



Assessment of the 2017 Tax Reform for Acceleration and Inclusion

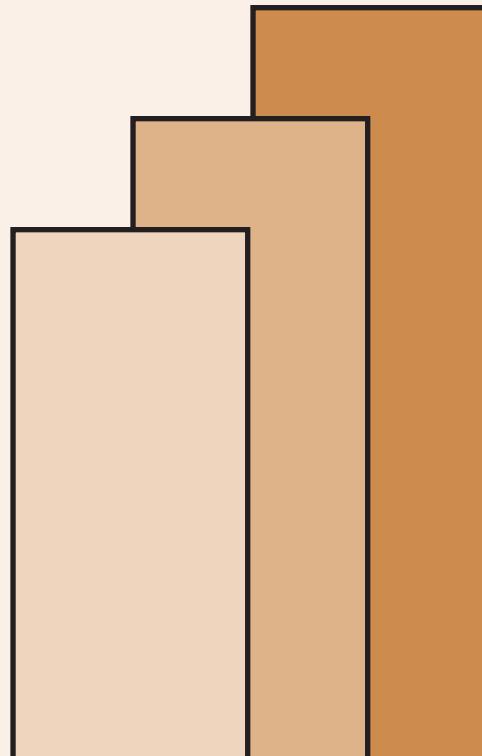
Rosario G. Manasan

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Assessment of the 2017 Tax Reform for Acceleration and Inclusion

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Abstract

Despite various reform efforts over the years, the tax system in the Philippines continues to suffer from chronic weaknesses. Tax rates are high relative to the country's ASEAN neighbors, yet revenue productivity remains low. Filipino individual taxpayers are overburdened by personal income tax brackets that have not been indexed to inflation, resulting in bracket creep. The real value of excise tax rates on petroleum products have likewise been eroded by inflation, and the schedule is characterized by a number of exemptions and rates that are low by international standards. The value-added tax base has narrowed from excessive exemptions.

The Duterte administration is pursuing a simpler, more efficient, and more equitable tax system to support its economic growth strategy. The administration's Comprehensive Tax Reform Program was filed as House Bill (HB) No. 4774 in January 2017 at the lower house and Senate Bill (SB) No. 1408 at Senate. These bills represent the first of several reform packages that will each focus on different areas of tax policy. The House of Representatives approved a compromise bill, House Bill No. 5636, titled "Tax Reform for Acceleration and Inclusion" or TRAIN in May 2017.

HB 4774, HB 5636 and SB 1408 seek to reform the structure of the personal income tax, value-added tax, and excise tax on petroleum products and automobiles, while improving the progressivity of the tax system. A portion of the additional revenues generated will be earmarked for investments in education, infrastructure, and health to stimulate long-term growth. This paper aims to assess the implications of these bills on the distribution of tax burden across income groups, economic incentives in affected sectors, national government revenues, and likely impact on tax compliance.

Overall, the proposed reforms are projected to generate additional revenues of PhP 51.3 billion in 2018, PhP 96.5 billion in 2019, and PhP 99.9 billion from 2020 onwards. However, the high estimates are unlikely to be achieved due to an increased risk of noncompliance among SEPs who are expected to face higher effective tax rates under all three bills in comparison to those under the current system. If tax compliance/efficiency in collecting PIT from SEPs deteriorates, the overall revenue take of national government is likely to be considerably lower than these high estimates.

In terms of incidence, the change in the tax burden as a percentage of household income that will result from HB 4774/ HB 5636 and SB 1408 is highest for the poorest income decile and declines as income rises. This reflects the regressive character of the reform when one abstracts from the proposed targeted subsidies intended to mitigate the adverse impact of the reform on the poorer segments of the population. Furthermore, these three bills are estimated to give rise to a net income transfer from households in deciles 1 to 8 in favor of deciles 9 to 10. The results suggest the need to compensate poorer deciles, e.g., the poorest two or four deciles, through targeted subsidies for a longer period than that proposed under HB 4774 and HB 1408.

Keywords: tax reform, personal income tax, value-added tax, excise tax on petroleum, excise tax on automobiles, excise tax on sugar sweetened beverages

ASSESSMENT OF THE 2017 TAX REFORM FOR ACCELERATION AND INCLUSION

I. INTRODUCTION

Despite various reform efforts over the years, the tax system in the Philippines is weighed down by persistent weaknesses. Tax rates are high relative to the country's ASEAN neighbors yet revenue productivity remains low. Filipino individual taxpayers are overburdened by personal income tax brackets that have not been indexed to inflation, resulting in bracket creep. The corporate income tax rate is among the highest in the ASEAN region, adversely affecting the private sector's competitiveness, especially in the face of ASEAN integration and increasing globalization. The fiscal incentive system is plagued by redundant incentives that result in sizable foregone revenues (Medalla 2002), and as such need to be rationalized. The base of the value-added tax has become too narrow because of numerous exemptions. Inflation has eroded the real value of peso-denominated petroleum excise tax rates, and the regime generally suffers from efficiency issues. Finally, taxation of financial instruments lacks neutrality as rates vary according to the type of instrument, maturity, currency, and residency of depositor/ transacting party.

As a result, the tax system has continually failed to meet known benchmarks on revenue collection and constrained the national government's ability to finance inclusive growth (Reside and Burns 2016). Amidst strong macroeconomic fundamentals and improved credit ratings in recent years, job creation and poverty reduction have remained elusive as low tax effort and weak public investment management reduced government spending on infrastructure, education, and health (World Bank 2014). A comprehensive tax reform effort appears to be well-justified not only in light of these issues but also of the piecemeal character of past reforms to the tax system.

In response to these issues, the Duterte administration is pursuing a simpler, more efficient, and more equitable tax system to finance its 10-point socioeconomic agenda. The redesigned tax system is envisioned to be characterized by low rates and a broad base to promote investments, job creation, higher and sustained growth, and poverty reduction. The comprehensive tax reform effort will be undertaken in stages and consists of five packages. Each package will focus on specific area/s of tax policy, while contributing to the overall objectives of tax reform and at the same time protecting the government's aggregate revenue take. A portion of the incremental revenues generated will be earmarked to fund targeted subsidies for the poor and vulnerable sectors.¹

Package 1 of the administration's Comprehensive Tax Reform Program was filed as House Bill (HB) No. 4774 in January 2017. Titled "Tax Reform for Acceleration and Inclusion" (TRAIN), HB 4774 seeks to: (i) repeal current provisions on the personal income tax (i.e., address bracket creep, shift to a modified gross income PIT regime for simplicity, and reduce the top marginal rate to 25% over time); (ii) broaden the base of the value-added tax (i.e., by eliminating a number of exemptions and limiting zero-rating to direct exporters); (iii) increase the excise tax on petroleum products and automobiles; and (iv) reduce the estate tax and the donor's tax).

¹ For instance, Section 31-F of HB 4774 states: "Forty% (40%) of the first-year incremental revenues generated from the petroleum excise tax under Section 21 of this Act shall be allocated to fund highly targeted transfer programs and subsidies to public utility vehicles for one year from the effectivity of this Act. An inter-agency committee led by the Department of Finance, and comprising the Department of Social Welfare and Development, Department of Energy, Department of Budget and Management, and the National Economic and Development Authority shall prepare the transfer programs using the National Household Targeting System for Poverty Reduction, as the basis, as well as the subsidy for public utility vehicles. The remaining sixty% (60%) of the first year revenue, and incremental revenues in succeeding years shall be allocated for infrastructure, health, education, and social protection expenditures."

The compromise bill which was passed by the lower house in plenary last May 31, 2017 (HB 5636) introduces an excise tax on sugary drinks and modified some of the provisions of HB 4774. Meanwhile, at the table in the ongoing deliberations on the TRAIN is HB 5636 and Senate Bill (SB) No. 1408, the version of the TRAIN that was filed by Senator Aquilino Pimentel Jr.

This paper aims to provide a comparative assessment of HB 4774, HB 5636 and SB 1408 in terms of the distribution of the tax burden across income groups, economic incentives on affected sectors, national government revenues, and likely impact on tax compliance.

II. IMPLICATIONS OF HOUSE BILL 4774, HOUSE BILL 5636 AND SENATE BILL 1408

This section assesses the implications of the provisions of HB 4774, HB 5636 and SB 1408 pertaining to: (i) the personal income tax, (ii) the value-added tax; (iii) excise taxes on petroleum products, (iv) excise taxes on automobiles, (v) excise tax on sugar sweetened beverages, and (vi) estate and donor's taxes. The discussion is organized as follows. For each type of tax, an overview of current provisions is provided, followed by the issues associated with the same. The provisions of proposed reforms are then presented. Each sub-section concludes with an assessment of the impact of the proposals on equity, national government revenues, and wherever possible, economic efficiency, and likely impact on tax compliance.

A. Personal income tax

The rationale to reform the personal income tax (PIT) system has been anchored on two issues, namely: (i) the non-indexation of tax brackets to inflation, resulting in bracket creep; and (ii) the high tax burden of Filipino taxpayers relative to their ASEAN counterparts.

Bracket creep. The proposal to amend the personal income tax rate schedule is anchored largely on the need to address bracket creep. The PIT tax brackets have remained unchanged since 1997 as the upper and lower boundaries of the tax brackets have not been indexed to inflation. This implies that taxpayers whose nominal incomes have increased in the interim may have been pushed into higher tax brackets even if their real incomes have not gone up, a phenomenon known as bracket creep.

