregate public expenditures were wiped out by declining priority given to health. Azerbaijan experienced a break in 2009-2010 resulting from a slowing down of the economy and a decline in aggregate public expenditures. In real per capita terms, public spending on health in Azerbaijan was about six times higher in 2015 than in 2000, almost entirely due to increases in domestic government revenue financing.

Figure 11: 'Hills' and fiscal space accounting with break points, Azerbaijan and Colombia



Source: Authors' calculation based on data from WHO (2017).

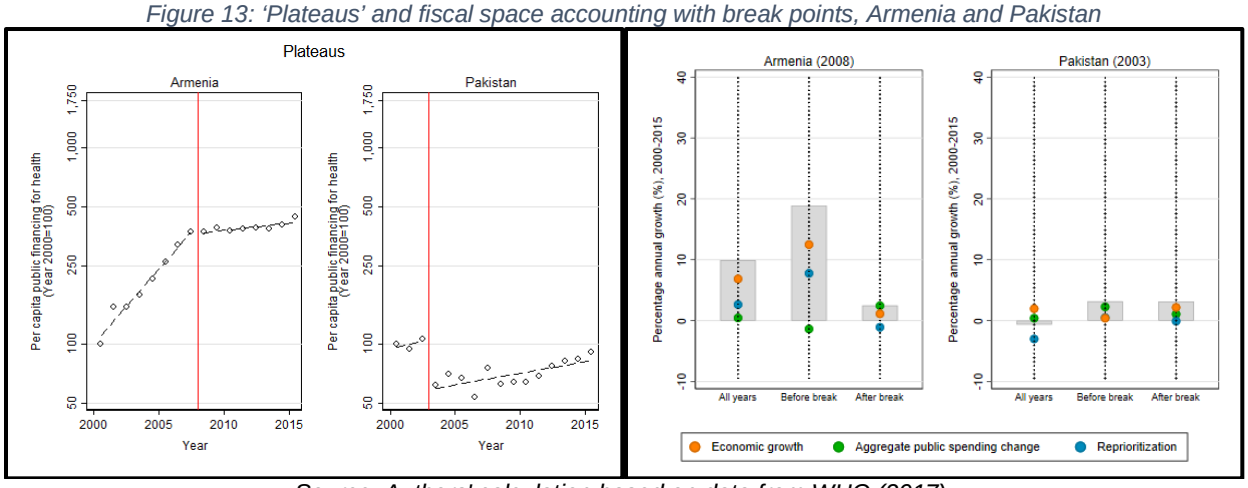
Figure 12: GDP per capita, aggregate public expenditure, and reprioritization in Azerbaijan and Colombia



Source: Authors' calculation based on data from IMF (2018) and WHO (2017).

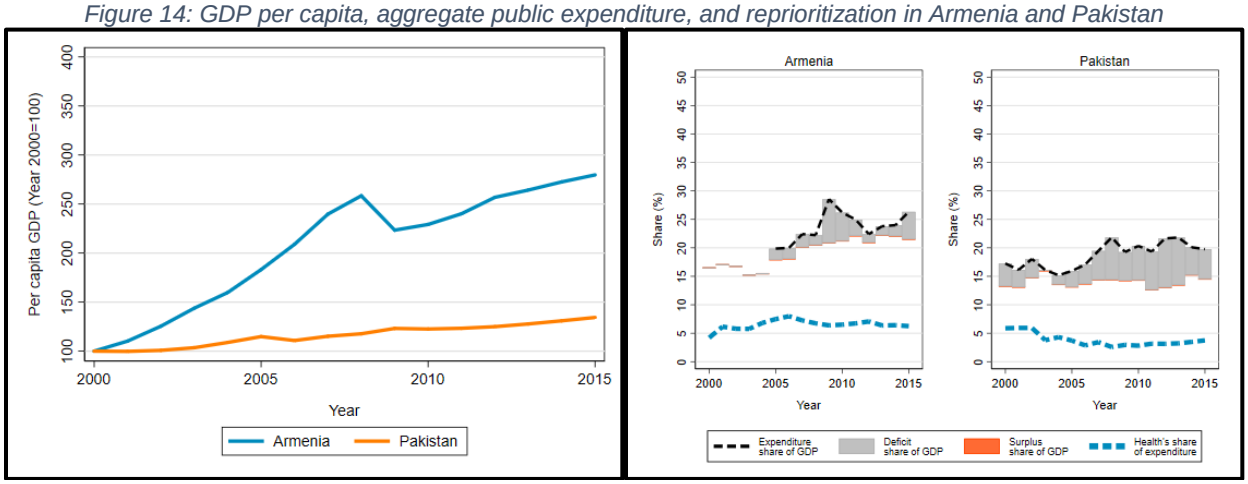
Plateaus: These 22 countries had growth rates higher than 3 percent before their structural break with slower, but still positive, growth thereafter. Half of all countries in this group were in the ECA region, including a slew of UMIs and HICs (for example, FYR Macedonia, Kazakhstan, and the Russian Federation). The group includes Armenia and Pakistan whose trends are shown in Figure 13. Armenia's breakpoint occurred in 2008, coinciding with the global financial crisis. Armenia was hard hit by the financial crisis in 2008 and saw its economy contract by 14 percent in 2009 largely due to a fall in metal prices (Armenia's main export) and a decline in remittances from the Russia (IMF 2010). While the health budget for 2009 was approved at a higher level than in 2008, due to the economic crisis actual funding was retained at the level of 2008. The economy has not been able to fully recover since then, resulting in modest increases in per capita financing for health. Pakistan's breakpoint appears to have occurred in 2003 following decentralization. Small gains from economic growth were reversed from a decline in prioritization for health.

Figure 13: 'Plateaus' and fiscal space accounting with break points, Armenia and Pakistan



Source: Authors' calculation based on data from WHO (2017).

