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Fresh Money for Health? The (False?) Promise of “Innovative Financing” for Health in Malawi

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Abstract—Since 2013, the government of Malawi has been pursuing a number of health reforms, which include plans to increase domestic financing for health through “innovative financing.” As part of these reforms, Malawi has sought to raise additional tax revenue through existing and new sources with a view to earmarking the revenue generated to the health sector. In this article, a systematic approach to assessing feasibility and quantifying the amount of revenue that could be generated from potential sources is devised and applied. Specifically, the study applies the Delphi forecasting method to generate a qualitative assessment of the potential for raising additional tax revenues from existing and new sources, and the gross domestic product (GDP)-based effective tax rate forecasting method to quantify the amount of tax revenue that would be generated. The results show that an annual average of 0.30 USD, 0.46 USD, and 0.63 USD per capita could be generated from taxes on fuel and motor vehicle insurance over the period 2016/2017–2021/2022 under the low, medium, and high scenarios, respectively. However, the proposed tax reform has not been officially adopted despite wide consultations and generation of empirical evidence on the revenue potential. The study concludes is that revenue generation potential of innovative financing for health mechanisms in Malawi is limited, and calls for efforts to expand fiscal space for health to focus on efficiency-enhancing measures, including strengthening of governance and public financial management.

INTRODUCTION

The Sustainable Development Goal (SDG) on health calls for countries to “achieve universal health coverage, including
financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all” (p. 20). However, mobilizing the required level of pooled financing to achieve the health-related SDG is a persistent challenge for countries worldwide. In Organization for Economic Cooperation and Development countries, health care expenditures have been growing rapidly over the past 30–40 years, and this has increased pressure on public budgets. On the other hand, government health spending in low- and lower-middle-income countries must be at least 5% of gross domestic product (GDP) to achieve sufficient progress toward universal health coverage (UHC). However, this is not the case in several low- and lower-middle-income countries, particularly in sub-Saharan Africa (excluding high-income countries) where government health spending as a share of GDP is estimated at 2.3% on average.

Existing evidence further suggests that government and/or public resources are key to achieving effective coverage and financial protection compared to other sources of financing. Therefore, it is critically important for governments in low- and lower-middle-income countries to increase funding to their health sectors. However, government spending on health in some low- and lower-middle-income countries is below the expected average for countries with similar GDP per capita. Consequently, development assistance for health is the major source of health financing in these countries even though there has been a decline in development assistance for health as a share of total health expenditure in recent years. Furthermore, a large share of health financing in developing countries needs to be pooled in order to reduce reliance on out-of-pocket payments and improve access to health care.

Given the above, several low- and lower-middle-income countries and development partners have either explored or implemented “innovative financing” mechanisms aimed at (1) raising additional funding for health through unconventional official development assistance channels, (2) enhancing the efficiency of financial flows, and (3) linking financial flows to results. At an international level, examples of innovative financing mechanisms are the international financing facility for immunization (where funds are raised from international capital markets), airline ticket voluntary solidarity contributions, advance market commitments, and debt buy-downs. Options for innovative financing at the national (domestic) level include levies on financial transactions, diaspora bonds, and public health taxes on tobacco, alcohol, and unhealthy foods (sugar, salt).

Although termed “innovative,” some of these financing options are already being used extensively. For example, about 54 countries worldwide earmark tax revenues from goods that can negatively affect health, such as tobacco, alcohol, and sugar-sweetened foods, aimed at promoting health and increasing funding for the health sector. For other potential financing sources, there is less experience to date. Moreover, most studies that have explored the revenue potential of public health taxes or other financing options do not quantify the actual amount of revenue that could be raised. The few studies that have done so show that the amount of revenue that can be generated from such taxes is generally low. There are a few exceptions, such as the Philippines, where revenue that has been mobilized for the health sector from taxes on tobacco and alcohol is significant.

To date, most of the studies that have reviewed the revenue potential of public health or “sin” taxes have applied qualitative assessment tools that rank the likelihood of generating additional tax revenue as limited, moderate, or high. Other studies use regional norms for domestic tax revenue as a share of GDP to justify an increase in overall government revenues (and eventually public spending on health) if the existing share is below the norm. Furthermore, some studies advocate for an increase in tobacco taxes if the amount of tax as a share of the retail price for a 20-cigarette pack of the most sold brand in a country is below the 75% margin recommended by the World Health Organization. To guide policy on the revenue potential of public health taxes, some authors have called for development of tools and approaches to quantify potential revenues and health and social benefits. Notably, the fiscal space for health analytical framework by Tandon and Cashin that has been applied in several studies does not provide ways for quantifying the actual amount of revenue that can be generated from domestic sources including public health taxes.

In Malawi, the health sector is currently not able to fully deliver on key policy commitments of access and affordability as enshrined in the country’s constitution, which seeks to “provide adequate health care, commensurate with the health needs of Malawian society and international standards of health care” (p. 4). Malawi still has a huge disease burden that can be attributed to low coverage and access to essential health services, though the quality is poor. For instance, the average national coverage across six key maternal and child health indicators is 53%, and there are also inequalities in service coverage by income status and geographical setting. Huge gaps in service coverage and poor quality of services are symptomatic of a poorly financed and/or inefficient health system.