Manasan (2016) provides a scenario of bracket creep at work: ‘Assuming that taxpayers pay the correct taxes, individual income taxpayers whose pre-tax incomes rose at the same rate as inflation between 1998 and 2014, such that the purchasing power of their income in 2014 is approximately the same as that in 1998, have had to pay higher taxes in 2014 (not just in peso terms but also in terms of effective tax rates²) simply because their taxable income in 2014 have been pushed into the next higher income tax bracket relative to their situation in 1998.’ The same analysis finds that the relative increase in the tax burden is also higher for individual income taxpayers belonging to the lower taxable income brackets compared to those in higher income tax brackets. In this sense, perpetuating bracket creep tends to be regressive as the non-indexation of tax brackets to inflation discriminates against taxpayers in lower income brackets (Manasan 2016).

High marginal tax rates relative to ASEAN neighbors. The proposal to amend the Philippine personal income tax system is also prompted by the need to ease the tax burden on Filipino individual income taxpayers, who are arguably the most heavily taxed in the ASEAN region (**Table 1**). The Philippines’ top marginal personal income tax rate of 32% is higher than that of all the ASEAN member countries except Thailand and Vietnam, and 3.4 percentage points higher than the average for the ASEAN-5 (including Malaysia, Indonesia, Philippines, Thailand, and Singapore).

Manasan (2016) also emphasizes the importance of the tax rate schedule and allowable personal exemptions and deductions in determining how much higher the PIT burden is for Filipino taxpayers compared to their ASEAN counterparts. The study simulates the effects of applying the various personal income tax rate schedules of ASEAN countries to several alternative gross personal income levels by expressing the same in peso terms using the 2014 purchasing power parity (PPP) exchange rates.³ The analysis finds that both the effective tax rates (i.e., the ratio of tax liability to taxable income) and the nominal peso tax liability for most gross personal income levels are higher when the Philippine rate schedule is applied relative to those of other ASEAN member countries. **Table 2** shows that the Philippines is only second to Lao PDR in terms

² The effective tax rate (ETR) is the ratio of tax liability to taxable income.

³ The simulations were performed for an individual income taxpayer who is assumed to have two dependents and who is assumed to be the sole income earner in the family (Manasan 2016).

of effective tax rates applicable to per capita GNI, and that the marginal tax rate applicable to the per capita GNI of each ASEAN member country is also highest in the Philippines.

Table 1. Comparative statutory tax rates in the ASEAN region (2014)

	Personal Income Tax		Corporate Income Tax	VAT/GST
	Top marginal rate	Number of tiers		
Brunei Darussalam	a/	a/	20%	n/a
Cambodia	20%	5	20%	10%
Indonesia	30%	4	25%	10%
Lao PDR	24%	7	24%	10%
Malaysia	26%	7	25%	6%
Myanmar	25%	6	25%	b/
Philippines	32%	7	30%	12%
Singapore	20%	9	17%	7%
Thailand	35%	8	20%	7%
Vietnam	35%	7	22%	10%

a/ no personal income tax in Brunei

b/ turnover tax; no standard rate

Source: Ernst and Young 2014; KPMG 2014

Note. Adapted from “Assessment of proposals to amend the personal income tax,” by R.G. Manasan, 2016, *Revised Version of PIDS Discussion Paper 2015-48*, 7. 2016 by “Philippine Institute for Development Studies”.

Features of the proposed reforms to personal income tax

To address persistent bracket creep and high tax burden faced by Filipino taxpayers compared to their ASEAN neighbors, HB 4774, HB 5636 and SB 1408 all propose to adopt a different PIT regime for (i) compensation income earners (CIEs), and (ii) self-employed and or professionals (SEP). To have a better appreciation of the changes proposed these bills, a brief overview of the present system is described in **Box 1**.

Regime for compensation income earners. All three bills propose to tax compensation income on the basis of modified gross income. That is, CIEs will no longer be allowed to deduct from their gross income personal and additional exemptions and deductions that are allowed under the current system to arrive at their taxable. However, the exclusion of 13th month pay and other benefits and GSIS/ SSS, PhilHealth and Pag-ibig contributions in reckoning gross income of CIEs under the existing legislation is retained.

The number of income tax brackets in graduated rate schedule that is applied on the taxable income of CIEs will be reduced from the present seven to six under all three bills. Under these bills, annual compensation income below PhP 250,000 will be exempted from the PIT. Said bills will adjust the income tax brackets such that a lower marginal tax rate than that under the existing system will be applicable on comparable taxable income levels with the exception of annual taxable income greater than PhP 5 million which will be subject to a higher marginal tax rate of 35% (**Table 3**). However, while HB 4774 and SB 1408 proposes to automatically index the taxable income levels in the rate schedule to the consumer price index (CPI) once every five years, HB 5636 proposes to do so once every three years.

Table 2. Comparative tax liability and effective tax rates when the tax rate schedule of different ASEAN countries are applied to selected gross personal income levels (adjusted for purchasing power parity)

Selected gross income levels	Philippines	Cambodia	Lao PDR	Indonesia	Malaysia	Myanmar	Singapore	Thailand	Vietnam
<i>Tax liability (in pesos)</i>									
9,000	-	-	107	-	-	-	-	-	-
18,000	-	-	557	-	-	-	-	-	-
40,000	-	-	2,629	-	-	-	-	-	-
95,000	-	-	9,588	-	-	-	-	-	-
210,000	16,500	6,505	49,474	2,687	-	-	-	-	-
390,000	62,000	24,505	69,743	11,237	1,691	9,371	-	-	-
525,000	102,500	38,005	102,143	28,955	5,539	28,358	-	6,250	3,242
1,500,000	413,000	141,425	336,143	187,400	172,798	159,659	12,866	138,516	252,267
3,000,000	893,000	414,907	696,143	583,704	562,510	485,751	202,192	505,552	865,629
6,000,000	1,853,000	1,014,907	1,416,143	1,483,704	1,342,510	1,235,751	715,065	1,398,513	1,915,629
12,000,000	3,773,000	2,214,907	2,856,143	3,283,704	2,902,510	2,735,751	1,894,852	3,493,323	4,015,629
<i>Effective tax rates</i>									
9,000	-	-	1%	-	-	-	-	-	-
18,000	-	-	3%	-	-	-	-	-	-
40,000	-	-	7%	-	-	-	-	-	-
95,000	-	0%	10%	-	0%	0%	-	-	-
210,000	8%	3%	24%	1%	0%	0%	-	-	-
390,000	16%	6%	18%	3%	0%	2%	-	0%	-
525,000	20%	7%	19%	6%	1%	5%	-	1%	1%
1,500,000	28%	9%	22%	12%	12%	11%	1%	9%	17%
3,000,000	30%	14%	23%	19%	19%	16%	7%	17%	29%
6,000,000	31%	17%	24%	25%	22%	21%	12%	23%	32%
12,000,000	31%	18%	24%	27%	24%	23%	16%	29%	33%
Per capita GNI	4%	-	9%	2%	1%		3%	-	-
Marginal tax rate applicable to per capita GNI	15%	0%	12%	5%	6%		7%	0%	0%

Author's estimates

Note. Adapted from "Assessment of proposals to amend the personal income tax," by R.G. Manasan, 2016, *Revised Version of PIDS Discussion Paper 2015-48*, 8. 2016 by "Philippine Institute for Development Studies".

Box 1. The personal income tax system in the Philippines

The present form of the personal income tax system was enacted through RA 8424 or the National Internal Revenue Code (NIRC) of 1997. The PIT schedule has seven tax brackets with marginal tax rates that range from 5% to 32% that is applicable to both compensation earners (CEs) and self-employed and professionals (SEPs). The system is *de jure* progressive, i.e., statutory tax rates rise with income. Moreover, RA 8424 does not include any provision for the indexation of the PIT brackets to inflation.

Compensation income is taxed on a gross income basis, net of exemptions and deductions. Each wage and salaried worker is entitled to a PhP 50,000 personal exemption and a PhP 25,000 additional exemption for each dependent (up to a maximum of four).⁴ The additional exemption for dependents may be claimed only one of the spouses in the case of married individuals. In addition, the following are excluded in reckoning gross income: retirement benefits, pensions, and gratuities, 13th month pay and other benefits not exceeding PhP 82,000,⁵ and GSIS, SSS, PhilHealth, Pag-ibig, union dues, and other mandatory contributions. Minimum wage earners have been exempt from income taxes since RA 9504 was signed into law in 2008.

On the other hand, SEPs are taxed on the basis of net income, with the following items being allowed as deductions from gross income: (i) ordinary and necessary expense directly attributable to the development, management, operation, and/or conduct of trade, business or exercise of profession; (ii) depreciation allowance; (iii) research and development expenditures, (iv) interests and taxes paid, and (v) losses and bad debt incurred in connection with the taxpayer's profession, trade, or business; and (vi) charitable and other contributions. Taxpayers may opt for an optional standard deduction equivalent to 40% of gross sales or receipts in lieu of the itemized deductions enumerated above. SEPs are also allowed to deduct personal and additional exemptions from their gross income after deducting allowable expenses.