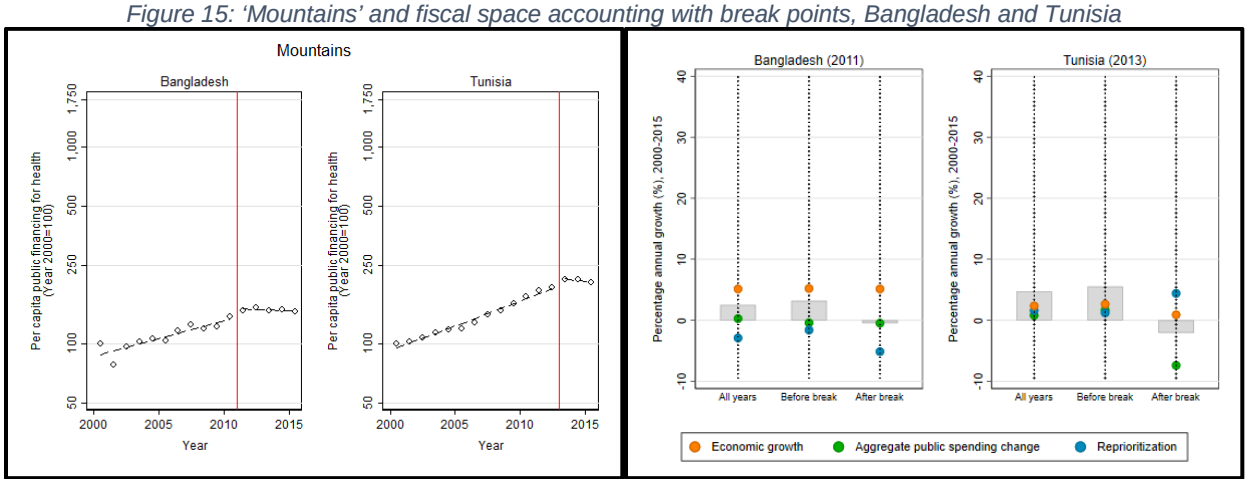
Figure 14: GDP per capita, aggregate public expenditure, and reprioritization in Armenia and Pakistan



Source: Authors' calculation based on data from IMF (2018) and WHO (2017).

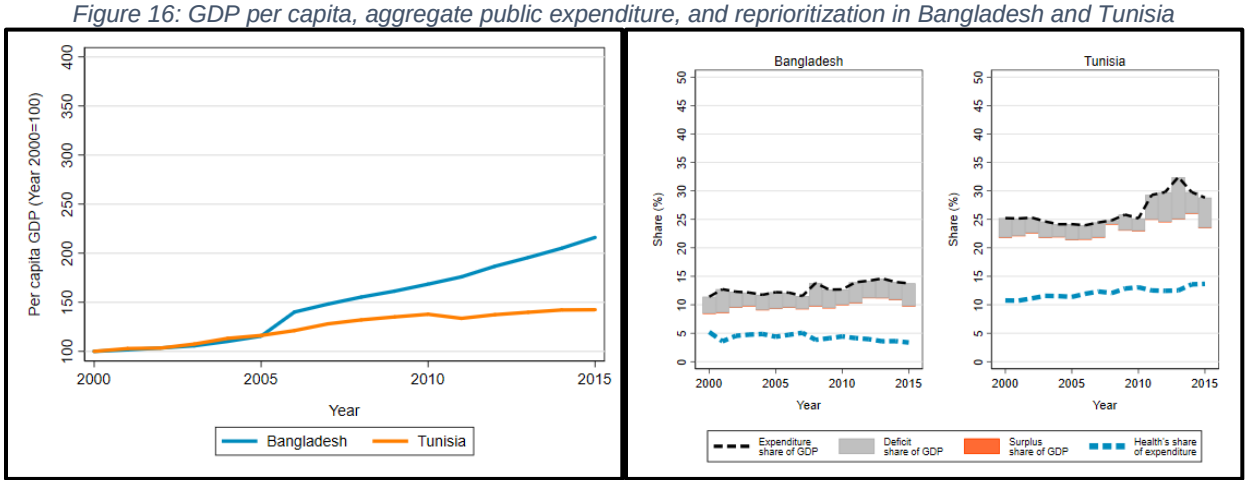
Mountains: These 17 countries had growth rates higher than 3 percent before their breakpoints but negative growths rates thereafter. Several LICs from SSA were in this group (including Ethiopia, Tanzania, and Uganda). Included in this group were several low- and middle-income countries such as Bangladesh and Tunisia, shown in Figure 15. In Bangladesh, trends in public financing for health appear to have been largely a result of declining prioritization for health beginning in 2011. Tunisia's breakpoint occurred in 2013, following a decline in aggregate public expenditures and revenues, with the composition of public financing moving toward a greater share from SHI contributions.

Figure 15: 'Mountains' and fiscal space accounting with break points, Bangladesh and Tunisia



Source: Authors' calculation based on data from WHO (2017).