Malawi’s per capita total expenditure on health of 39.2 USD in 2014–2015 is significantly below the average of 98 USD in sub-Saharan Africa (excluding South Africa). Health financing in Malawi is predominantly donor dependent, and
over the period 2009–2010 to 2014–2015, development partners contributed an annual average of 27 USD per capita compared to the government’s annual average contribution of 9 USD per capita during the same period. This implies that Malawi’s government per capita expenditure on health is less than a quarter of the country’s total per capita health expenditure. Reliance on external development partners to finance Malawi’s health programs is unsustainable and exposes the country to internal and external shocks. For example, public spending on health as a share of GDP declined from 4% in 2002–2003 to 2% in 2008–2009 due to resource diversion by external development partners. Further, revelations of financial mismanagement in 2013 contributed to a drop in donor expenditure as a proportion of total health expenditure from 63% in 2013–2014 to 54% in 2014–2015. Furthermore, about 62% of the external funding in Malawi is spent on HIV/AIDS, malaria, and reproductive health, which leaves other components of the health system significantly underfunded.

In an attempt to increase domestic financing to the health sector, efficiency, service availability, and equity, Malawi has been pursuing health financing and organizational reforms since 2013. The health reform process includes four areas, namely: (1) establishment of a social health insurance scheme; (2) creating a health fund financed from earmarked tax revenues; (3) decentralizing district- and central hospital–level service provision; and (4) reviewing institutional arrangements between the Malawi government and faith-based health providers (Christian Health Association of Malawi).

This study focuses on the second area of this reform agenda and seeks to generate policy-relevant evidence for the health financing reform process in Malawi. At the same time, the study contributes to the international literature on innovative financing for health, particularly potential for earmarked tax revenues for health, by providing a systematic approach to assessing feasibility and quantifying the amount of tax revenue that could be generated from potential sources.

**METHODS AND DATA**

This study was conducted over a period of one and a half years (between January 2016 and June 2017) and incorporates qualitative and quantitative approaches to assess the potential of raising additional tax revenue through existing and new sources with a view to eventually earmarking the revenue generated to the health sector. The two-step review methodology uses (1) the Delphi (qualitative) forecasting technique to assess the feasibility of generating additional tax revenue based on expert opinion and document reviews and (2) GDP-based effective tax rate (ETR) quantitative forecasting method to quantify the amount of revenue that could be generated from existing and new sources. The use of qualitative forecasting techniques in conjunction with quantitative methods is important because judgment from experts and informed stakeholders is an important part of forecasting. Nonetheless, qualitative forecasting methods are often complemented by quantitative forecasting methods to overcome differences in opinions by experts and inability of qualitative methods to guard against spurious correlations and assertions about causal relationships.

**Delphi Process—Eliciting Experts’ Judgment on Revenue Potential of Proposed Taxes**

Developed in the 1940s, the Delphi technique is a group communication process that facilitates “interaction between the researcher and a group of identified experts on a specified topic,” and this process allows the group as a whole to deal with a complex problem. The Delphi technique has been used widely to elicit expert opinion and reach agreement on practical issues in a number of disciplines, particularly when informed judgment is required before taking action. The main areas where the Delphi technique has been applied are program implementation, needs assessment, planning, policy determination, priority setting and resource allocation, and forecasting future events. Similar to the approach taken in our study, Gordon uses the Delphi technique to forecast economic variables and to determine rationales for judgments in the United States.

In our study, a total of 34 individuals (Delphi experts) were purposively selected from nine government ministries and departments and interviewed to gather their perceptions on the feasibility of generating additional revenues from 12 areas that were proposed for taxation by the Ministry of Health. The 12 areas are (1) fuel; (2) tobacco products; (3) alcohol; (4) mobile phone talk time; (5) corporate businesses; (6) value-added tax; (7) extractive industries; (8) moneys received from loans applied through parliament; (9) donations received from developing partners, foundations, etc.; (10) annual earnings paid by employees and employers to private health insurance schemes; (11) moneys earned by investments made by or on behalf of the proposed Malawi Health Fund; and (12) motor vehicle insurance. The 34 experts were selected on the basis of (1) experience and vast knowledge on the subject matter, (2) requisite qualification, (3) representation, and (4) availability. Representation of individuals from each of the nine government ministries and departments was designed to provide diversified and informed opinions.

To ensure diversity in knowledge and informed opinion, the 34 experts who participated in the study included four top
management decision makers, 13 directors and deputy directors, 16 professional/technical staff members (economists, finance managers, market and policy analysts, tax examiners, and statisticians), and a senior university lecturer in economics. The nine institutions were selected in relation to the 12 areas proposed for taxation. This includes the Ministry of Health; Ministry of Finance, Economic Planning and Development (MoFEPD); Ministry of Natural Resources, Energy and Mining; Extractive Industries Transparency Initiative Secretariat; Malawi Revenue Authority; Reserve Bank of Malawi (RBM); Tobacco Control Commission; National Statistical Office; and University of Malawi. Four key bilateral and multilateral development partners operating in the health sector in Malawi also participated in the study.