Regime for self-employed and professionals. HB 4774, HB 5636 and SB 1408 all propose to divide SEPs into two groups depending on the size of their gross sales or gross receipts, i.e., (i) SEPs with gross sales/receipts below the VAT threshold,⁶ and (ii) SEPs with gross sales/receipts above the VAT threshold. On the one hand, SEPs with gross sales/receipts below than the VAT threshold will be taxed at 8% of gross sales/receipts in lieu of the VAT and other percentage taxes. On the other hand, SEPs with gross sales/receipts above PhP 3 million will face a tax rate of 30% based on their net income, i.e., they will be taxed in the same manner as corporations under HB 4774 and HB 5636. In contrast, SB 1408 proposes to tax SEPs with gross sales/receipts above PhP 3 million using the tax rate schedule that will be applicable to CIEs.⁷ Meanwhile, all three bills propose to reduce the optional standard deduction to 20% from the current 40% of gross income.

Implications of PIT provisions under HB 4774, HB 5636 and SB 1408

Tax treatment of CIEs.

CIEs with annual taxable income not exceeding PhP 5 million will pay lower PIT under HB 4774/ HB 5636 and SB 1408 than under the existing PIT regime, while the opposite is true for those with taxable income in excess of PhP 5 million. For instance, the PIT liability of an entry-level DepEd teacher who earns around PhP 20,000 per month will become zero under HB 4774 compared with PhP 22,500 under the existing PIT regime (if she/he has two children) or PhP 35,000 (if she/he has no children).

⁴ The personal exemption and additional exemption levels were last adjusted in 2009.

⁵ RA 10653 increased the ceiling on tax-free bonuses from PhP 30,000 to PhP 82,000 in 2016.

⁶ Under the 3 bills, the VAT threshold will be raised from PhP 1.5 million to PhP 3 million.

⁷ This point is not quite apparent in SB 1408 as filed but the clarification is made by the staff of Senator Koko Pimentel.

Table 3. Comparison of PIT rate schedule under existing regime vis HB 4774/ HB 5636/ SB 1408

I. Existing PIT regime -applicable to both CIEs and SEPs	II. HB 4774, HB 5636 - applies to CIEs only; SB 1408 - applies to CIEs and to SEPs with gross sales/ receipts above PhP 3 million a year	applies to CIEs and to SEPs with gross sales/ receipts above PhP 3 million a year
	<i>For taxable year 2018-2019</i>	<i>For taxable year 2020 onwards</i>
For taxable income	Tax due	Tax due
Not over PhP 10,000	5%	0%
Over PhP 10,000 but not over PhP 30,000	PhP 500 + 10% of the excess over PhP 10,000	20% of the excess over PhP 250,000
Over PhP 30,000 but not over PhP 70,000	PhP 2,500 + 15% of the excess over PhP 30,000	PhP 30,000 +25% of the excess over PhP 400,000
Over PhP 70,000 but not over PhP 140,000	PhP 8,500 + 20% of the excess over PhP 70,000	PhP 130,000 +30% of the excess over PhP 800,000
Over PhP 140,000 but not over PhP 250,000	PhP 22,500 + 25% of the excess over PhP 140,000	PhP 490,000 +32% of the excess over PhP 2,000,000
Over PhP 250,000 but not over PhP 500,000	PhP 50,000 + 30% of the excess over PhP 250,000	PhP1,450,000 +35% of the excess over PhP 5,000,000
Over PhP 500,000	PhP 125,000 + 32% of the excess over PhP 500,000	PhP1,302,500 +35% of the excess over PhP 5,000,000

Tax treatment of SEPs

First, under the proposed bills, SEPs with annual net income between PhP 3 million and PhP 8.95 million will be taxed more heavily than compensation income earners with comparable income levels from 2020 onwards. The opposite will be true for SEPs with annual net income above PhP 8.95 million.

Second, the proposed tax treatment of SEPs with gross sales/ receipts below PhP 3 million under HB 4774, HB 5636 and SB 1408 introduces severe horizontal inequity in the PIT system. Under these bills, the effective tax rates (i.e., the ratio of tax liability to net income) faced by SEPs with gross sales/ receipts below PhP 3 million depends on their “profit margin,” i.e., the ratio of their net income to their gross sales/ receipts. SEPs with lower profit margins (e.g., small store owners, food service providers, public transport operators, small contractors, and small/ medium scale entrepreneurs, in general) will have higher ETRs than SEPs with higher profit margins (e.g., lawyers, doctors, accountants, and consultants). In other words, SEPs with higher profit margins will be given more favorable tax treatment than those with lower profit margins. **Box 2** below illustrates this point with two examples.

Moreover, SEPs with profit margins greater than 27% will have ETRs lower than 30%, placing them in a favorable situation tax-wise compared to SEPs with yearly gross sales/ receipts above PhP 3 million. Also, SEPs with gross sales/receipts between PhP 1.5 million and PhP 3 million and with profit margins higher than 60% will get better tax treatment than wage income earners with comparable income as well as SEPs with gross sales/receipts greater than PhP 3 million. (Refer to **Annex Table 2** for the computations that support these points.)

Impact on government revenues from the PIT

Personal income tax revenues from compensation income are projected to decline by 1.5% of GDP in the third year of implementation of PIT reform under HB 4774 and HB 5636 (**Table 4**). Meanwhile, PIT revenues from SEP income are projected to increase by 0.6% of GDP assuming that the 2015 collection efficiency level would persist in the outer years. Thus, overall, PIT revenues are estimated to contract by 0.9% of GDP.

Distribution of the tax burden across different income groups

The change in the tax burden expressed in absolute peso terms (i.e., the total PIT liability) of CIEs is projected to be negative or to decline for all income deciles if HB 4774/ HB 5636 were enacted into law based on calculations using the 2015 Family Income and Expenditure Survey. In contrast, the PIT liability of SEPs is projected to be positive or to increase for all income deciles with the passage of either one of these two bills. When CIEs and SEPs are considered as one group, the total PIT liability of all personal income taxpayers belonging to deciles 1-5 is estimated to positive while that of all personal income taxpayers belonging to deciles 6-10 is estimated to be negative due to the PIT provisions of HB 4776 and HB 5636 (**Table 4**). Moreover, the Reynolds-Smolensky (RS) index⁸ is estimated to decline from 0.017 under the present PIT regime to 0.005 if either one of HB 4776 or HB 5636 were to be enacted, indicating that the PIT provisions of these two bills are not pro-poor.

⁸ The RS index is a summary measure of the redistributive capacity of the tax system. It is computed as the difference between the Gini coefficient of the pre-tax distribution of income and the after-tax distribution of income. A positive RS index indicates that the after-tax distribution of income is more equal than the pre-tax distribution of income and that the tax is progressive.

Box 2. Two cases to illustrate the horizontal inequity that results from the proposal to tax SEPs with gross sales/ receipts below PhP 3 million at 8% of their gross sales/ receipts

Case 1.

Consider the case of a store owner/ retailer with annual gross sales of PhP 1.5 million or gross sales of PhP 4,800 per day. Assume that his profit margin is 20%. This implies that his net income is PhP 300,000 per year or PhP 960 per day. The personal income tax liability of this store owner for the year under HB 4774, HB 5636 and SB 1408 will be PhP 120,000 (or 8% of 1,500,000). This amount is equal to 40% of the net income of this store owner, even higher than the 30% tax on net income that SEPs with gross sales/ receipts above PhP 3 million are supposed to pay under TRAIN.

Now, compare the tax liability of this store owner with that of a government employee whose annual gross income (net of the 13th month pay and other benefits) is equal to PhP 300,000. Under HB 4774, HB 5636 and SB 1408, the tax liability of this particular government employee will be PhP 7,500⁹ or PhP 2.5% of his gross income.

Clearly, the government employee gets better tax treatment than the store owner under TRAIN in this particular example.

Case 2.

Second, take the case of a freelance consultant with annual gross receipts of PhP 1.5 million or gross receipts of PhP 4,800 per day. Assume his profit margin is 80%. This implies that his net income is PhP 1.2 million per year or PhP 3,800 per day. The personal income tax liability of this freelance consultant for the year under TRAIN will be PhP 120,000, the same as that of the store owner in the example above. This amount is equivalent to 10% of the net income of this freelance consultant.

Now, compare the tax liability of this freelance consultant with that of a government employee whose annual gross income (net of the 13th month pay and other benefits) is equal to PhP 1.2 million per year. Under TRAIN, the tax liability of this particular government employee will be PhP 202,500 or 16.9% of his gross income.

In this particular case, the freelance consultant certainly receives more favorable treatment tax wise than the government employee.

⁹ The tax rate schedule for year 3 of implementation of HB 5636 is used to arrive at this number. If the rate schedule for years 1 and 2 of implementation, the tax liability of the government employee would have been PhP 10,000.