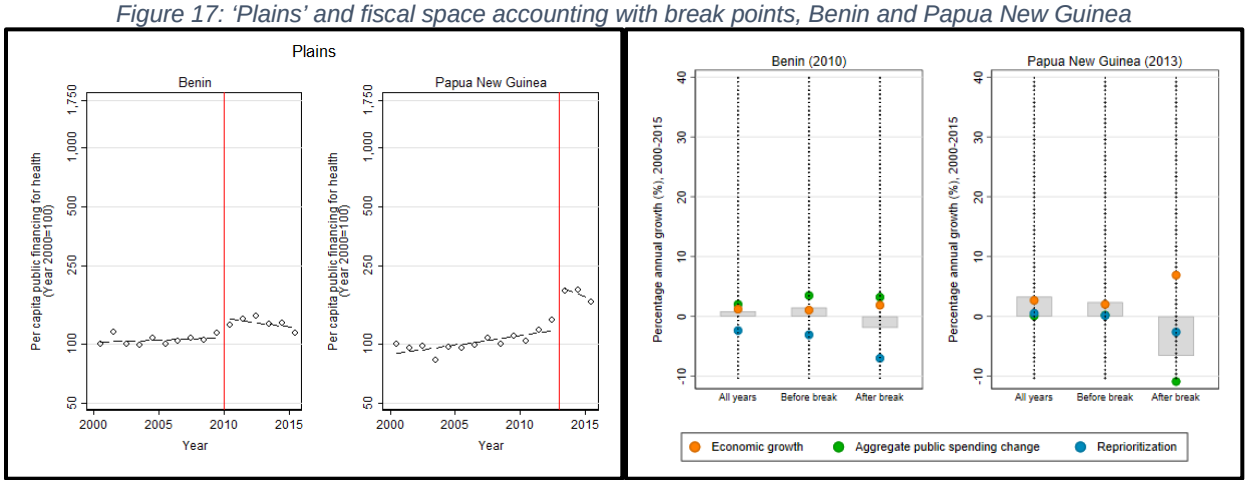
Figure 16: GDP per capita, aggregate public expenditure, and reprioritization in Bangladesh and Tunisia



Source: Authors' calculation based on data from IMF (2018) and WHO (2017).

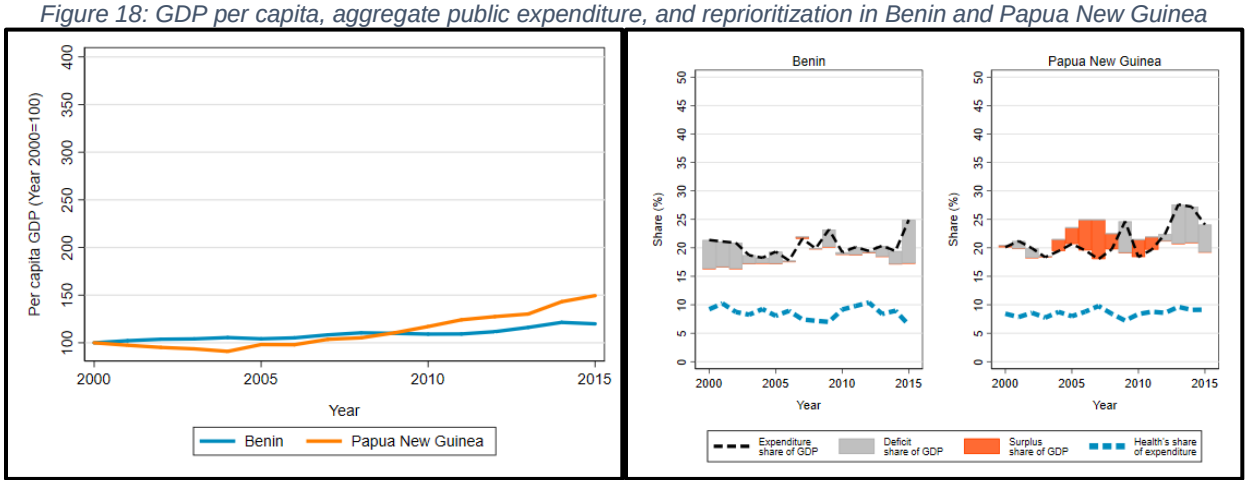
Plains: These 23 countries had growth rates less than 3 percent both before and after their structural breakpoint. This group includes several LICs from the SSA region. Countries in this group include Benin and Papua New Guinea as shown in Figure 17. In Papua New Guinea, despite strong economic growth especially after the break in 2012-2013, declines in aggregate public expenditures/revenues and priority for health eroded fiscal space for the sector. Benin did not experience much economic growth and has in recent years seen a decline in priority given to health.

Figure 17: 'Plains' and fiscal space accounting with break points, Benin and Papua New Guinea



Source: Authors' calculation based on data from WHO (2017).

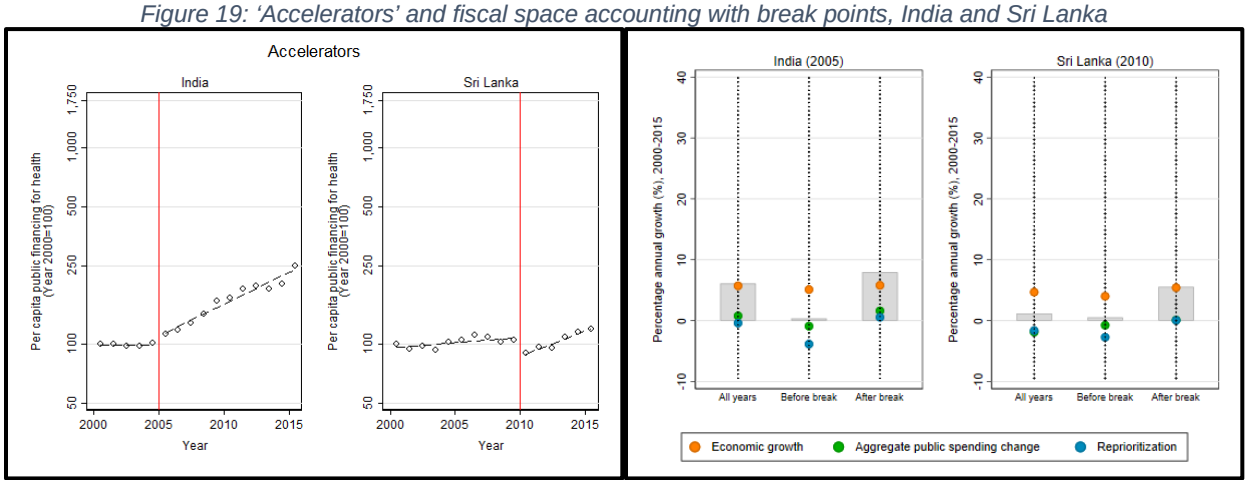
Figure 18: GDP per capita, aggregate public expenditure, and reprioritization in Benin and Papua New Guinea



Source: Authors' calculation based on data from IMF (2018) and WHO (2017).