Two rounds of review were conducted, and the respondents were asked to provide judgment on the revenue potential of the proposed taxes and to explain the reasons behind their judgment. Information was collected by using an interview guide that contained questions on five themes, namely, revenue generation capacity, health promotion potential, political feasibility, consumer acceptability, and perceived effects on businesses and trade. The interview guide was administered face to face, and participants were asked to assess all of the proposed areas for taxation on each of the five themes by using a three-point Likert scale (1 = low, 2 = medium, 3 = high). In the second round, information from the first round was summarized and returned to the experts for validation. Verbal responses were transcribed and analyzed deductively as prescribed by Zhang and Wildemuth. In particular, similar text segments, sentences, and paragraphs within and across the interviews were identified and assigned to each of the five themes and then analyzed deductively. Some of the actual expressions/views of interviewees were retained to provide a rich description of the results. Information from the experts was also validated through five stakeholder meetings and workshops that were organized during the study and review of published and unpublished literature on Malawi. Triangulating evidence from regional and international studies was also used to gauge the quality of the evidence in line with Malawi’s country context and best practice.

Based on information from the qualitative assessment (expert opinion, stakeholder meetings and workshops, and document reviews), ten of the 12 areas that had been targeted for taxation were excluded from the quantitative analysis. The qualitative assessment also reviewed findings from a report by the International Monetary Fund, *Strategy for Comprehensive Tax Reform to Raise Revenue and Promote Growth in Malawi*, which also showed that most of the proposed revenue sources were not viable. Similarly, a number of experts and participants at the stakeholder meetings and workshops that were conducted during the study were of the view that it would be difficult to increase taxes or levies in the already existing areas without causing adverse effects on production, trade, and consumption. Consequently, consensus was to identify and reallocate revenue from existing taxes or levies without increasing tax rates.

### ETR Forecasting Process—Quantifying Expected Revenues

Having excluded ten of the initially targeted areas through qualitative analysis, the ETR forecasting method was then used to forecast the (1) amount of tax revenue from existing fuel levies that could be earmarked to the health sector and (2) additional amount of tax revenue that could be generated and earmarked to the health sector by introducing a new tax on motor vehicle insurance. The forecasting period is 2016–2017 to 2021–2022, and the ETR was calculated as tax revenue (TR) divided by tax base (TB), which can be rearranged as $\text{TR} = \text{TB} \times \text{ETR}$. Therefore, to forecast TR, the starting point was to specify (1) TB and (2) ETR. For the ETR, the study relied on a report by the Ministry of Health and Abt Associates that proposes three different tax rates for each of the identified areas as reflected in Table 1. Application of different tax rates also made it possible to gauge for sensitivity and/or variations in the TB and expected revenue with each change in the tax rate.

The fuel storage levy was originally set up to finance strategic fuel reserve storage facilities, and the rural electrification levy was established to finance electricity supply projects under the Malawi Rural Electrification Program (MAREP). Thus, the rural electrification levy is referred to as the MAREP levy. To forecast potential revenues from the fuel levies (MAREP and storage), raw data covering the period 2011–2012 to 2014–2015 on volumes of fuel (petrol,
diesel, and paraffin) imports and consumption, actual amount of revenue from the MAREP and storage levies, and pump prices per liter of fuel were collected and analyzed. Assuming that the TB is conditional on other variables (e.g., GDP, imports, consumption), the TB for fuel is demand for fuel in liters. Henceforth, the projections for the period 2016–2017 to 2021–2022 were made using the following formula:

\[ \text{TB}_t = \text{TB}_{t-1} \times \left( \frac{rY_t}{rY_{t-1}} \right) + 100\% \]

where TB is the demand for fuel in the current year; TB, is the demand for fuel in the previous year; \( rY_t \) is real GDP in the current year; and \( rY_{t-1} \) is real GDP in the previous year. The basic assumption is that the demand increase for fuel is proportional to the growth in national income.

For motor vehicle insurance, the TB is gross motor vehicle insurance premiums because an increase in revenue is due to an increase in quantity demanded, price level, or both. Therefore, raw data on the number of insured vehicles (both third-party and comprehensive coverage), total value of the gross motor vehicle insurance premiums, and prices of third-party and comprehensive coverage were collected for the period 2011–2012 to 2014–2015 and analyzed. The projection for the period 2016–2017 to 2021–2022 was based on the following formula:

\[ \text{TB}_t = \text{TB}_{t-1} \times \left( \frac{nY_t}{nY_{t-1}} \right) + 100\% \]

where TB, is the demand for motor vehicle insurance in the current year; \( nY \) is the nominal GDP; and subscripts \( t \) and \( t-1 \) represent the current year and previous year, respectively.

Real GDP (\( Y_t \)) and nominal GDP (\( nY_t \)) were projected by using the World Bank’s macroeconomic projections and simulations model. The real GDP growth for Malawi was projected at 2.5% in 2016, 4.2% in 2017, and 4.5% in 2018.\(^2\) For conversions from Malawian Kwacha to US dollars, the rate was as follows: 1 USD = MK 721.07 as of October 12, 2016. This is a mid-point rate obtained from the Reserve Bank of Malawi (http://www.rbm.mw/Statistics/MajorRates).