Table 4. Change in the PIT burden if HB 4776/ HB 5636 were enacted, by income decile, by type of income (in million pesos)

Income Decile	HB 4774, HB 5636, SB 1408 - year 1 & 2 *			HB 4774, HB 5636 & SB 1408 -year 3 onwards *		
	Wage income	SEP income **	Total	Wage income	SEP income **	Total
First (poorest)	-46	5,394	5,348	-46	5394	5348
Second	-226	6,495	6,269	-227	6495	6268
Third	-621	6,706	6,085	-621	6706	6085
Fourth	-2,103	7,094	4,991	-2109	7094	4985
Fifth	-4,108	7,528	3,420	-4117	7528	3411
Sixth	-7,831	7,867	36	-7905	7867	-38
Seventh	-13,528	8,104	-5,425	-13740	8104	-5636
Eighth	-22,187	8,445	-13,742	-22799	8445	-14354
Ninth	-37,807	7,681	-30,127	-40193	7681	-32513
Tenth (richest)	-89,723	9,574	-80,149	-103552	9574	-93978
Total	-178,181	74,888	-103,293	-195310	74888	-120422
Revenue impact % to GDP	-1.3	0.6	-0.8	-1.5	0.6	-0.9

* negative(positive) number indicates reduction (increase) in PIT liability

** assumes gross-up factor of 0.3 for SEP income of SEP with gross sale/ receipts below PhP 3 M and that 2015 collection efficiency is forthcoming under TRAIN

The biggest gains from the PIT reform will accrue to CIEs belonging to the richest income decile, who are likely to experience the highest reduction in average ETR and receive the largest share in the total reduction in the PIT burden (**Table 5**).¹⁰ While CIEs from the poorer deciles are also projected to face lower ETRs under HB 4774, HB 5636 and SB 1408 relative to the current system, but the reduction in their ETRs is significantly smaller than that of richer deciles'. Moreover, the share of CIEs from poorer deciles in the total reduction in PIT burden is also smaller than that of richer deciles. Meanwhile, SEPs from the poorest decile are expected to be the biggest losers from the reform, as this group has the highest increase in their ETRs (although their share in the total increase in tax burden of SEPs is smaller than that of richer deciles). Again, given these estimates, the direction of the PIT reform does not appear to be pro-poor.

Effective tax rates, tax compliance across different income groups by type of income, and work-leisure trade-off among SEPs

The overall average effective tax rate on compensation income is projected to decrease from 5.4% under the existing regime to 1.2% under HB 4774/ HB 5636/ SB 1408 from the third year of its implementation onwards (**Table 6**). On the other hand, the overall average ETR on net income of SEPs is expected to increase from 1.7% under the current system to 4.6% under HB 4774 and HB 5636.

Thus, the overall average ETR for SEPs under these two bills projected to be 2.75 times that under the existing regime. At the same time, reflective of the unequal tax treatment of compensation income earners and SEPs under HB 4744 and HB 5636, the ratio of the overall average ETR on SEP income and the overall average ETR on compensation income under these two bills is projected to be 3.7 times that under the existing regime. Both of these findings would tend to increase the risk that tax compliance among SEPs may decline from the 2015 level of 18% and reduce the likelihood of realizing the projected revenue gain from the imposition of higher ETRs on SEPs. For instance, a 5-percentage point decline in collection efficiency of PIT from SEP income is projected to result in a loss in PIT revenue equal to 0.25% of GDP.

¹⁰ This is initially quite surprising given the increase in the marginal tax rate applicable to the highest income bracket (i.e., CIEs whose annual gross income is above PhP million) from the present 32% to 35% under the TRAIN. However, the results of marketing research (e.g., Kantar 2016) suggests that less than 1% of the total number of households belong to this ultra-rich group.

On the other hand, a marginal increase in gross sales/ receipts from just below the PhP 3 million level would result in a dramatic increase in the ETR of SEPs, particularly those with relatively high profit margins. This is expected to produce two alternative results: (i) a more pronounced work-leisure tradeoff; and (ii) greater incentive for SEPs to under-declare gross sales/receipts.

Table 5. Winners and losers from PIT reform under HB 4774 and HB 5636 (year 3 of implementation)

Income decile	Distribution of change in PIT burden across deciles (HB 4774 -year 3) **			Change in PIT liability as % of income **		
	Wage income	SEP income	Total	Wage income	SEP income	Total
First (poorest)	0.0	7.2	4.4	0.0	4.5	2.2
Second	-0.1	8.7	5.2	-0.1	4.5	1.9
Third	-0.3	9.0	5.1	-0.3	4.3	1.6
Fourth	-1.1	9.5	4.1	-0.7	4.3	1.1
Fifth	-2.1	10.1	2.8	-1.2	4.1	0.7
Sixth	-4.0	10.5	0.0	-1.9	3.9	0.0
Seventh	-7.0	10.8	-4.7	-2.8	3.6	-0.8
Eighth	-11.7	11.3	-11.9	-3.8	3.1	-1.7
Ninth	-20.6	10.3	-27.0	-5.3	2.3	-3.0
Tenth (richest)	-53.0	12.8	-78.0	-8.3	1.3	-4.7
Total	-100.0	100.0	100.0	-4.2	2.9	-1.7

* assumes gross-up factor of 0.3 for SEP income of SEP with gross sale/ receipts below PhP 3 M and that 2015 collection efficiency is forthcoming under HB 4774

** negative number indicate reduction in PIT burden

Table 6. Effective tax rate (i.e., ratio of tax liability to taxable income),* across income deciles

Income Decile	Existing Regime			HB 4774, HB 5636 - year 1 & 2			HB 4774, HB 5636 -year 3 onwards		
	Wage income	SEP income	Total	Wage income	SEP income *	Total	Wage income	SEP income *	Total
First (poorest)	0.04	0.01	0.03	0.00	4.53	2.25	0.00	4.53	2.25
Second	0.12	0.07	0.10	0.00	4.52	2.00	0.00	4.52	2.00
Third	0.27	0.16	0.22	0.00	4.49	1.81	0.00	4.49	1.81
Fourth	0.74	0.23	0.55	0.01	4.49	1.66	0.01	4.49	1.66
Fifth	1.23	0.39	0.93	0.01	4.50	1.59	0.01	4.50	1.59
Sixth	1.96	0.62	1.52	0.07	4.52	1.53	0.06	4.52	1.52
Seventh	2.91	0.95	2.30	0.17	4.53	1.54	0.13	4.53	1.51
Eighth	4.16	1.44	3.31	0.42	4.56	1.72	0.32	4.56	1.65
Ninth	6.30	2.21	5.05	1.31	4.52	2.29	0.99	4.52	2.07
Tenth (richest)	12.09	3.48	8.82	4.90	4.73	4.83	3.79	4.73	4.15
Total	5.42	1.66	4.09	1.60	4.58	2.66	1.23	4.58	2.42

* assumes gross-up factor of 0.3 for SEP income of SEP with gross sale/ receipts below PhP 3 M and that 2015 collection efficiency is forthcoming under TRAIN

B. Value-Added Tax

The proposal to reform the current value-added tax system is anchored on the need to eliminate numerous exemptions that have significantly narrowed the VAT base (**Box 3**), resulted in numerous breaks in the VAT chain, thereby making it more difficult to collect the VAT efficiently and resulted in a substantial tax gap (i.e., the difference between actual and potential tax revenues). The World Bank (2016) estimates that the average VAT gap from 2006 to 2013 represented almost 63% of potential VAT revenues. Of this, 28% percent was a result of legal exemptions and special treatment while 35% may be associated with noncompliance. The same study found that some exemptions under the current VAT system tend to create economic distortions. For instance, the VAT-exempt treatment of cooperatives tends to provide an incentive for corporations to restructure themselves as cooperatives in order to reduce tax liability even if such an action is not economically efficient. Further, the study argues that the exemption for cooperatives may be redundant as small cooperatives are already protected by the VAT threshold.

Features of the VAT provisions of HB 4774, HB 5636 and SB 1408

HB 4774, HB 5636 and SB 1408 all seek to expand the VAT base by lifting some of the prevailing exemptions from the VAT including that of the sales of agricultural cooperatives duly registered with the Cooperatives Development Authority (CDA) and their importation of direct farm inputs, machineries and equipment; gross receipts from lending of credit and multi-purpose cooperatives duly registered with the CDA; sales of non-agri, non-credit and non-electric cooperatives duly registered with the CDA; sale of real property utilized for socialized and low-cost housing; lease of residential property with monthly rental not exceeding PhP 10,000; and sale of power generated using renewable sources of energy. All three bills also propose to change the VAT treatment of indirect exports from zero-rated to VAT-able. On the other hand, while HB 4774 and SB 1408 propose to change the VAT treatment of sale of power or fuel generated from renewable energy sources from zero-rated to VAT-exempt, HB 5636 does not. All three bills would increase the VAT threshold from PhP 1.9 million to PhP 3 million of gross sales/ receipts.¹¹

Implications of VAT provisions of HB 4774, HB 5636 and SB 1408

On cooperatives. All three TRAIN bills seek to change the VAT treatment of sales of agricultural, non-agricultural, non-credit, non-electric coops from VAT exempt to VAT-able. Given the nature of the VAT, this move will likely: (i) increase the price that final consumers of these products pay; and (ii) encourage enterprises which use said products as intermediate inputs to buy the same from cooperatives because they can now claim a tax credit for the input VAT paid on said inputs. Thus, the repeal of the VAT exemption of the sales of agri-, non-agri- and multipurpose cooperatives will likely promote the growth of these cooperatives if their products are inputs to other products rather than for final consumption.

Note, however, cooperatives sale of agricultural food products in their original state will continue to be VAT-exempt because agricultural food products in their original state are VAT-exempt regardless of the seller.¹² Moreover, “small” agricultural cooperatives (i.e., those with gross sales/receipts below the VAT threshold of PhP 3 million) have the option not to be VAT-registered and will continue to be exempt from payment of the 3% “other percentage tax” on their gross sales/receipts.