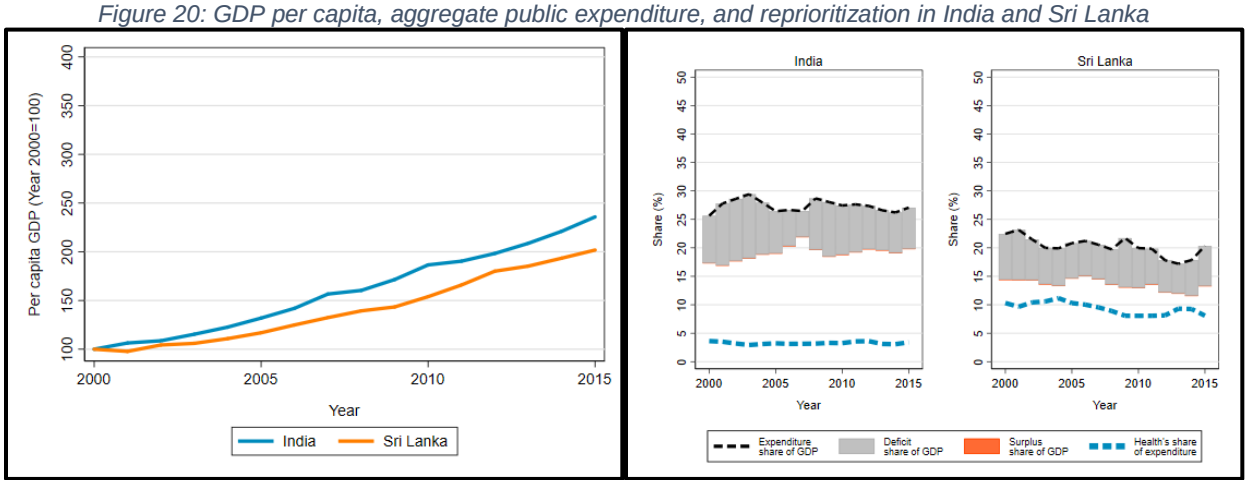
Accelerators: 32 countries in this group – comprising in large parts from the SSA and LAC regions -- had growth rates below 3 percent before their structural breaks but saw an increase in growth to over 3 percent thereafter. India and Sri Lanka are in this group (Figure 19). In India, political changes in 2004 triggered a change in the trajectory for public financing for health as the newly elected government introduced several social protection schemes including for health that were sustained over time; this, along with robust economic growth, improved domestic government revenue financing for health. Sri Lanka's acceleration appears to be a result of its peace dividend following cessation of civil strife in 2009.

Figure 19: 'Accelerators' and fiscal space accounting with break points, India and Sri Lanka



Source: Authors' calculation based on data from WHO (2017).

Figure 20: GDP per capita, aggregate public expenditure, and reprioritization in India and Sri Lanka

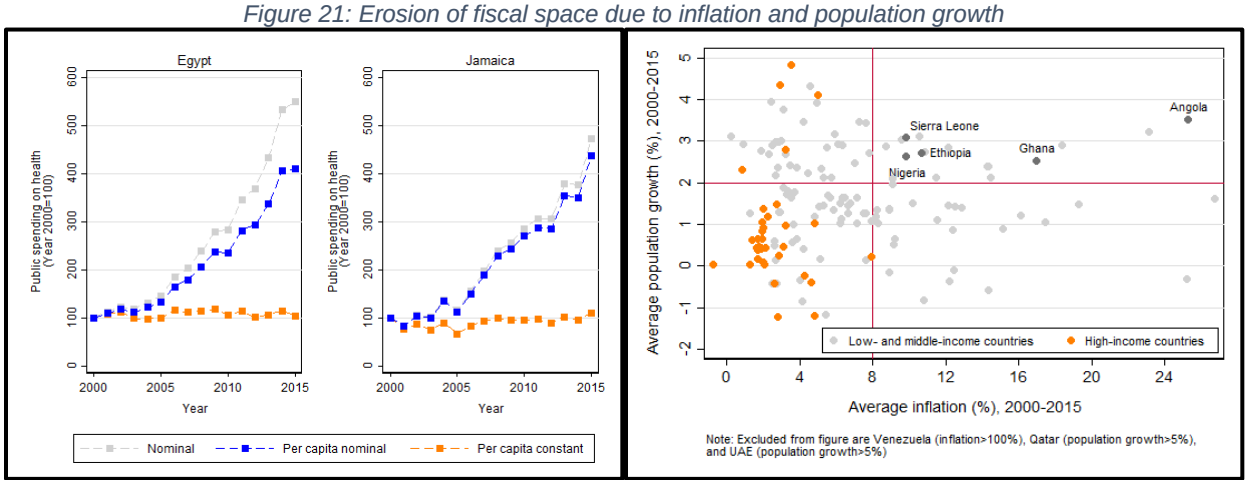


Source: Authors' calculation based on data from IMF (2018) and WHO (2017).

DISCUSSION

A couple of points are worth highlighting with regard to the analysis presented so far. Trend analysis underscores the importance of looking not only at year-on-year nominal changes but also at public financing for health both in real and per capita terms over time. What at first glance may look like generous year-on-year increases in nominal public financing for health may be less sanguine when inflation and population growth are accounted for, especially over longer time horizons. Ministries of health often focus on year-on-year nominal changes in aggregate budgetary outlays. However, a 10 percent annual nominal increase in health's budget will not lead to any changes in real per capita public financing for health if inflation is 8 percent and the population growth rate is 2 percent. This is demonstrated in trend comparisons of per capita public spending on health for countries such as Egypt and Jamaica. Both countries saw nominal increases in aggregate and per capita terms but real per capita expenditures for health remained largely unchanged over 2000-2015 (Figure 21). In both cases, the erosive impact of inflation is notable. Several low- and middle-income countries – for example, Angola, Ethiopia, Ghana, Nigeria, and Sierra Leone – are particularly vulnerable to 'fiscal space erosion' given that they had annual inflation rates exceeding 8 percent and annual population growth rates greater than 2 percent.