RESULTS

Results from the qualitative assessment show wide consultations and knowledge among various stakeholders on the health reform process in Malawi, particularly domestic resource mobilization through additional tax revenue from existing and new sources. However, the qualitative assessment showed that only two of the 12 proposed taxes were likely to be feasible based on the evaluation criteria that were applied during the study (Table 2). These are fuel and motor vehicle insurance. This is contrary to other countries where taxes on alcohol and tobacco products are often used to promote healthy lifestyles as well as to generate additional revenues for health.\(^6\) For Malawi, one of the key arguments is that consumption of alcohol is low and cannot provide a sustainable tax base. These views are corroborated by the World Health Organization,\(^34\) which shows that consumption of pure alcohol for people aged 15 years and older estimated at about 2.5 liters per person in Malawi is significantly lower than the African average of six liters per person and the global average of 6.2 liters per person. Furthermore, as observed by officials from MoFEPD, RBM, and the Malawi Revenue Authority, the existing tax on alcohol is already high and smuggling of alcohol products from neighboring countries to Malawi is high. Therefore, raising the tax on alcohol could further increase smuggling and reduce overall tax revenue.

With regards to smoking, document reviews show that the prevalence of smoking any tobacco product among adults aged 15 years or older in Malawi of 26.6% for males and 6.6% for females is slightly higher than the African average of 24.2% for males and 2.4% for females but lower than the global average of 36.1% for males and 6.8% for females.\(^34\) Furthermore, total tax as a percentage of the retail price of a 20-cigarette pack of the most sold brand of cigarettes in Malawi of 21% is far below the recommended minimum of 75%.\(^19\) However, the retail prices of cigarettes in Malawi are comparable to those in Mozambique and because Malawi shares a long border with Mozambique, any significant difference in the retail prices of cigarettes between the two countries would encourage smuggling.\(^31\)

It is also worth noting that domestic production of cigarettes in Malawi is very low and most of the tax revenue is from imported cigarettes (Figure 1). Thus, an increase in tobacco taxation could lead to reduced consumption and importation of cigarettes and ultimately a reduction in revenue. This would address the public health concern on reduced tobacco consumption but would lead to reduced revenues for the whole economy and the health sector in particular. The other option could be the introduction of a health levy on tobacco production.\(^35\) However, this option was deemed to be highly undesirable given that tobacco (commonly referred to as “green gold” in Malawi) is the country’s key export commodity, accounting for almost half of the country’s total merchandise exports.\(^36\) Further, tobacco production is already highly taxed and politicized, and smuggling of tobacco to neighboring countries is rife.
Currently, there are more than eight levies and taxes on tobacco production targeting both domestic use and imports. Any tax/levy on tobacco [whether on production or domestic consumption] ultimately affected tobacco farmers. (Official from the Tobacco Control Commission)

Tobacco is a very serious matter. It has been the life of our economy, our life! This country [Malawi] has thrived on tobacco for more than a century now. My government promotes tobacco production and marketing as a crop of strategic importance. It is a crop that economically empowers our smallholder farmers in rural areas. And we are determined to continue promoting value addition [in tobacco] to increase our export earnings. (President of Malawi during the official launch of the 2016 Tobacco Marketing Season)

We will ensure that there is no tobacco slips through the borders to Zambia or Mozambique as has been the case years back. We will confiscate all tobacco being smuggled and that will remain the property of the government. (Chief executive officer of the Tobacco Control Commission at the official launch of the 2016 Tobacco Marketing Season)

| Proposed Sources of Revenue | Revenue Generation Potential | Health Promotion Potential | Political Feasibility | Consumer Acceptability | Effects on Businesses and Trade | Concluding Remarks |
|-----------------------------|------------------------------|----------------------------|-----------------------|------------------------|-------------------------------|------------------|
| Fuel                        | High                         | High                       | Low                   | Low                    | Negative                      | Generate revenue forecasts with focus on revenue potential of replacing existing fuel levies— Storage and MAREP |
|                             |                              |                            |                       |                        |                               |                  |
|                             | Fuel is already heavily taxed—A total of eight duties and levies are charged on each liter of fuel. As at 4th November 2016, each liter of fuel (petrol, diesel, paraffin) attracted duties and levies amounting to an average of K208.94 per liter. This is equivalent to 27% of the pump price of each liter of fuel. |
|                             |                              |                            |                       |                        |                               |                  |
|                             |                              |                            |                       |                        |                               |                  |
| Third party and comprehensive motor vehicle insurance | High                         | High                       | High                  | High                   | Positive                      | Generate revenue forecasts |
|                             | A new tax on third party and comprehensive motor vehicle insurance would have the twin goal of generating additional revenues for the health sector while at the same time reducing the costs incurred by the health sector in addressing deaths, injuries, and disabilities due to road traffic accidents. |
|                             |                              |                            |                       |                        |                               |                  |
|                             |                              |                            |                       |                        |                               |                  |
|                             | Malawi’s road traffic fatality rate of 35 deaths per 100,000 population is above the average for Africa (26.6 deaths per 100,000 population), and twice the global average of 17.4 deaths per 100,000 population. |
|                             |                              |                            |                       |                        |                               |                  |
|                             |                              |                            |                       |                        |                               |                  |