¹¹ BIR Revenue Regulation No. 3-2012 raised the VAT threshold from PhP 1,500,000 to PhP 1,919,500.

¹² Refer to Section 109 (1) (A) of HB 4774, HB 5636 and SB 1408.

Box 3. The value-added tax system in the Philippines

The Philippine VAT system has three regimes: VAT-exempt, zero-rated, and VAT-able. The 12% percent VAT rate applies to all goods and services except those that are VAT-exempt or zero-rated under the NIRC. The VAT liability of VAT-able firms is computed using the tax credit or "invoice" method. That is, firms are entitled to subtract the input VAT they paid on all their VAT-able input purchases including that of capital goods from the output VAT due on their sales of VAT-able output. However, credits are allowed only if they were supported by invoices from their suppliers. The VAT is, thus, said to have a self-policing feature as each firm is required to supply evidence regarding taxes that should have been paid by all its suppliers. VAT-exempt firms do not pay VAT on their sales nor can they claim credit for the VAT for their input purchases. In contrast, zero-rated firms pay zero VAT on their sales and claim credit for the VAT on their input purchases. That is, zero-rated firms are effectively entitled to a refund of the VAT they paid on input purchases. (See Annex 1 for a more detailed discussion on how the value-added tax works.)

Firms with gross sales/ gross receipts below PhP 1,9million per year (i.e., the VAT threshold) are not required to register for VAT. If they elect to be exempted from the VAT, they are required to pay "other percentage tax" (OTP) equivalent to 3% of their annual gross sales/ gross receipts. On the other hand, firms that produce zero-rated products can apply for a VAT refund on their inputs. In practice, however, these refunds are difficult to obtain, and the government now issues tax credit certificates in lieu of refunds (World Bank 2016). The government has also extended the zero-rating to suppliers of export businesses (i.e., so-called indirect exporters). Moreover, firms are allowed to apply for a tax credit certificate for excess input tax credit within two years of the quarter in which they were issued, though these credits cannot be directly redeemed for a VAT refund. The Bureau of Internal Revenue collects VAT on sales of goods and services in the domestic market, while the Bureau of Customs collects VAT on imports.

The VAT was first introduced in the country 1988 with the issuance of Executive Order (EO) 273 in 1987. It replaced a host of taxes including annual fixed taxes, sales tax on manufacturers/producers, turnover tax on subsequent sellers, advance sales tax / compensating tax on importation of goods, millers' tax, percentage tax on contractors, lessors of property, lessors/distributors of cinematographic films and excise tax on certain articles (Manasan 2002). The Philippine VAT is a consumption type VAT. Thus, in determining their tax liability, firms are allowed to deduct all business purchases including purchases of capital goods from their sales. As such, the VAT does not distort the timing of firms' investment decisions nor does it discriminate against capital-intensive methods of production. At the same time, it minimizes the imposition of a tax on tax (or tax cascading) that is characteristic of the turnover tax and is, thus, neutral with respect to production and distribution methods.

Being levied on the basis of the destination principle, i.e., goods and services are taxes on the basis of where they are consumed rather than where there are produced, imports and domestically produced goods are treated symmetrically and, thus, compete on an equal footing with each other. On the other hand, exports are zero rated which means that exports are allowed to receive credit for VAT paid on their inputs even as they pay zero output VAT. Thus, in principle, the VAT helps ensure that exports compete on an even playing field with their counterparts in the international market.

In 1994, RA 7716 (or the Expanded VAT Law) expanded the coverage of the VAT to include the following: (1) intangibles (e.g., patents, copyrights, trademarks, and other property rights); (2) sale and lease of real property held primarily for sale/ lease in the ordinary course of trade or business; (3) certain items that were previously exempt (e.g., imported meat, pesticides, imported cane sugar and specialty feed); (4) proprietors, restaurants, and other eating places, hotels, motels, rest houses, pension houses, and resorts; (5) operators of taxicabs, utility cars for rent or hire driven by lessee, tourist buses and other common carriers by land, air and sea relative to their transportation of cargo; (6) international cargo vessels, airlines, and freight forwarders; (7) franchise grantees of telephone, telegraph, radio and television broadcasting; (8) dealers in securities and lending investors; (9) banks and non-bank financial intermediaries and finance companies; (10) insurance premium with respect to services of non-life insurance companies (except crop insurance); (11) printing, publication, importation or sale of books and any newspaper, magazine, review or bulletin; (12) services of actors, actresses, singers, professional athletes; and (13) services performed in the exercise of profession or calling and professional services performed by registered general professional partnerships. On the other hand, RA 7716 exempted from the VAT (1) the sale of real property utilized for low- cost and socialized housing as defined under the Urban Development and Housing Act of 1992; (2) the

services rendered by regional or area headquarters established in the Philippines by multinational corporations which act as supervisory , communications and coordinating centers for their affiliates, subsidiaries or branches in the Asia-Pacific Region but which do not earn or derive income from the Philippines; (3) keepers of garages, and common carriers by land, air or water for the transportation of passengers; (4) grantees of electric, gas or water utility franchises; and (3) life insurance and foreign insurance agents,

In 1996, RA 8241 provided for the VAT exemption of (1) agricultural cooperatives, electric cooperatives, lending activities of multi-purpose and credit cooperatives registered with the CDA; (2) educational services of private education institutions accredited by the Commission on Higher Education (CHED); (3) overseas dispatch, messages or communication originating from the Philippines; (4) grantees of radio and television broadcasting franchises with annual gross receipts not exceeding PhP 10 million; (5) international carriers doing business in the Philippines; (6) lease of residential units subject to rent control law; (7) printing, publication, importation or sale of books and any newspaper, magazine, review or bulletin.

In 2005, RA 9337 (commonly known as the E-VAT Law), the VAT base was broadened to include (1) the sale or importation of coal and petroleum products; (2) sale of electricity by generation, transmission and distribution companies; and (3) sale of nonfood agricultural and marine and forest products in their original state. The same law, however, introduced key provisions that were primarily intended to reduce the tax burden on poor households and effectively narrowed the VAT base by (1) expanding the coverage of the term “simple processes” that define whether agricultural food products are in their original state to include broiling and roasting and expanding the coverage of the term ‘original state’ to include molasses; and (2) exempting the importation of meat, the sale or importation of coal and natural gas in whatever form or state; the sale of educational services rendered by private educational institutions duly accredited by the TESDA; and the gross receipts of banks and non-bank financial intermediaries performing quasi-banking functions. Mitigating measures pertaining to other areas of tax policy were also included to offset the price effects of expanding the VAT coverage. These include (1) the reduction of the excise tax rates on diesel, kerosene and bunker fuel oil (as diesel-powered vehicles are more frequently used in public transportation and bunker fuel oil is used for vessels that transport cargo); (2) the removal of the 3% franchise tax on power distribution utilities to reduce the price increment of the VAT on electricity; and (3) the removal of the franchise tax under the charters of domestic carriers by air, which were fully covered by VAT as a result of the reform. Finally, the E-VAT Law imposed a 70% cap on input VAT credit, extended the input VAT claim on capital goods exceeding PhP 1 million over five years, and imposed a uniform 5% final withholding VAT on government purchases.

In addition to the exemptions from the VAT enumerated above, numerous other exemptions from the VAT are provided by a number of special laws.

On indirect exporters. The change in the VAT treatment of indirect exporters will likely have a perverse effect in promoting backward linkage of export activity but will have no impact on revenues.¹³ Given the difficulty of using tax credits, this will tend to increase the cost of money borne by direct exporters as it will likely increase the tax credit due them for the VAT on their inputs. The proposed change appears to be driven by the concern that zero-rating of indirect exports results in tax leakage, particularly in the case of indirect exporters registered with the Board of Investments (BOI) and/ or indirect exporters serving direct exporters registered with the BOI. Note that this concern might be misplaced in the case of indirect exporters which are PEZA locators given controls exercised by PEZA when goods are moved out of PEZA-controlled “customs territory”. In the case of BOI affiliated indirect exporters, this is clearly a case where policymakers have to carefully consider the trade-off between the enhancing backward linkage of exports and the use of tax policy to correct what is apparently a tax administration problem.

¹³ See Annex 2 for a more detailed representation of the VAT liability of direct and indirect exporters under the present system vis HB 4744, HB 5636 and SB 1408.

On developers of socialized and low cost housing. Subjecting the sale of real property utilized for socialized and low cost housing will tend to increase the cost of socialized and low cost housing units and less affordable to consumers. From a social perspective, government support to target beneficiaries of socialized and low cost housing appears to be warranted. However, the remaining question that may be asked: what is the more appropriate form of government support in this regard - VAT exemption or direct subsidy?

On producers of power or fuel generated from renewal sources of energy. The zero-rating of power/ fuel generated from renewable sources of energy under the existing tax regime helps bring down the cost of the same and assists in improving the affordability of renewable sources of energy vis non-renewable sources. This is certainly good for the environment. However, this might be an opportune time to revisit the overall policy regime (tax and otherwise) for renewable sources of energy and study the interaction of the VAT zero-rating of and the application of feed-in tariff on renewable sources of energy and their impact on the overall cost of power in the country.

Impact on government revenues from the VAT

VAT revenues are projected to increase by PhP 31.3 billion as a result of the proposed expansion of the VAT base under HB 4774, HB 5636 and SB 1408. This estimate is derived by applying the net VAT rate for alternative tax regimes (which are derived from the input-output table) to GDP-based estimates of sectoral output.