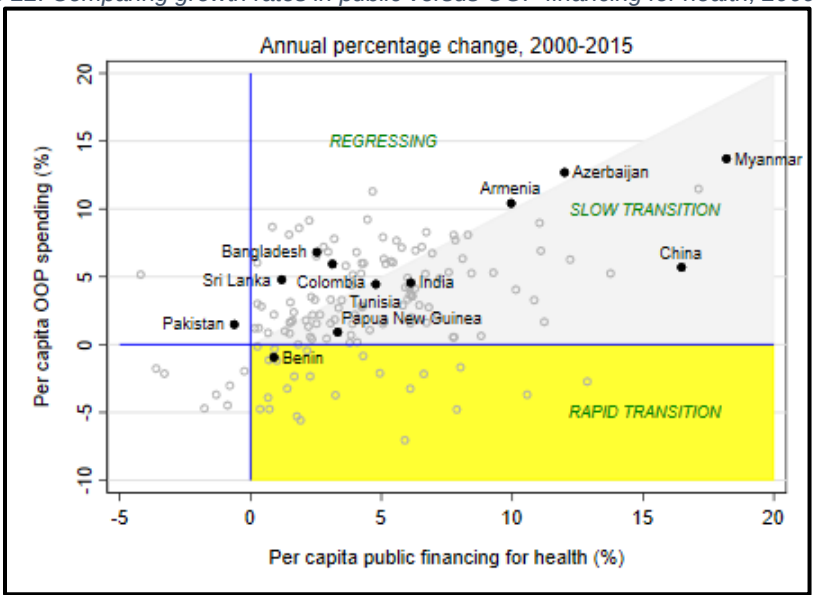
Figure 21: Erosion of fiscal space due to inflation and population growth



Source: Authors' calculation based on data from WB (2018) and WHO (2017).

One way to assess the impact of increases in public financing for health on a country's health financing transition is to benchmark against OOP spending, as shown in Figure 22 (Fan and Savedoff, 2014). Countries where public financing for health is growing at a rate faster than OOP financing are making progress on their health financing transition: rapidly where public financing is growing and OOP financing is declining; less so where public and OOP financing are growing but the former is growing at a higher rate than the latter. In other countries -- such as in Armenia, Bangladesh, and Pakistan -- OOP spending is growing at a rate faster than increases in public financing for health. This implies that OOP financing has been crowding out public financing in these countries and that they are moving backward in their health financing transitions.

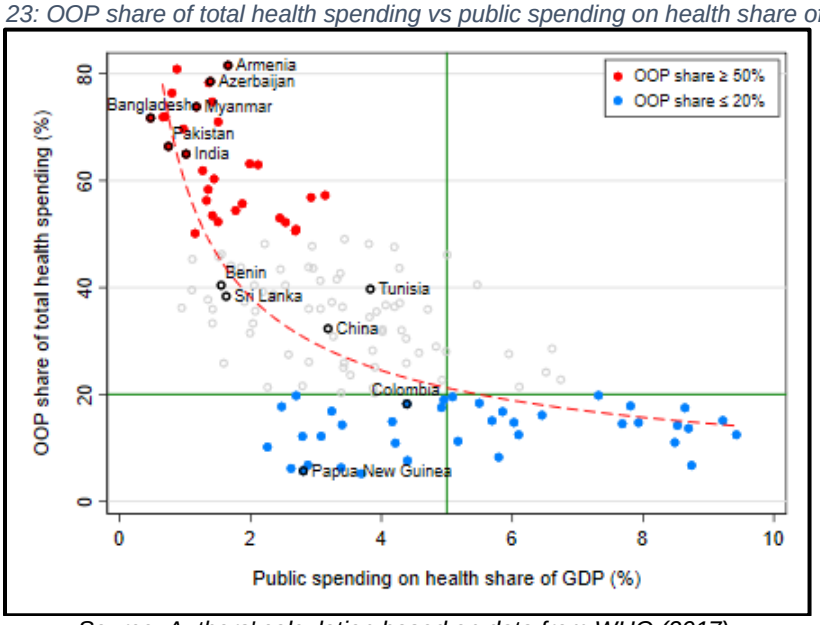
Figure 22: Comparing growth rates in public versus OOP financing for health, 2000-2015



Source: Authors' calculation based on data from WHO (2017).

Strong institutions and a conducive macro-fiscal environment -- including low levels of poverty, unemployment, and high levels of labor market formality – are key for improving both the service coverage and financial protection dimensions of UHC. This is because countries that have reduced OOP spending have generally done so by significantly increasing public financing for health using general government revenue sources (Figure 23). OOP spending is strongly negatively correlated with the extent of public financing. Although there are notable deviations from this trend, most countries that have OOP spending shares less than 20 percent are those where public financing for health is 5 percent or higher as share of GDP. This is however not to say that any increase in public financing effectively replaces OOP spending. Indeed, while increased public financing may reduce OOP spending per episode of care, in aggregate, increased public spending may also result in an increase in OOP spending because the elimination of financial barriers to care results in increased utilization. This has happened in the past in China and several other countries (see Hu et al., 2008; Li et al., 2012; Long et al., 2013; Hoang et al., 2015).

Figure 23: OOP share of total health spending vs public spending on health share of GDP



Source: Authors' calculation based on data from WHO (2017).