**TABLE 2.** Expert Opinions on Proposed Sources of Generating Additional Tax Revenue
For fuel, it was noted that introducing an additional levy would lead to an increase in the pump price of fuel and cause an inflationary pressure that would affect the entire economy. This is because the pump price for a liter of fuel (petrol, diesel, and paraffin) in Malawi already contains eight levies and duties, which constitute 27% of the price of each liter of fuel. Thus, rather than introducing a new levy on fuel, consensus from the qualitative assessment was to use existing levies. Specifically, it was felt that revenues from the existing storage levy could be channeled to the health sector and the storage levy could be retitled as a medical levy. In addition, it was suggested that a share of future revenues from the existing MAREP levy could be channeled to the health sector. The justification for replacing the storage levy was that all of the planned fuel reserve storage units had already been built in the country and the optimal national fuel storage capacity had been reached. On the other hand, justification for targeting a share of future revenue from the existing MAREP levy was due to the low absorptive capacity for funds that had been collected since introduction of the levy. However, an official from the Ministry of Natural Resources, Energy and Mining had some reservations on the proposal to allocate part of the future revenue from the MAREP levy to the health sector:

Replacing the storage levy with a medical levy could be more feasible but not the MAREP levy. The Rural Electrification Act No. 21 of 2004 provides for the establishment of a Rural Electrification Fund. (Senior government official, Department of Energy)

The proposal to introduce a new tax or levy on motor vehicle insurance premiums made by private insurance companies offering this service was widely welcomed. The understanding was that additional revenue could be raised for the health sector while at the same time reducing the costs incurred by the health sector in addressing road traffic–related deaths, injuries, and disabilities. Document reviews show that Malawi has a road traffic fatality rate of 35 deaths per 100,000 population, which is above the African regional average of 26.6 deaths per 100,000 population and twice the global average of 17.4 deaths per 100,000 population. As shown in Figure 2, the total number of people seriously injured and killed in road traffic accidents increased by 93% between 2012–2013 and 2013–2014 and the value of insurance claims due to injuries and death increased by 70%. In other words, the monetary value of vehicle insurance claims for injuries and deaths as a percentage of the total monetary value of motor vehicle insurance claims rose significantly from 5% in 2008 to 50% in 2014 (Figure 2).

It is not clear, however, whether these claims are genuine or whether the victims were attended to at public and private hospitals. This is because there is no information on reimbursement of medical costs by insurance companies for road traffic related injuries. This suggests minimal or no impact of the increasing road traffic insurance revenues and claims (Figure 2) on financing and alleviation of road traffic related costs at public and private hospitals.

The amount of money that could be generated from introducing a motor vehicle insurance levy and reallocating some of the existing levies on fuel (storage and MAREP) to the

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**FIGURE 1.** Domestic Production and Import Quantities for Cigarettes in Malawi. This figure was created using data from the following source: National Statistics Office.
health sector is projected in Figure 3. Assuming that all three levies are introduced, 5.4 million USD would be raised on average per year over the period 2016–2017 to 2021–2022 under the low scenario (Figure 3). Under the high scenario, the amount of revenue generated would be 11.6 million USD on average per year over the period 2016–2017 to 2021–2022. As a share of the 2014–2015 government health expenditure (GHE), the amount of revenue that could be generated from the three levies over the period 2016–2017 to 2021–2022 would be 5%, 7%, and 10% on average per year under the low, medium, and high scenarios, respectively. In per capita terms, this is equivalent to 0.30 USD, 0.46 USD, and 0.63 USD on average per year under the low, medium, and high scenarios, respectively (Figure 3).

**DISCUSSION**

The results highlight Malawi’s plan to expand domestic financing to the health sector through innovative financing mechanisms, particularly earmarked tax revenues. The proposed financing reform is part of the broader health reforms that are outlined in a performance contract between the president of Malawi and the Minister of health that was signed in 2015. In preparation for the adoption process, the Ministry of Health has consulted widely with several government ministries, including the Ministry of Finance, which is the permanent chair of the health financing technical working group. The Ministry of Finance also requested for this study to be undertaken and participated in all five consultative meetings and workshops that were held during the study.
Despite this support, most of the areas that were proposed for taxation were assessed as infeasible, and revenue forecasts were only conducted on two fuel levies and motor vehicle insurance premiums.

Assuming a high scenario, the results show that taxes on fuel and motor vehicle insurance would generate an average of 11.6 million USD per annum, which is equivalent to 10% of the 2014–2015 GGHE or 0.63 USD per capita per year over the period 2016–2017 to 2021–2022. This money is low and far from covering financing gaps in the health sector in Malawi. Nonetheless, this is relatively higher than Poland and Panama where tax revenues from tobacco that have been earmarked to the health sector as a percentage of the GGHE are estimated at 0.001% and 1.3%, respectively.\textsuperscript{14} On the contrary, earmarked tax revenues for health from tobacco and alcohol in the Philippines are nearly double the government’s health budget.\textsuperscript{16} But without a norm or minimum threshold on the size of the earmark relative to public expenditure on health or GDP, it is difficult to make a judgment on whether the potential revenues are high or low.\textsuperscript{14} It is also important to note that success in the Philippines can be attributed to strong annual economic growth of 6.3% between 2010 and 2016, gross national income per capita of 3,580 USD in 2016, increasing urbanization, a growing middle class, and a large and young population.\textsuperscript{35} There is also a high prevalence of tobacco smoking among adults and the youth in the Philippines, estimated at 40.3% and 5.1% for male and female adults (15 years), respectively, and 14.5% for youth (13–15 years).\textsuperscript{39}