Distribution of the tax burden across different income groups

The VAT under HB 4774/ HB 5636/ SB 1408 is found to be slightly more regressive than the existing VAT system, as suggested by the Reynolds-Smolensky index (**Table 7**). While the change in the effective VAT rates due to these bills is estimated to be largest for the two poorest deciles, the share of the various income deciles in the total increase in the VAT burden borne by households increases as household per capita income rises.

Table 7. Change in VAT burden due to TRAIN expressed as a percentage of household income and in absolute peso terms, by income decile

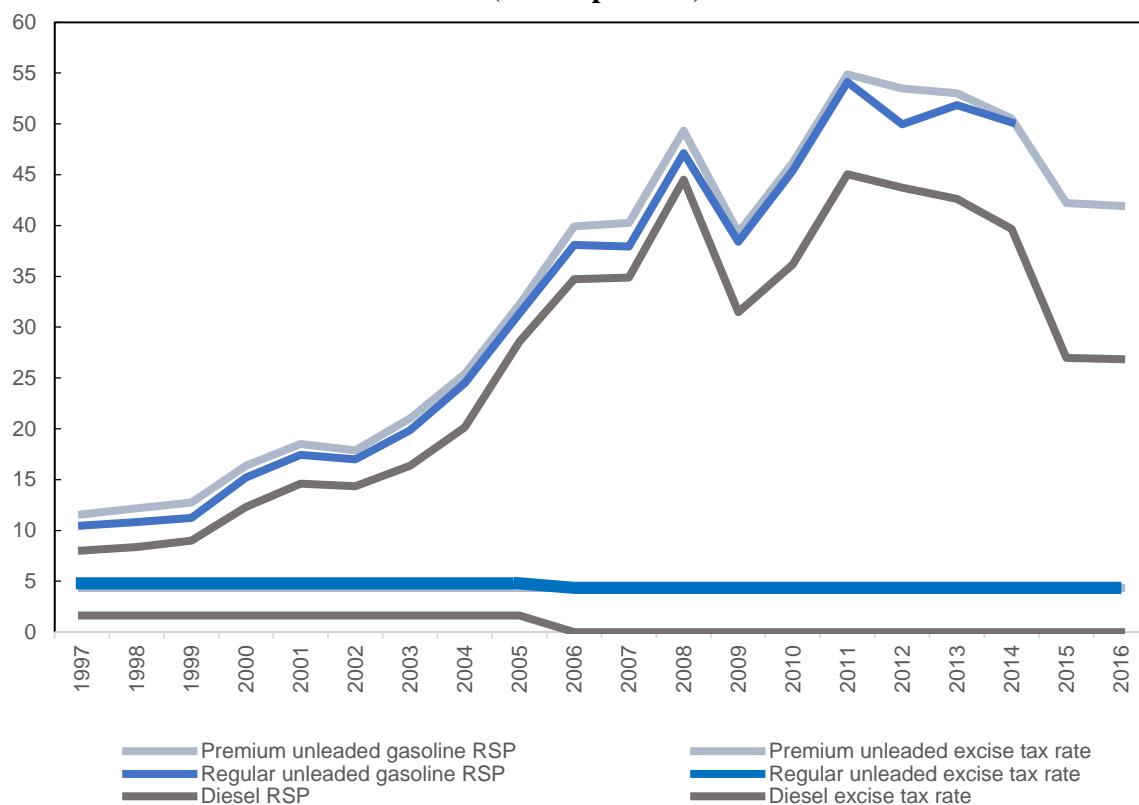
Income decile	VAT burden as % of HH income			Change in VAT burden (in million pesos)	Change in VAT burden (in million pesos)
	Existing	HB 5636	Change in VAT burden		
First	8.12	8.55	0.432	1,041	3.8
Second	7.63	8.03	0.406	1,342	4.9
Third	7.41	7.81	0.395	1,516	5.6
Fourth	7.29	7.68	0.391	1,769	6.5
Fifth	7.37	7.77	0.396	2,060	7.6
Sixth	7.37	7.77	0.397	2,451	9.0
Seventh	7.20	7.59	0.390	2,809	10.3
Eighth	7.12	7.51	0.388	3,348	12.3
Ninth	7.00	7.39	0.384	4,186	15.4
Tenth	6.09	6.42	0.332	6,669	24.5
Total	6.95	7.32	0.376	27,190	100.0
RS index	-0.0029	-0.0030	-0.0001		

* VAT borne by households as % of household income

C. Excise tax on petroleum products

Since 1997, excise tax rates on petroleum products have either been fixed in nominal peso terms (e.g., gasoline, avturbo/ jet fuel) or reduced to zero in the interim (e.g., diesel, kerosene and bunker fuel oil in 2005).¹⁴ As such, the revenue take from the source has contracted over time due to the erosion of the peso denominated tax rates by inflation even as retail prices of petroleum prices have risen at a faster than inflation (**Figure 1**). Consequently, country's excise tax rates on petroleum products are significantly lower than international standards (**Figure 2**). In particular, the excise tax on premium unleaded gasoline in most OECD countries amount to 25% - 40% of the pump price, compared with 9% in the Philippines (World Bank 2016). Given this perspective, the proposed increase in the in the petroleum excise tax rates in a staggered manner over three years starting in 2018 under HB 4774, HB 5636 and SB 1408 appears to be well justified (**Table 8**).¹⁵

**Figure 1. Average retail sales prices and excise tax rates of selected petroleum products, 1997-2016
(in PhP per liter)**



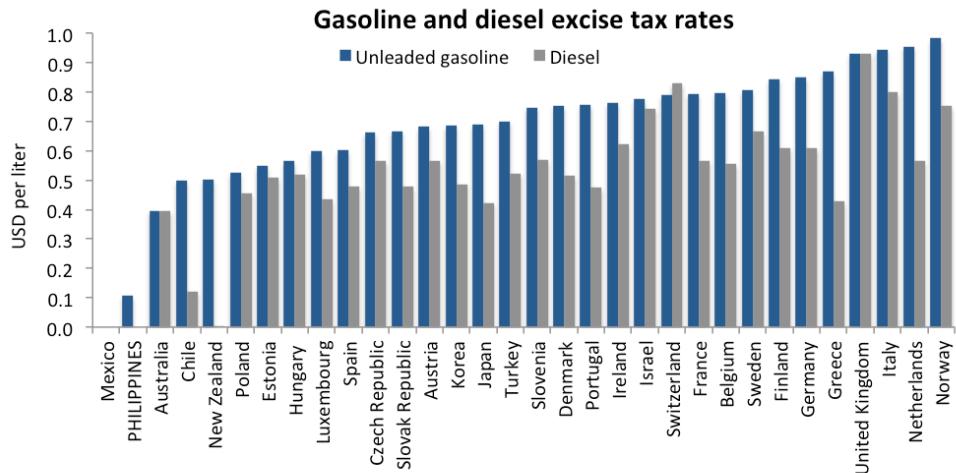
Source of basic data: Department of Energy

Note: Updated and adapted from "Philippine Economic Update," by The World Bank, Philippine Economic Update 2016, 35. 2016 by "World Bank Office Manila".

¹⁴ Liquefied petroleum gas (LPG) has been exempt from the excise tax since 1997.

¹⁵ Originally, under HB 4774, the proposal is to implement the first phase of the increase in July 2017.

Figure 2. Petroleum excise tax rates for gasoline and diesel in selected countries (2012)



Source: International Energy Agency (2012), World Bank staff estimates for Philippines

Note. Adapted from "Philippine Economic Update," by The World Bank, Philippine Economic Update 2016, 37. 2016 by "World Bank Office Manila".

Table 8. Petroleum excise tax rates under the current system and the proposed schedule under HB 4774/ HB 5636 and SB 1408

Type of fuel	Demand (liters) 2015	Current tax (P/L)	Excise tax proposal		
			2018	2019	2020
Diesel	9,137,285	0.00	3.00	5.00	6.00
Fuel oil	2,297,332	0.00	3.00	5.00	6.00
Gasoline *	4,716,642	4.35	7.00	9.00	10.00
LPG	2,359,695	0.00	3.00	5.00	6.00
Kerosene	128,954	0.00	3.00	5.00	6.00
Aviation turbo, jet fuel	558,751	3.67	7.00	9.00	10.00
Others	1,330,352	2.74	5.72	7.72	8.72

* refers to the tax rate for unleaded gasoline

Source of basic data: Department of Energy

Implications of the petroleum excise tax provisions of HB 4774, HB 5636 and SB 1408

Economic implications

The proposed amendments are also likely to have positive economic efficiency implications: (i) reducing road congestion and pollution from public and private transportation; and (ii) reducing the use of relatively more pollutive fuel as the tax on diesel increases from zero.¹⁶ However, the increase is expected to increase

¹⁶ In other countries, the excise tax rates for diesel are close to that of premium unleaded gasoline (World Bank 2016). The exemption of diesel from the excise tax effectively contributed to the reversal of the diesel consumption trend from -1.4% to 3.4%

inflation – an additional 0.6% increase in inflation in 2018, an additional increase of 0.4% increase in inflation in 2019 and an additional increase of 0.2% increase in inflation in 2020.¹⁷

Impact on government revenues from the petroleum excise tax

Assuming that the demand for petroleum products remains at the 2015 level (**Table 8**), the proposal to increase petroleum excise tax rates is projected to generate incremental revenues of PhP 30 billion in the second half of 2017, PhP 101.3 billion in 2018, and PhP 121.7 billion from 2019 onwards.