In conceptualizing fiscal space specifically for the health sector, it is important to note that we are not advocating for any specific socially optimal normative level or share of public financing for health across countries, even though there are numerous references in the literature that do so.[19] Although in some cases in the paper we highlight global benchmarks to note deviations from norms, we do not recommend the use of such benchmarks in informing country-specific policy dialogue on health financing given the complexities in identifying what an optimal level or share of public financing for health ought to be given the enormous diversity in country contexts. In addition, the idea is not just for countries to attain specific benchmark targets but more so to ensure that lack of adequate public financing is not a bottleneck to making progress toward both the service coverage and financial protection dimensions of UHC. Notably, countries should ensure a smooth and predictable trajectory for public spending on health in real per capita terms, not just in nominal aggregate terms. This would make it easier for policymakers to plan, budget, and proactively take corrective action if an adverse situation is expected. In doing so, one of the objectives of reprioritization would then also be to attain some degree of smoothing in real per capita public spending trends, at least to the extent that fluctuations in such trends are not reflecting changes in health-related needs.

Although beyond the scope of this paper, the way in which public resources are raised and used is an equally important consideration for fiscal space for health, both from efficiency and equity perspectives. Regressive and excessive taxation may negate some of the positive effects of public financing for health. Inefficient and inequitable spending can and does serve as a signaling mechanism by which future policy choices related to fiscal space may be affected, such as influencing reprioritization of health by ministries of finance and planning. Too often ministries of health are unable to effectively absorb public funds (either due to poor planning or due to exogenous public financial management constraints). This, in turn, sends the wrong signal to

[19] As mentioned earlier, there are arguments in the literature for public financing for health to be at least 5% of GDP. Others have estimated a minimum public spending on health of US$86 per capita; the Abuja Declaration called for SSA countries to set aside 15% of all public expenditures for health; see Jowett et al (2016) for additional discussions on why there is no "magic number" that countries should strive towards for financing targets.

budget-holding ministries who perceive poor absorption of funds as an indication that the health sector is not underfinanced.

CONCLUSION

The importance of public financing for UHC implies that the issue of fiscal space is now front and center in the policy dialogue around health financing. One way to measure realizations of fiscal space for health across countries is to look at changes in the levels of public financing for health in real per capita terms over time, keeping in mind that how spending is allocated is just as important as the amount of financing. Simply because a country has managed to increase levels of public financing does not automatically imply that those increases in resources were necessary and have been used in ways to yield corresponding gains in service coverage and financial protection. With this caveat, it is also important to underscore the role of factors such as population growth and inflation in eroding realized fiscal space. The focus in the paper is thus on changes in public financing for health in real per capita terms and not on other metrics such as public financing for health as share of GDP or as share of aggregate public expenditures which are sometimes (often erroneously) used as proxies for fiscal space for health. One key point of note from the landscaping exercise summarized in the paper is the diversity of growth trajectories across countries, especially the volatility in trends over time. The implications are clear: capturing public financing with a single growth rate is not the best metric to characterize country experiences, many of which are punctuated by episodes wherein trends are flat or have varying degrees of growth rates (both positive or negative).

In the paper, we demonstrate how increases in public financing for health can be decomposed into three primary macro-fiscal constituents -- economic growth, changes in aggregate public spending, and reprioritization for health – exploiting a macroeconomic identity that captures the relationship between these variables. The retrospective data-driven approach discussed in this paper can help countries better understand where observed realizations in fiscal space for health have come from and illustrates both the additive and potential ‘cancelling out’ effects that each of the three primary pillars in the decomposition can have on each other. This is to reiterate the point made earlier that there are no guarantees that the sources of fiscal space for health will, taken together, necessarily lead to increases in public financing for health. The implication for policy makers is that a holistic understanding of their country’s macro-fiscal situation is critical to understanding how they have arrived at where they are today.

Although country context matters, the importance of economic growth for public financing for health underscores the critical need to situate, integrate, leverage, and pro-actively manage health financing reforms within a country’s macro-fiscal context. For example, it is critical for UHC entitlements to be explicit and commensurate not only with service delivery capacity, but also to be situated realistically within a country’s overall public financing envelope. This would avoid introduction of new systemic problems that can manifest themselves in the form of implicit rationing of health services, provider arrears due to public under-financing, abuse of provider payment mechanisms to game the system, and unwanted forms of OOP cost-shifting to beneficiaries. In countries where conducive macroeconomics will potentially yield healthy projected increases in public financing for health, the focus should be on planning and finding ways to absorb these additional funds to maximum effect.

In other countries with less adequate macro-fiscal prospects, the focus would need to be on increasing health’s share of aggregate public spending or on finding additional sources of revenues, including from efficiency gains, if the levels of current public outlays for health are to be sustained. If this is not feasible, findings ways in which the limited public resources are targeted toward their most cost-effective and equitable uses would be necessary.