Unlike the Philippines, capacity to raise additional tax revenue from existing and new sources in Malawi is low, and this could be attributed to the weak economy. For example, Malawi experienced weak and volatile economic growth between 1995 and 2015, with real per capita GDP growing at 1.5% on average, which is almost half the average of 2.7% in non-resource-rich sub-Saharan African countries over the same period.\textsuperscript{40} Malawi’s GDP per capita was only about 494 USD (in constant 2010 terms) in 2015.\textsuperscript{40} Furthermore, the fiscal deficit was about 4.3% of GDP and the total public debt was 52.1% of GDP in 2016.\textsuperscript{5} As a result, prospects for income-driven growth in health spending in Malawi are constrained. Compounding the problem is that the health sector is already highly prioritized by the government, with observed government health spending much higher than the average for low income countries.\textsuperscript{9} However, the absolute amount of money available is very low in comparison to peer countries due to the low level of national income and per capita GDP.\textsuperscript{5} On the other hand, the proposed taxes on alcohol and tobacco had low revenue generation capacity due to the low domestic consumption of alcohol and tobacco products in Malawi and widespread smuggling of these products to and from neighboring countries.

Though presumably low, revenue that can be generated from taxes on fuel and motor vehicle insurance premiums could be used to fund a few priority areas in the health sector in Malawi and thereby complement government funding. Though this study does not focus on how the generated funds will be used or managed, this is a critical issue that should be considered in fiscal space for health analytical studies. For example, in Ghana and Estonia, tax revenues that have been earmarked to the health sector have been used to run national health insurance programs, and in Zimbabwe they have been used to address the HIV/AIDS epidemic.\textsuperscript{14} Likewise, Malawi could consider using the money generated from the proposed taxes to reduce the high burden of road traffic injuries and deaths in the country. This would be important because Malawi has the highest number of road traffic related deaths per 100,000 population in Africa and globally,\textsuperscript{37} but actions to combat this problem are insufficient.\textsuperscript{41}

The cost of road traffic injuries and deaths in low- and middle-income countries is estimated at 5% of GDP.\textsuperscript{37} This study found no evidence that motor vehicle insurance companies in Malawi are currently compensating the health system (public and private hospitals) for road traffic–related injuries and fatalities despite a rapid increase in the number and value of insurance claims of this nature. Other countries in Africa (e.g., Botswana, Namibia, and South Africa) have in place dedicated road accident funds that provide social security benefits to road traffic accident victims for medical and funeral expenses, loss of earnings, and loss of support.\textsuperscript{42–44}

Notwithstanding the above, earmarking tax revenues to certain budget lines or sectors is associated with potential negative consequences. This includes reduction in flexibility in allocating public finances, fragmentation of public financing within the health sector and between sectors, and the possibility that health budgets are reduced by the corresponding increase in funding from earmarked tax revenue.\textsuperscript{45,46} Furthermore, even when earmarked tax revenues for health are introduced, there can be huge delays in disbursing the mobilized revenues due to rigidities in public finance management systems.\textsuperscript{7,14,47} Thus, in addition to generating additional revenues for health through earmarked taxes, money can be created by improving efficiency in resource allocation and use, governance, and public finance management. This is important for Malawi because several studies have highlighted varying forms of inefficiencies in health financing and service delivery.\textsuperscript{5,14,23,48–50} On the other hand, it is also important for Malawi to align all proposals on earmarked tax revenues for health to the overall tax reform process given that the process of reviewing the overall tax system has been initiated.\textsuperscript{31}
The debate on earmarking is summed up by Cashin and others, who conclude that earmarking is highly context specific and depends on a country’s political priorities and budget process. Other researchers are of the view that earmarking is not inherently right or wrong because it depends on how overall government spending is adjusted to accommodate changes. Our observation, therefore, is that the validity of arguments on earmarking depends on practical implementation experiences. In the case of Malawi, the proposal to generate additional tax revenue and to earmark the acquired revenue to the health sector has not yet been officially adopted despite wide consultations among government ministries and agencies and health and finance authorities working together. Conversely, adoption and implementation of the medical levy in Zambia was proposed and led by the Ministry of Finance with very minimal consultation with the Ministry of Health and other government ministries and stakeholders. Thus, this study finds no evidence that amicable consultations between finance and health authorities at the time that an earmark is proposed are likely to lead to its adoption.

The key value of this study is that it devises and applies a systematic approach to assessing feasibility and quantifying the amount of tax revenue that could be generated from potential sources. Several studies on the subject matter have focused on feasibility. Nonetheless, the main limitation of this study is that a budget redistribution analysis was not conducted. The study proposes reallocation of revenue from some of the existing fuel levies to the health sector to avert potential adverse effects if new taxes or tax rates on existing taxes are increased but these funds are already part of the national budget. Thus, this requires a comprehensive assessment of the national budget to ascertain the impact of the redistribution.

Secondly, the study assumes that all revenues that will be generated from the new tax on motor vehicle insurance will be allocated to the health sector. However, this might not be the case given that in other countries the revenue generated serves as an all-encompassing social security net for victims of motor vehicle accidents. Lastly, the study quantifies additional revenue that could be generated from potential sources but does not quantify social and public health benefits. Quantifying social and public health benefits is important because the proposed taxes are really meant to trigger behavioral change to improve lifestyles, decrease disease burden, and eventually reduce health care costs.