Distribution of tax burden across income groups

Contrary to conventional wisdom, the incidence of the excise tax on petroleum products is mildly progressive as indicated by the positive Reynolds-Smolensky index (last row of **Table 9**). The tax incidence analysis undertaken for this study also suggests that the proposed increase in the excise tax rates on petroleum products under HB 4774, HB 5636 and SB 1408 will make the tax even more progressive than it is at present. Although the change in the excise tax burden when expressed as a percentage of household income does not monotonically increase as household per capita income rises from decile 1 to decile 9, it does so from deciles 2 to 9 (columns 4 to 6 of **Table 9**). Nonetheless, the share of the various income deciles in the total increase in the excise tax burden increases as household per capita income rises.

D. Excise tax on automobiles

The excise tax on automobiles is levied on the basis of the net selling price of the manufacturer or importer of the same. At present, the schedule has four brackets with marginal tax rates ranging from 2% to 60%. HB 4774 and SB 1408 propose a new schedule that will at least double the excise tax on automobiles with larger increases applicable to higher priced automobiles (**Table 10**). In contrast, while HB 5636 proposes to double the excise tax applicable to the first two price brackets (i.e., the two least expensive brackets) just like HB 4474 and SB 1408, it proposes smaller increases in the excise tax applicable to the top three brackets.

Implications of proposed increase in excise tax on automobiles

Economic implications

All three bills are likely to have a negative impact on government's Comprehensive Automotive Resurgence Strategy (CARS) program which was established in 2015. The program aims to provide time-bound, and performance-based fiscal support to attract strategic investments in the manufacturing of motor vehicles and parts. To date, two auto manufacturers have signed up to participate in the program: Mitsubishi and Toyota. Mitsubishi is scheduled to start production in 2017.

While some may be skeptical of the prospects of the CARS program, the proposal to double the excise tax that will applicable on the very models that will be produced under the program (i.e., those in first two brackets of the tax rate schedule) is indicative of policy reversal that foreign investors are wary about. But beyond bad signaling, the higher taxes under the TRAIN will surely dampen demand for automobiles and work against the objectives of the CARS program. This represents a classic case of government taking away with its left hand what its right hand has given.

between 2006 and 2013, likely working against the government's efforts to encourage the use of cleaner energy resources (*ibid* 2016).

¹⁷ The methodology used to estimate the impact on inflation of the increase in petroleum excise tax is described in **Annex 3**.

Table 9. Change in petroleum excise tax burden due to TRAIN expressed as a percentage of household income and in absolute peso terms, by income decile

Income decile	Excise tax burden as % of HH income					Change in excise tax burden (in million pesos)			
	Existing	HB 5636 (year 2)	Change* in excise tax - year 2	HB 5636 (year 3)	Change* in excise tax - year 3	Change* in excise tax - year 2	% distribution - year 2	Change* in excise tax - year 2	% distribution - year 3
First	0.29	1.42	1.13	1.65	1.36	2,726	3.1	3,279	3.1
Second	0.28	1.37	1.09	1.59	1.31	3,602	4.1	4,333	4.1
Third	0.29	1.39	1.10	1.61	1.33	4,231	4.9	5,089	4.9
Fourth	0.29	1.40	1.12	1.63	1.34	5,051	5.8	6,076	5.8
Fifth	0.31	1.49	1.19	1.73	1.43	6,170	7.1	7,423	7.1
Sixth	0.32	1.53	1.22	1.78	1.46	7,512	8.6	9,036	8.6
Seventh	0.32	1.54	1.23	1.79	1.47	8,825	10.1	10,616	10.1
Eighth	0.32	1.57	1.25	1.82	1.50	10,747	12.3	12,928	12.3
Ninth	0.32	1.58	1.25	1.83	1.51	13,665	15.7	16,438	15.7
Tenth	0.32	1.55	1.23	1.79	1.48	24,675	28.3	29,683	28.3
Total	0.31	1.52	1.21	1.76	1.45	87,204	100.0	104,901	100.0
RS index	0.0001	0.0003	0.0002	0.0004	0.0003				

* change measured relative to existing levels

Table 10. Excise tax rates on automobiles, current and proposed under HB 4774, HB 5636 and SB 1408

Manufacturer's or importers net selling price	Excise tax			
	Present	HB 4774, SB 1408	HB 5636 - year 1	HB 5636 - year 2
up to PhP 600,000	2%	4%	3%	4%
over PhP 600,000 to PhP 1.1 million	PhP 20,000 + 20% of excess over PhP 600,000	PhP 24,000 + 40% of excess over PhP 600,000	PhP 18,000 + 30% of excess over PhP 600,000	PhP 24,000 + 40% of excess over PhP 600,000
over PhP 1.1 million to PhP 2.1 million	PhP 112,000 + 40% of excess over PhP 1.1 million	PhP 224,000 + 100% of excess over PhP 1.1 million	PhP 168,000 + 50% of excess over PhP 1.1 million	PhP 224,000 + 60% of excess over PhP 1.1 million
Over PhP 2.1 million to PhP 3.1 million)	PhP 512,000 + 60% of excess over PhP 2.1 million	PhP 1,224,000 + 200% of excess over PhP 2.1 million	PhP 668,000 + 80% of excess over PhP 2.1 million	PhP 824,000 + 100% of excess over PhP 2.1 million
Over PhP 3.1 million			PhP 1,468,000 + 90% of excess over PhP 3.1 million	PhP 1,824,000 + 120% of excess over PhP 3.1 million

Impact on government revenues from the excise tax on automobiles

The Department of Finance (DOF) estimates the revenue impact of the proposed increase in the excise tax on automobiles at PhP 24 billion a year. Due to lack of access to data on automobile sales by price bracket, this study is unable to arrive at an independent estimate of revenue impact of the proposed increase in the excise tax on automobiles.

Distribution of tax burden across income groups

The incidence of the proposed increase in excise tax on automobiles is expected to be progressive. The 2015 FIES shows that only the richest 4 income deciles are actually able to afford to buy new cars. Moreover, the excise tax on automobiles has been tagged as a luxury tax. As such, one would expect that the proposed change in the tax under TRAIN will make the tax even more progressive than it is now. While this is true of HB 4774 and SB 1408, it is not so in the case of HB 5636.

E. Excise tax on sugar sweetened beverages

The imposition of the excise tax on sugar sweetened beverages was not originally part of the Package 1 of the TRAIN, and thus, not included in HB 4774 and SB 1408. It was introduced during the House deliberations on the TRAIN.

HB 5636 proposes to impose an excise tax equal to PhP 10 per liter of sugar sweetened beverages (SSBs). Under this bill, sugar sweetened beverage refers to non-alcoholic beverage which may be sold in liquid form, syrup or concentrate, or a solid mixture that is added to water that contains caloric sweeteners, or artificial/ non-caloric sweeteners.

Proponents of a SSB tax, not only in the Philippines but also in other parts of the globe, argue that its imposition will help reduce the consumption of SSBs and reduce, thereby, the risk of obesity and associated diseases like diabetes, cardiovascular diseases and some types of cancer.¹⁸

Economic justification for the introduction of an excise tax on sugar sweetened beverages

The science behind it

A good number of studies provide empirical evidence linking higher SSB intake, on the one hand, and weight gain, diabetes, metabolic syndrome, and lower intakes of healthier diet options, on the other.¹⁹

- A meta-analysis of 32 original articles (20 in children and 12 in adults) on the SSB - weight gain relationship found (i) reductions in body mass index (BMI) gain when SSBs are reduced in randomized control trials (RCTs) in children, (ii) showed increases in body weight when SSBs were added in RCTs in adults, and (iii) more pronounced benefits in preventing weight gain in SSB substitution trials in RCTs in children (Malik VS, Pan A, Willett WC, and Hu FB 2013).

¹⁸ A number of countries have imposed a SSB tax – Norway in 2017, Mexico in 2014, France in 2012, and Finland and Hungary in 2011. A soda tax will take effect in Ireland and the United Kingdom in 2018. A soda tax has also been in place in a number of US cities including Berkeley, San Francisco, Oakland, Albany in California, Boulder in Colorado, Seattle in Washington, Cook County in Illinois and Philadelphia.

¹⁹ Metabolic syndrome is a cluster of conditions - increased blood pressure, high blood sugar, excess body fat around the waist, and abnormal cholesterol or triglyceride levels - that occur together, increasing your risk of heart disease, stroke and diabetes (<http://www.mayoclinic.org/diseases-conditions/metabolic-syndrome/home/ovc-20197517> accessed Aug 24, 2017).

- A random-effects meta-analysis of cohort studies comparing SSB intake in the highest to lowest quantiles in relation to the risk of metabolic syndrome and type 2 diabetes found that (i) individuals in the highest quantile of SSB intake (most often 1-2 servings/day) had a 26% greater risk of developing type 2 diabetes than those in the lowest quantile of SSB intake (none or less than 1 serving per month), and (ii) individuals in the highest quantile of SSB intake had a 20% greater risk of developing metabolic syndrome than those in the lowest quantile of SSB intake (Malik VS, Popkin BM, Bray GA, Després JP, Willett WC, and Hu FB 2010).
- A meta-analysis of 88 studies on the association between SSB intake and nutrition and health outcomes found clear associations between SSB intake and (i) increased energy intake and body weight, (ii) lower intakes of milk, calcium, and other nutrients and with an increased risk of several medical problems like diabetes (Vartanian LR, Schwartz MB, and Brownell KD 2007). Moreover, this study documents larger effect sizes in studies with stronger methods (longitudinal and experimental vs cross-sectional studies).

