An Unconventional Way to Support Health Expenditure

Nizam, Ahmed Mehedi

21 April 2019

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Ahmed Mehedi Nizam
ahmed.mehedi.nizam@gmail.com

April 21, 2019

Abstract

Here, we propose a taxation scheme towards the implementation of universal health care under Beveridge model. In our proposed framework, a small amount of health tax is imposed on each and every non-cash transaction including transactions through debit and credit card, credit transfer, direct debit and cheque which is found to be solely sufficient to cover up entire health expenditure of a nation. We have shown empirically that a 1.84 USD levy on every non-cash transaction is enough to meet up the annual health expenditure in the CEMEA (Central Europe, Middle East and Africa) region. For Latin America (LA), Emerging Asia (EA), Mature Asia and the Pacific (MAP) and North America (NA) this value is found to be 4.51, 2.04, 15.93 and 21.07 USD respectively. Moreover, as the proposed levy is collectable electronically without any human intervention, no additional logistic support is required for the implementation of the scheme.

1 Introduction

Attaining universal health coverage through out the world by 2030 is one of the WHO's Sustainable Development Goals (SDG)[1] which aims to provide health care facilities to all the individuals of a nation without incurring formidable financial crisis. Although, SDGs are only proclaimed in 2015, health has always been a piece of great concern for humankind. The first attempt to ensure health care for the underprivileged through legislation was taken by the conservative Prussian statesman Otto Von Bismarck through Sickness Insurance Law of 1883. The above bill was intended to protect the German industrial workers against ill-health at an affordable cost. Under this law, the medical cost of German industrial workers were shared between the employers and employees. However, Bismarck's attempt to establish a welfare state was not confined only to the passage of Sickness Insurance Law. Accident Insurance Law of 1884 and Old Age and Disability Insurance Law of 1889 were passed with a view to implement a welfare state

and also to politically isolate the workers from joining many pro-worker, leftist, socialist alliances. Activities in Germany regarding health insurance infused huge interest in its european peers and David Lloyd George, the Liberal Chancellor of the Exchequer of the United Kingdom, after visiting Germany in 1908, vowed to establish a similar system in Britain. His attempt eventually resulted into the passage of The National Insurance Act 1911 which provided the British workers and their dependents the first contributory system of insurance against illness and unemployment [3]. Other european countries soon followed the trail of Germany and England and started building over their medical systems with a view to provide health care benefits to their citizens at an affordable cost. However, health care system in Europe before the ending of the second world war was not truly universal in nature. Most of them were aimed to protect certain specific groups, predominantly, the workers. The idea of affordable health care for people of all sects and even for the unemployed tended to evolve after the ending of the second world war and many countries started to embrace the idea of universal health care. As a result, universal health care system was enacted in Britain in 1948 through National Health Service Act 1946. Universal health care was then introduced in Sweden (1955)[4], Iceland (1956)[5], Norway (1956)[6], Denmark (1961)[7], Finland (1964)[8], Canada (1962-1972)[9], [10] and the list continues to grow till today. However, waves in Europe fails to cross the Atlantic, even now in the twenty first century: USA, unlike its European peers, still do not have universal health coverage for all of its citizens. Although, most of the developed nations have already implemented universal health care, the implementation differs widely across the countries and the countries follow different funding models tailored to their own unique need. Some are funded directly from the tax revenue while some others heavily use health insurance as a means to regulate health care access. Here, we follow the tax based approach of funding health care and show using empirical data that a small levy on all non-cash transactions taken place in a country within one calendar year is sufficient to cover the entire annual national health expenditure. The rest of the article is organized as follows: Section: 2 describes different funding models used worldwide for the implementation of universal health care. Section: 3 illustrates our model. Section: 4 describes the data used for empirical analysis and also presents the results in tabular format and finally, Section: 5 makes some concluding remarks.

2 Funding Models

Health care system around the globe has been primarily financed by the public revenue which is often supplemented by individual contribution through purchasing an insurance

policy or by direct, out of pocket expense during health care access. Depending upon the funding choice, health care system across the world can be classified into four distinct models [11], namely, I) Bismarck Model II) Beveridge Model III) National Health Insurance Model and IV) Out of Pocket Model.