CONCLUSION

The study concludes that the revenue generation potential of innovative financing for health mechanisms in Malawi is limited. The study calls for efforts to expand fiscal space for health in Malawi to focus on efficiency enhancing measures, particularly governance and public financial management.

NOTES

[a] The national average of 53% was for the following indicators: children age 12–23 months fully vaccinated, pregnant women with four or more antenatal care visits, children with fever who sought treatment from a health facility/provider, households with at least one insecticide-treated net, pregnant women aged 15–49 who slept under an insecticide-treated net the previous night, and pregnant women age 15–49 who received three or more doses of Fansidar for intermittent preventive treatment of malaria during pregnancy.

[b] Estimates done by using the World Bank’s macroeconomic projections and simulations model.

[c] About MK 30 billion (44 million USD) has accumulated over the years, but progress on rural electrification has been slow.

[d] The study team visited Kamuzu Central Hospital, Likuni Hospital, and Luke Daeyoung Hospital in Lilongwe to obtain information on the number of accident victims attended to, average length of stay, treatment costs, and compensation by insurance companies, but this information was not readily available.

[e] Zambia implemented a medical levy between 2003 and 2013 aimed at raising additional revenue for the health sector. The medical levy was charged at a rate of 1% on gross interest earned by any person and partnership on all savings and deposit accounts, treasury bills or government bonds, and other similar financial instruments.
REFERENCES

1. United Nations. Transforming our world: The 2030 Agenda for sustainable development. [accessed 2018 Jan 6]. https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf.

2. van Elk R, Mot E, Franses PH Modelling health care expenditures: Overview of the literature and evidence from a panel time series model. [accessed 2007 Sep 7]. http://www.albacharia.ma/xmlui/bitstream/handle/123456789/31935/healthexpenditures.pdf?sequence=1.

3. Rebba V The long-term sustainability of European health care systems. 2014 [accessed 2017 Feb 6]. http://economia.unipd.it/sites/decon.unipd.it/files/20140191.pdf.

4. McIntyre D, Meheus F, Røttingen J-A. What level of domestic government health expenditure should we aspire to for universal health coverage? Health Econ Policy Law. 2017;12(2):125–137. doi:10.1017/S1744133116000414.

5. World Bank. Fiscal space for health in malawi and revenue potential of innovative financing. Washington (DC): World Bank; 2017.

6. Achoki T, Chansa C. Impact of funding modalities on maternal and child health intervention coverage in Zambia. Health Policy Tech. 2013;2(3):162–167. doi:10.1016/j.hpt.2013.05.006.

7. Cashin C, Bloom D, Sparkes S, Barroy H, Kutzin J, O’Dougherty S Aligning public financial management and health financing: sustaining progress toward universal health coverage. Geneva (Switzerland): World Health Organization; 2017. Report No. 9241512032.

8. Kutzin J. Why does public finance matter for UHC? Rabat (Morocco): World Health Organization 2016 [accessed 2017 Sep 7]. http://www.who.int/health_financing/events/JosephKutzin-why-does-public-finance-matter-for-uhc.pdf?ua=1.

9. Institute for Health Metrics and Evaluation. Disparities on the path to universal health coverage: findings from financing global health. Seattle (WA): IHME; 2017. Report No. 9780997646207.

10. Savedoff WD, De Ferranti D, Smith AL, Fan V. Political and economic aspects of the transition to universal health coverage. Lancet. 2012;380(9845):924–932. doi:10.1016/S0140-6736(12)61083-6.

11. Taskforce on Innovative International Financing for Health Systems. Raising and channelling funds: Working group 2 report. 2009 [accessed 2018 Feb 6]. https://www.who.int/health_financing/events/JosephKutzin-why-does-public-finance-matter-for-uhc.pdf?ua=1.

12. World Health Organization. Health systems financing: The path to universal coverage. Geneva (Switzerland): World Health Organization; 2010.

13. World Bank. Innovative finance for development solutions. Washington (DC): World Bank; 2009.

14. Cashin C, Sparkes S, Bloom D Earmarking for health: From theory to practice. Geneva (Switzerland): World Health Organization; 2017. Report No. 9241512202.

15. Barroy H, Sparkes S, Dale E. Assessing fiscal space for health expansion in low-and-middle income countries: A review of the evidence. Geneva (Switzerland): World Health Organization; 2016.

16. Kaiser K, Bredenkamp C, Iglesias R. Sin tax reform in the Philippines: transforming public finance, health, and governance for more inclusive development. Washington (DC): World Bank; 2016.

17. World Health Organization. WHO report on the global tobacco epidemic 2015: Raising taxes on tobacco. Geneva (Switzerland): World Health Organization; 2015. Report No. 9241509120.

18. Savedoff W, Alwang A. The single best health policy in the world: tobacco taxes. Washington (DC): Center for Global Development; 2015.

19. Government of Malawi. Constitution of the Republic of Malawi. [accessed 2018 Feb 8]. http://www.wipo.int/edocs/lawdocs/laws/en/mw/mw002en.pdf.

20. Ministry of Health [Malawi]. Malawi national heath accounts report for fiscal years 2012/13, 2013/14 and 2014/15. Lilongwe (Malawi): Ministry of Health; 2016.