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ANNEX I: COUNTRIES CLASSIFIED BY 2015 WB INCOME STATUS AND REGION

Low- and Middle-Income									*High-Income*				
N	Low	*Region*	*N*	Lower middle	*Region*	*N*	Upper middle	*Region*	*N*	Non-OECD	*Region*	*N*	OECD	*Region*
1	Afghanistan	SAR	1	Armenia	ECA	1	Albania	ECA	1	Bahrain	MNA	1	Australia	EAP
2	Benin	SSA	2	Bangladesh	SAR	2	Algeria	MNA	2	Croatia	ECA	2	Austria	ECA
3	Burkina Faso	SSA	3	Bhutan	SAR	3	Angola	SSA	3	Cyprus	ECA	3	Belgium	ECA
4	Burundi	SSA	4	Bolivia	LAC	4	Argentina	LAC	4	Kuwait	MNA	4	Canada	NAM
5	Central African Republic	SSA	5	Cambodia	EAP	5	Azerbaijan	ECA	5	Latvia	ECA	5	Chile	LAC
6	Chad	SSA	6	Cameroon	SSA	6	Belarus	ECA	6	Lithuania	ECA	6	Czech Republic	ECA
7	Comoros	SSA	7	Congo, Rep.	SSA	7	Bosnia and Herzegovina	ECA	7	Oman	MNA	7	Denmark	ECA
8	Congo, Dem. Rep.	SSA	8	Cote d'Ivoire	SSA	8	Botswana	SSA	8	Qatar	MNA	8	Estonia	ECA
9	Eritrea	SSA	9	Djibouti	MNA	9	Brazil	LAC	9	Saudi Arabia	MNA	9	Finland	ECA
10	Ethiopia	SSA	10	Egypt, Arab Rep.	MNA	10	Bulgaria	ECA	10	Singapore	EAP	10	France	ECA
11	Gambia, The	SSA	11	El Salvador	LAC	11	China	EAP	11	Trinidad and Tob.	LAC	11	Germany	ECA
12	Guinea	SSA	12	Eswatini	SSA	12	Colombia	LAC	12	UAE	MNA	12	Hungary	ECA
13	Guinea-Bissau	SSA	13	Ghana	SSA	13	Costa Rica	LAC	13	Uruguay	LAC	13	Italy	ECA
14	Haiti	LAC	14	Guatemala	LAC	14	Dominican Republic	LAC				14	Japan	EAP
15	Liberia	SSA	15	Honduras	LAC	15	Ecuador	LAC				15	Korea, Rep.	EAP
16	Madagascar	SSA	16	India	SAR	16	Equatorial Guinea	SSA				16	Netherlands	ECA
17	Malawi	SSA	17	Indonesia	EAP	17	Fiji	EAP				17	New Zealand	EAP
18	Mali	SSA	18	Kenya	SSA	18	Gabon	SSA				18	Norway	ECA
19	Mozambique	SSA	19	Kyrgyz Republic	ECA	19	Georgia	ECA				19	Portugal	ECA
20	Nepal	SAR	20	Lao PDR	EAP	20	Guyana	LAC				20	Slovak Republic	ECA
21	Niger	SSA	21	Lesotho	SSA	21	Iran, Islamic Rep.	MNA				21	Slovenia	ECA
22	Rwanda	SSA	22	Mauritania	SSA	22	Iraq	MNA				22	Spain	ECA
23	Senegal	SSA	23	Moldova	ECA	23	Jamaica	LAC				23	Sweden	ECA
24	Sierra Leone	SSA	24	Mongolia	EAP	24	Jordan	MNA				24	United Kingdom	ECA
25	Tanzania	SSA	25	Morocco	MNA	25	Kazakhstan	ECA				25	United States	NAM
26	Togo	SSA	26	Myanmar	EAP	26	Lebanon	MNA						
27	Uganda	SSA	27	Nicaragua	LAC	27	Libya	MNA						
			28	Nigeria	SSA	28	Macedonia, FYR	ECA						
			29	Pakistan	SAR	29	Malaysia	EAP						
			30	Papua New Guinea	EAP	30	Mauritius	SSA						
			31	Philippines	EAP	31	Mexico	LAC						
			32	Sri Lanka	SAR	32	Montenegro	ECA						
			33	Sudan	SSA	33	Namibia	SSA						
			34	Syrian Arab Republic	MNA	34	Panama	LAC						
			35	Tajikistan	ECA	35	Paraguay	LAC						
			36	Timor-Leste	EAP	36	Peru	LAC						
			37	Tunisia	MNA	37	Romania	ECA						
			38	Ukraine	ECA	38	Russian Federation	ECA						
			39	Uzbekistan	ECA	39	Serbia	ECA						
			40	Vietnam	EAP	40	South Africa	SSA						
			41	Yemen, Rep.	MNA	41	Thailand	EAP						
			42	Zambia	SSA	42	Turkey	ECA						
						43	Turkmenistan	ECA						
						44	Venezuela, RB	LAC						

Note: SSA: Sub-Saharan Africa; LAC: Latin America & Caribbean; SAR: South Asia Region; ECA: Europe & Central Asia; EAP: East Asia & Pacific; MNA: Middle East & North Africa; NAM: North America Region

ANNEX II: COUNTRIES CLASSIFIED BY 'PRITCHETT LANDSCAPE'

Steep Hills	*Hills*	*Plateaus*	*Mountains*	*Plains*	*Accelerators*
Afghanistan	Albania	Armenia	Angola	Benin	Algeria
Austria	Azerbaijan	Australia	Bangladesh	Botswana	Argentina
Belgium	Bolivia	Belarus	Burundi	Brazil	Bahrain
Bosnia and Herzegovina	Bulgaria	Burkina Faso	Croatia	Central African Republic	Bhutan
Cambodia	Cameroon	Denmark	Ethiopia	Canada	Cote d'Ivoire
China	Chile	Finland	Indonesia	Chad	Fiji
Czech Republic	Colombia	Gambia	Italy	Comoros	Ghana
Congo, Dem. Rep.	Congo, Rep.	Honduras	Jordan	Cyprus	Guinea
Dominican Republic	Costa Rica	Kazakhstan	Senegal	Egypt, Arab Rep.	Guinea-Bissau
Ecuador	Djibouti	Kuwait	Serbia	El Salvador	Guyana
Equatorial Guinea	Korea, Rep.	Latvia	Sudan	Eritrea	India
Estonia	Kyrgyz Rep.	Libya	Syrian Arab Republic	Gabon	Kenya
France	Lao PDR	Lithuania	Tanzania	Germany	Lebanon
Georgia	Liberia	Macedonia, FYR	Tunisia	Guatemala	Lesotho
Hungary	Mauritius	Malawi	Uganda	Haiti	Madagascar
Iran, Islamic Rep.	Moldova	Montenegro	Ukraine	Jamaica	Mongolia
Iraq	Mozambique	New Zealand	Vietnam	Japan	Namibia
Malaysia	Nepal	Pakistan		Niger	Nicaragua
Mali	Peru	Russian Federation		Papua New Guinea	Nigeria
Mauritania	Qatar	Swaziland		Portugal	Oman
Mexico	Thailand	United Kingdom		United Arab Emirates	Panama
Morocco		United States		Venezuela, RB	Paraguay
Myanmar				Yemen, Rep.	Philippines
Netherlands					Saudi Arabia
Norway					Singapore
Romania					South Africa
Rwanda					Sri Lanka
Sierra Leone					Tajikistan
Slovak Republic					Turkmenistan
Slovenia					Uruguay
Spain					Uzbekistan
Sweden					Zambia
Timor-Leste					
Togo					
Trinidad and Tobago					
Turkey					