2.1 Bismarck Model

Bismarck model, named after Prussian conservative statesman Otto Von Bismarck, is the precursor of modern universal health care system. Although, it was intended for the low-waged, German industrial workers of the nineteenth century, it eventually laid the foundation of today's inclusive health care system. Today, Bismarck type of health care system is achieved through the formation of non-profit health insurance companies which are mandated to sign up all citizens of a country irrespective of any medical condition. At the same time, all the citizens are also bound to sign up for one of the health insurance companies and pay the premium thereon. In this model, the government plays a vital role in determining the price of different health services and thereby costs are kept at an affordable level. Today, Bismarck type of health care model is found in its birth place Germany as well as France, Belgium, the Netherlands, Japan, Switzerland and some other countires around the globe [12]. This model of funding universal health care program is also known as social insurance model.

2.2 Beveridge Model

If the Bismarck type of health care system is named as a German Model of health care, the Beveridge model, established through the adoptation of Beverdige Report [13] into an act by the British parliament, can be considered as a British Model of univeral health care. In this model, entire health care expenditure is born to the government and the government funds it through taxation. One striking difference between Bismarck model and Beveridge model is that in Beveridge model, there is no health insurance. Although, in Beveridge model, there may exist some private hospitals, most of the hospitals are usually owned and controlled by the government and the majority of doctors are government employees. Here, the government excercises absolute control over what the doctors can charge. As it is a single payer model, this model results into low health care expenditure per capita. Today, Beveridge model is followed in its homeland Britain, Spain, Scandinavia, New Zealand, Hongkong, Cuba among others. This approach to universal health care is also known as single payer national health services model.

2.3 National Health Insurance Model

In national health insurance model, the government runs a non-profit, publicly funded health insurance program where each citizens are mandated to subscribe at a fixed predefined rate. Some features of Beveridge Model and Bismarck model are blended together to design this approach. Like the Bismarck model, this model relies upon a health insurance program. However, unlike the Bismarck model, the insurance program is run and administered solely by the government which negotiates with the health service providers in order to set up the prices of different health services. Most of the health service providers run as private enterprises and as the government has considerable bargaining power over the private enterprises, a decent price is set which results into a reasonable, affordable amount of premiums. This model resembles Beveridge model in a sense that it is also a single payer model where government pays for the overall health expenditure through a publicly funded health insurance program. This type of health care system is found in Canada, South Korea, Taiwan among other countries.

2.4 Out of Pocket Model

Under this framework, the health care expenditures are born to the patient and the expenditures, once incurred, are not reimbursed either by the government or by any of the health insurance programs. In this model, one can only see a doctor if he affords to pay the medical bills all by himself. This model of financing health care runs in total contrary to the main propositions of universal health care scheme. Like all other goods and services, health care services are sold at hospitals with minimum or no intervention at all from the government. Thus health care, instead of becoming a basic human right, becomes a luxury which only the rich can afford. Most of the underdeveloped countries across the globe follow this kind of health care financing model.

3 Our Model

Here, we search for an easy-to-implement, sustainable way of a implementing a publicly funded, universal health care scheme under Beveridge model which relies on tax revenue to finance citizen health care expenditure. In our approach, we propose the imposition of health tax on each non-cash transaction including transaction through debit and credit card, direct debit, credit transfer and payment through cheque. The next step is to determine the extent of health tax to be imposed on every non-cash transaction. To do so, we divide the total annual health expenditure of a geographic region by the total

number annual non-cash transactions that have taken taken place in the same time in the same region. Once, we determine the tax rate, the next step is to decide upon how these revenue can be collected with minimal logistic support. As we intend to impose tax on non-cash transactions only, it can be easily collected electronically with little or no additional logistic support. Thus the overhead of collecting tax would be minimal and the revenue earned this way can be fully deployed to cover up health expenditure.