21. World Bank. Malawi public expenditure review. Lilongwe (Malawi): Ministry of Health; 2016.

22. World Health Organization. WHO report on the global tobacco epidemic 2015: Raising taxes on tobacco. Geneva (Switzerland): World Health Organization; 2015. Report No. 9241509120.

23. Tandon A, Cashin C. Assessing public expenditure on health from a fiscal space perspective. Washington (DC): World Bank; 2010.

24. Ministry of Health, Abt Associates. A comprehensive review of literature on international and local experiences of health fund and proposed Malawi health fund. Lilongwe (Malawi): Ministry of Health; 2015.

25. Chia-Chien H, Sandford BA. The Delphi technique: Making sense of consensus. Pract Assess Res Eval. 2005;12(10):1–8.

26. Gordon TA Study of the use of the delphi method: A futures research technique for forecasting selected U.S. economic variables and determining rationales for judgments. 2005 [accessed 2016 Apr 6]. https://www.soa.org/Files/Research/Projects/DelphiReport-FinalVersion.pdf.

27. International Monetary Fund. Revenue and expenditure forecasting techniques for a PER spending: Annex 3. 2015 [accessed 2016 Aug 30]. http://www.cepal.org/sites/default/files/project/files/annex_3_revenue_and_expenditure_forecasting_methods_for_the_sector_per.pdf.
28. Sackman H. Delphi assessment: expert opinion, forecasting, and group process. Santa Monica (CA): Rand Corporation; 1974.
29. Yousuf MI. Using experts’ opinions through Delphi technique. Pract Assess Res Eval. 2007;12(4):1–8.
30. Zhang Y, Wildemuth BM. Qualitative analysis of content. In: Wildemuth BM, editor. Applications of social research methods to questions in information and library science. Westport (CT): Libraries Unlimited; 2009.
31. International Monetary Fund. Malawi: strategy for comprehensive tax reform to raise revenue and promote growth. Washington (DC): International Monetary Fund; 2016. Report No. 5864789.
32. Bova E Expenditure Forecasting and Elements of Expenditure Policy. 2013 [accessed 2016 Jun 1]. http://www.pftac.org/filemanager/files/Macro/L5.pdf.
33. International Monetary Fund. Malawi: First review under the extended credit facility arrangement. Washington (DC): International Monetary Fund; 2013. Report No. 13/119.
34. World Health Organization. World health statistics 2015. Geneva (Switzerland): World Health Organization; 2015. Report No. 9241564881.
35. Kardan A, Lievens T, Ngoma P, Humphrey E. Sustainable financing for HIV/AIDS in Malawi. Oxford (England): Oxford Policy Management; 2012.
36. World Bank. Malawi economic monitor: Absorbing shocks, building resilience. Washington (DC): World Bank; 2016.
37. World Health Organization. Global status report on road safety 2015. Geneva (Switzerland): World Health Organization; 2015. Report No. 9241565063.
38. World Bank. The World Bank in the Philippines. Washington (DC): World Bank; 2018 [accessed 2018 Apr 15]. http://www.worldbank.org/en/country/philippines/overview.
39. World Health Organization. WHO report on the global tobacco epidemic 2017: Monitoring tobacco use and prevention policies. Geneva (Switzerland): World Health Organization; 2017.
40. Record R, Kumar P, Kandoole P. From falling behind to catching up: a country economic memorandum for Malawi. Washington (DC): World Bank; 2017.
41. WHO supported road safety activities in Malawi. Geneva: World Health Organization. [accessed 2016 Aug 30]. http://www.who.int/violence_injury_prevention/road_traffic/countrywork/mwi/en/.
42. Government of the Republic of South Africa. Road accident fund regulations 2008. Pretoria (South Africa): Road Accident Fund; 2008.
43. Republic of Namibia. Motor vehicle accident fund act. Windhoek (Namibia): Motor Vehicle Accident Fund; 2007. Report No. 10 of 2007.
44. Government of Botswana. Motor vehicle accident fund regulations. Gaborone (Botswana): Motor Vehicle Accident Fund; 2008. Report No. 15 of 2007.
45. Appleby J, Boyle S. Blair’s billions: Where will he find the money for the NHS? Bmj. 2000;320(7238):865–867.
46. Doetinchem O. Hypothecation of tax revenue for health. Geneva (Switzerland): World Health Organization; 2010.
47. Meheus F, McIntyre D. Fiscal space for domestic funding of health and other social services. Health Econ Policy Law. 2017;12(2):159–177. doi:10.1017/S1744133116000438.
48. Novignon J, Nonvignon J. Fiscal space for health in sub-Saharan African countries: an efficiency approach. 2015 [accessed 2017 April 14]. https://mpra.ub.uni-muenchen.de/63015/1/MPRA_paper_63015.pdf.
49. Carlson C, Chirwa WC, Hall N, Cammack D. Study of health sector efficiency in Malawi. Lilongwe (Malawi): Ministry of Health; 2014.
50. Ministry of Health [Malawi]. Malawi national health accounts with subaccounts for HIV/AIDS, malaria, reproductive health, and child health for financial years 2009/10, 2010/11, and 2011/12. Lilongwe (Malawi): Ministry of Health; 2014.
51. Ministry of Finance and National Planning [Zambia]. Budget address. Lusaka (Zambia): Government Printers; 2003.