ANNEX III: ACCOUNTING FOR FISCAL SPACE FOR HEALTH, 2000-2015 (USING PUBLIC EXPENDITURE ON HEALTH BY SCHEME)

	Annual growth (%)		Fiscal space decomposition using expenditure by revenue, share from:			Fiscal space decomposition using expenditure by scheme, share from:		
	By revenue source	By scheme	*Economic growth (%)*	*Change in aggregate public expenditure (%)*	*Reprioritization for health (%)*	*Economic growth (%)*	*Change in aggregate public expenditure (%)*	*Reprioritization for health (%)*
Low- and middle-income	***5.0***	***5.0***	***56***	***25***	***17***	***58***	***26***	***16***
LIC	4.6	4.6	37	42	19	41	45	14
LMI	5.1	5.0	67	24	10	67	23	10
UMI	5.2	5.2	60	19	23	60	19	22
SSA	4.8	4.7	46	31	21	47	32	21
SAR	3.9	3.9	69	23	10	106	22	-28
MNA	1.4	1.4	50	36	14	53	37	10
EAP	7.2	7.2	69	25	6	69	25	6
ECA	7.5	7.5	64	9	27	63	10	27
LAC	4.2	4.2	50	43	7	49	43	8
High-income	***3.1***	***3.5***	***48***	***19***	***29***	***45***	***18***	***36***
Non-OECD	4.0	4.0	50	25	25	49	24	27
OECD	2.6	3.2	50	19	35	43	15	42
All	***4.5***	***4.6***	***57***	***26***	***20***	***56***	***25***	***19***

ANNEX IV: ACCOUNTING FOR FISCAL SPACE FOR HEALTH, 2000-2015 (USING CONSTANT 2010 PPP INTERNATIONAL $)

	Annual growth (%)		Fiscal space decomposition using constant LCU, share from:			Fiscal space decomposition using constant PPP, share from:		
	Using constant LCU	Using PPP	*Economic growth (%)*	*Change in aggregate public expenditure (%)*	*Reprioritization for health (%)*	*Economic growth (%)*	*Change in aggregate public expenditure (%)*	*Reprioritization for health (%)*
Low- and middle-income	***5.0***	***5.0***	***56***	***25***	***17***	58	26	16
LIC	4.6	4.6	37	42	19	42	45	13
LMI	5.1	5.1	67	24	10	66	23	11
UMI	5.2	5.2	60	19	23	59	18	22
SSA	4.8	4.8	46	31	21	47	31	22
SAR	3.9	3.9	69	23	10	103	19	-22
MNA	1.4	1.4	50	36	14	52	36	11
EAP	7.2	7.2	69	25	6	69	25	6
ECA	7.5	7.5	64	9	27	63	10	27
LAC	4.2	4.2	50	43	7	49	43	7
High-income	***3.1***	***3.1***	***48***	***19***	***29***	49	21	31
Non-OECD	4.0	4.0	50	25	25	49	24	26
OECD	2.6	2.6	50	19	35	48	18	34
All	***4.5***	***4.5***	***57***	***26***	***20***	57	25	19

As countries undergo their health financing transitions, moving away from external and out-of-pocket (OOP) financing toward domestically sourced public financing, the issue of fiscal space – that is, of finding ways to increase public financing in an efficient, equitable, and sustainable manner -- is front and center in the policy dialogue around universal health coverage (UHC). Although how money is expended is just as critical as the overall resource envelope, we analyze changes in per capita public financing for health in real terms, a proxy for realized fiscal space, within and across 151 countries over time. This allows for an assessment not just of trends in public financing for health but also of contributions from three macro-fiscal drivers -- economic growth, changes in aggregate public spending, and reprioritization for health -- exploiting a macroeconomic identity that captures the relationship between these factors. Analysis of data from 2000 to 2015 shows per capita public financing for health in low- and middle-income countries increased by 5.0 percent per year on average: up from US$60 (2.2 percent of GDP) in 2000 to US$117 (2.8 percent of gross domestic product [GDP]) in 2015. Some of the largest increases were in countries in the Europe and Central Asia (ECA) and East Asia and Pacific (EAP) regions. At 3.1 percent per year, annual growth in public financing for health was lower among high-income countries, albeit from a much higher baseline in 2000. Increases in on-budget external financing comprised most of the changes among low-income countries, whereas domestic government revenues dominated changes in composition of public financing among lower- and upper-middle-income countries. Public financing increased at a faster rate than OOP sources for health in most regions except for South Asia. Although there are important country-specific differences, it is notable that more than half of the increase in public financing for health was due to economic growth alone. For the remainder of the increase, aggregate public spending contributed more than reprioritization across low and lower-middle-income countries, whereas the reverse was true in high-income countries. One key point of note from the landscaping exercise summarized in the paper is the diversity of growth trajectories across countries and, especially, the volatility in trends over time. The implications are clear: capturing public financing with a single growth rate is not the best metric to characterize country experiences, many of which are punctuated by episodes wherein trends are flat or have varying degrees of growth rates (positive or negative). Although country context matters, the importance of economic growth for public financing for health underscores the critical need to situate, integrate, leverage, and proactively manage health financing reforms within a country's overall macro-fiscal context and to assess different pillars of fiscal space holistically.

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