4 Data and Results

We collect annual data of national health expenditure as percentage of GDP and GDP (current USD) from World Bank data warehouse which is publicly available through the URL: `https://data.worldbank.org/`. Then we multiply the two series in order to get country-wise data of national health expenditure in nominal terms (current USD). In the next step, we collect country-wise data regarding annual non-cash transaction from the World Payment Report 2018 prepared jointly by Capgemini and BNP Paribas [14]. Our empirical work will be based upon cross-sectional data for the year 2015 of different countries around the globe.

For the ease of estimation, we divide countries around the globe into many geographic regions like CEMEA (Central Europe, Middle East and Africa), LA (Latin America), EA (Emerging Asia), MAP (Mature Asia and the Pacific) and NA (North America). CEMEA includes Algeria, Bulgaria, Croatia, Kenya, Nigeria, Egypt, Israel and Morocco. LA includes Argentina, Colombia, Venezuela, Chile, Peru, Uruguay, Costa Rica, Bolivia and Paraguay. EA includes Malaysia, Thailand, Indonesia, Philippines, Taiwan, Pakistan, Sri Lanka and Bangladesh. MAP includes Japan, Australia, South Kora and Singapore. NA includes USA and Canada. Region-wise Total health expenditure and total number of non-cash financial transactions of the year 2015 are presented at figure: 1 and figure: 2 respectively.

In the next step, we divide total health expenditure of a region by the respective number of non-cash financial transaction to quantify the amount of health tax to be imposed on each transaction in order to implement the proposed single payer, revenue based universal health care scheme. Results are presented in table: 1, 2, 3, 4 and 5. From the above tables, it has been observed that a 1.84 USD levy on every non-cash transaction is enough to meet up the annual health expenditure in the CEMEA (Central Europe, Middle East and Africa) region. For Latin America (LA), Emerging Asia (EA), Mature Asia and the Pacific (MAP) and North America (NA) this value is found to be 4.51, 2.04, 15.93 and 21.07 USD respectively.

5 Conclusion and Further Studies

Ensuring universal health care for everyone, everywhere has been one of the Sustainable Development Goals (SDG) proclaimed by the World Health Organization (WHO). To implement universal health coverage, countries across the globe have selected different models: Some are funded by government revenue, some through national health insurance scheme, some by both public and private insurance while the rest of countries choose a market driven approach where the health expenditure is met directly from out-of-pocket expense. Moreover, the definition of universal health care and costing thereon varies depending upon who is covered, what services are covered and how much of the cost is covered. Our model is straight-forward: everyone is covered for everything and costing can be easily funded through a small levy on each non-cash financial trasaction. Here, we distribute the costing uniformly across different transactions irrespective of the size of individual transaction. In an equivalent, alternative way, the proposed health tax can be imposed on each non-cash financial transaction proportionately depending upon the size of each transaction i.e., big transactions entail big levies while smaller ones entail smaller levies. In doing so, we can make our taxation scheme more progressive in nature.

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6 Figures

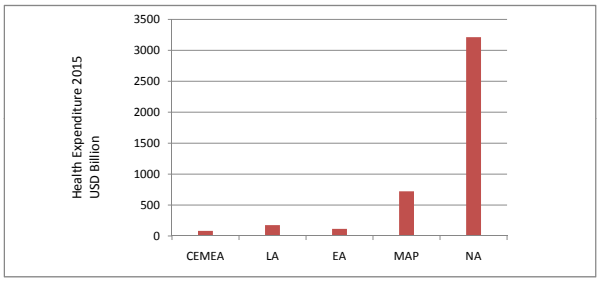

Figure 1: Region-wise health expenditure in 2015 in USD Billions

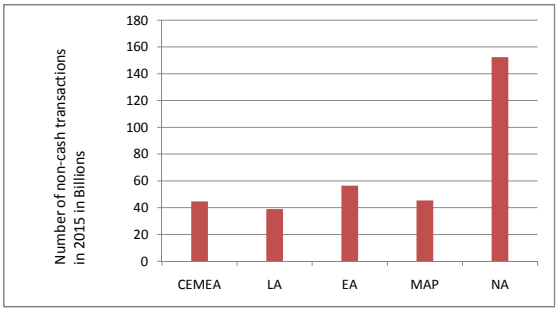

Figure 2: Region-wise number of non-cash transactions in 2015 in Billions

7 Tables

Country	Year	GDP(Current USD)	Health Expenditure (%GDP)	Healthe Expenditure (Current USD)	Total Non-Cash Transaction in CEMEA
Algeria	2015	1.65979E+11	7.05668786	11712639510	44.6 Billion
Bulgaria	2015	50201314895	8.20309288	4118060488	
Croatia	2015	49490142433	7.40361536	3664059787	
Kenya	2015	64007751188	5.22017671	3341317720	
Nigeria	2015	4.94583E+11	3.56466763	17630246549	
Egypt	2015	3.32698E+11	4.17154673	13878654251	
Israel	2015	2.99094E+11	7.4313808	22226802177	
Morocco	2015	1.0118E+11	5.52786362	5593081801	
			Total:	82164862283	44600000000
			Levy per transaction:	1.842261486	

Table 1: Per transaction health tax in CEMEA region

Country	Year	GDP(Current USD)	Health Expenditure (%GDP)	Healthe Expenditure (Current USD)	Total Non-Cash Transaction in Latin America
Argentina	2015	5.94749E+11	6.83453274	40648334632	38.9 Billion
Colombia	2015	2.93482E+11	6.19132764	18170416597	
Venezuela	2015	4.82359E+11	3.16147665	15249677232	
Chile	2015	9.58807E+11	8.07108586	77386111181	
Peru	2015	1.89927E+11	5.26480404	9999258928	
Uruguay	2015	53274304222	9.22392806	4913983496	
Costa Rica	2015	54775994478	8.14558457	4461824954	
Bolivia	2015	33000198263	6.41118015	2115702161	
Paraguay	2015	36164068797	7.81978726	2827953245	
			Total:	1.75773E+11	38900000000
			Levy per transaction:	4.518592864	

Table 2: Per transaction health tax in LA region

Country	Year	GDP(Current USD)	Health Expenditure (%GDP)	Healthe Expenditure (Current USD)	Total Non-Cash Transaction in Emerging Asia
Malaysia	2015	2.96636E+11	3.99868581	11861552922	56.4 Billion
Thailand	2015	4.01399E+11	3.77148642	15138724707	
Indonesia	2015	8.60854E+11	3.34743137	28816504715	
Philippines	2015	2.92774E+11	4.41351594	12921631528	
Taiwan	2015	5.256E+11	6.00000000	31536000000	
Pakistan	2015	2.70556E+11	2.6894981	7276601890	
Sri Lanka	2015	80604080689	2.96601516	2390729253	
Bangladesh	2015	1.95079E+11	2.63947252	5149048117	
			Total:	1.15091E+11	56400000000
			Levy per transaction:	2.0406169	

Table 3: Per transaction health tax in EA region

Country	Year	GDP(Current USD)	Health Expenditure (%GDP)	Healthe Expenditure (Current USD)	Total Non-Cash Transaction in Mature Asia and the Pacific
Japan	2015	4.39498E+12	10.89815618	4.78972E+11	45.3 Billion
Australia	2015	1.34903E+12	9.44533327	1.27421E+11	
South Korea	2015	1.38276E+12	7.39052728	1.02194E+11	
Singapore	2015	3.04098E+11	4.25217534	12930769946	
			Total:	7.21517E+11	45300000000
			Levy per transaction:	15.92751925	

Table 4: Per transaction health tax in MAP region

Country	Year	GDP(Current USD)	Health Expenditure (%GDP)	Healthe Expenditure (Current USD)	Total Non-Cash Transaction in North America
USA	2015	1.81207E+13	16.83613019	3.05083E+12	152.5 Billion
Canada	2015	1.55962E+12	10.43562237	1.62756E+11	
			Total:	3.21358E+12	1.525E+11
			Levy per transaction:	21.07267809	

Table 5: Per transaction health tax in NA region