Importance obesity, diabetes and cardiovascular disease in the Philippines

- In 2013, 8.3% of children aged 10-19 and 31.1% of all adults are either overweight or obese based on the WHO BMI classification (FNRI 2015). Prevalence of overweight/ obesity among adults increased persistently from 16.6% in 1993 to 31.1% in 2013.
- In 2013, about 66% of the female adult population exhibits a high waist to hip ratio (WHR) which is indicative of android obesity or adiposity which is a major risk factor in the development of non-communicable diseases. Moreover, the percentage of female adults with high WHR increased from 39.5% in 1998, to 63.2% in 2013. In contrast, the prevalence of high WHR among males adults went up from 6.9% in 2011 to 8.0% in 2013 (FNRI 2013).
- Diseases of the heart and diseases of the vascular system ranked first and second and diabetes sixth among the 10 leading causes of mortality in the Philippines in 2013. On the other hand, hypertension ranked third among the 10 leading causes of morbidity in 2013 (DOH 2013).

Negative externality of SSB consumption to justify imposition of tax on SSB

For an SSB tax to be justifiable on economic grounds, it is not enough to establish the link between SSB intake, on the one hand, and weight gain, diabetes, metabolic syndrome and cardiovascular disease; it is essential as well that SSB consumption create negative externality/ ies. That is, consumption of SSBs do not only result in health problems for the consumers themselves but also cause the wider public to bear the burden of the economic costs of the same.

Some analysts have argued that such negative externality is absent in the Philippines primarily because a large part of health care cost is borne by households themselves in the form of out-of-pocket expense. While this is true, it should be pointed out that the burden of non-communicable diseases associated with weight gain and SSB intake is also borne by the taxpayers in general to the extent that the majority of less well-off population rely on the public health system. At the same, the national government has been paying for the health insurance premiums of indigents and senior citizens since 2013. This move has allowed the Philhealth to broaden its coverage from 82% in 2011 to 91% in 2016 with 55% of all Philhealth beneficiaries accounted for indigents and senior citizens. The national government has set aside PhP 37 billion for the health insurance premium of indigents and PhP 13 billion for senior citizens in 2017. Excessive

consumption of SSBs and the associated higher prevalence of the various non-communicable diseases (NCDs) also results in loss in economy-wide productivity.

Effectiveness of SSB tax in reducing SSB consumption and regressivity of SSB tax

Evidence from the Mexico experience suggests that (i) consumption of SSB is responsive to the SSB tax (i.e., the 10% SSB tax resulted in a 10% reduction in consumption); and (ii) the elasticity of demand for SSBs is greatest among the poor. Arguably, the latter finding would tend to mute the regressive impact of the SSB tax to the extent that “if the poor consume much less soda when its price increases, the poor pay less in tax revenue and will suffer fewer health care costs” (Pratt 2016).

However, international experience also indicates that the SSB tax will be more effective if the tax is imposed on the sugar content of SSBs rather than volume of liquid.

Impact on government revenues from the proposed excise tax on sugar sweetened beverages under HB 5636

The DOF estimates revenue gain from the introduction of this tax to be equal to PhP 47 billion per year. This study is unable to arrive at an independent estimate of the revenue impact of this proposal.

III. SUMMARY AND CONCLUSIONS

The overarching objective of HB 4774 is laudable. It seeks to improve the fairness, efficiency, and simplicity of the tax system while at the same time protecting the national government's aggregate revenue take. The package is a mix of revenue increasing and revenue losing measures. As such, the risk of Congress enacting solely the revenue losing measures is minimized. The inclusion of compensatory measures (i.e., targeted subsidies) for adversely affected sectors is also worth noting.

Overall, the proposed reforms are expected to generate additional revenues of PhP 51.3 billion in 2018, PhP 9.65 billion in 2019, PhP 99.9 billion in 2020 onwards (**Table 11**). These estimates of the incremental revenues from the TRAIN are just about half of the official estimates initially. Moreover, as discussed earlier, the high estimates are unlikely to be achieved due to poor incentives for SEPs to improve tax compliance. These developments provide a more conservative view on the ability of the TRAIN to fund the present administration's ambitious "build, build, build" program.

Table 11. Revenue impact of HB 5636 (in million pesos)

	2018	2019	2020
PIT on wage income ^{a/}	(178,181)	(178,181)	(195,310)
PIT on income of SEPs ^{b/}	74,888	74,888	74,888
PIT	(103,293)	(103,293)	(120,422)
VAT	31,273	31,273	31,273
Excise tax on petroleum prod	60,097	101,155	121,684
Other percentage tax ^{c/}	(3,784)	(3,784)	(3,784)
Excise tax on automobiles	20,000	24,100	24,100
Excise tax on "sugary" beverages ^{d/}	47,000	47,000	47,000
Total 1 (high estimate)	51,294	96,452	99,852
% to GDP	0.4	0.7	0.8
5 percentage point reduction in coll eff of PIT on SEP	(32,950)	(32,950)	(32,950)
Total 2 (low estimate)	18,344	63,502	66,901
% to GDP	0.1	0.5	0.5

a/ high probability of being realized

b/ subject to uncertainty

c/ reduction in revenues from "other percentage tax" collected from entities with gross sales/ receipts below VAT ceiling for "small enterprises" due to HB 5636

d/ based on DOF estimates

The risk of decline in compliance is even more worrisome given a recent downturn in the performance of key tax administration agencies. **Table 12** shows no improvement in the revenues collected by the BOC from the second semester of 2015 relative to the same period in 2016 and, then again, from the first semester of 2016 to the first semester of 2017. The BIR, meanwhile, reported a slight decrease collection-to-GDP

ratio in the first semesters of the present administration. This highlights the need for stricter enforcement and tax administration, as well as the repeal of the bank secrecy law²⁰, which has been in place since 1955.

Table 12. Tax to GDP ratio, semestral, 2008-2017

Year	BIR Revenues			BOC Revenues		
	S1	S2	Full Year	S1	S2	Full Year
2008	10.7	9.5	10.1	3.2	3.5	3.4
2009	9.9	8.8	9.3	2.8	2.7	2.7
2010	9.4	8.9	9.1	3.0	2.7	2.9
2011	9.8	9.2	9.5	2.8	2.7	2.7
2012	10.4	9.7	10.0	2.8	2.6	2.7
2013	10.5	10.3	10.5	2.6	2.6	2.6
2014	10.7	10.5	10.6	2.9	3.0	2.9
2015	11.1	10.4	10.8	2.8	2.7	2.8
2016	11.4	10.3	10.8	2.8	2.7	2.7
2017	11.3			2.8		

Meanwhile, the change in the tax burden as a percentage of household income if HB 5636 were to be implemented is highest for the poorest decile (i.e., an increase of 4% of household income) and declines as income rises (e.g., a decrease of 2.8% of household income for the richest decile), indicating the overall regressive character of the reform when one abstracts from proposed targeted subsidies (**Table 13**). At the same time, HB 5636 is estimated to result in a net income transfer from households in deciles 1 to 8 in favor of deciles 9 to 10 (**Table 14**). These findings support the need to compensate the poorer deciles, e.g., the poorest two or poorest four deciles, through targeted subsidies for a 3-4 years, a longer period than that proposed under HB 4774 and SB 1408. The amount of targeted needed by the average household in the different deciles are shown in **Table 15**.

Finally, one of the emerging risks in the continuing debate in and out of Congress on the various provisions of the TRAIN to date relates to heated competition to earmark the incremental revenues for very specific programs that will tend to cater to specific collectives at the expense of more strategic public investments projects.

²⁰ Section 2 of RA 1405 entitled “An Act Prohibiting Disclosure of or Inquiry into, Deposits with any Banking Institution and Providing Penalty Therefor” states: ‘All deposits of whatever nature with banks or banking institutions in the Philippines including investments in bonds issued by the Government of the Philippines, its political subdivisions and its instrumentalities, are hereby considered as of an absolutely confidential nature and may not be examined, inquired or looked into by any person, government official, bureau or office, except when the examination is made in the course of a special or general examination of a bank and is specifically authorized by the Monetary Board after being satisfied that there is reasonable ground to believe that a bank fraud or serious irregularity has been or is being committed and that it is necessary to look into the deposit to establish such fraud or irregularity, or when the examination is made by an independent auditor hired by the bank to conduct its regular audit provided that the examination is for audit purposes only and the results thereof shall be for the exclusive use of the bank, or upon written permission of the depositor, or in cases of impeachment, or upon order of a competent court in cases of bribery or dereliction of duty of public officials, or in cases where the money deposited or invested is the subject matter of the litigation.’

Table 13. Change in the tax burden due to HB 5636 as a percentage of household income across income deciles, 2020 onwards

Income decile	PIT	VAT	Excise tax on petroleum products	Total
First	2.22	0.43	1.36	4.01
Second	1.90	0.41	1.31	3.62
Third	1.59	0.40	1.33	3.31
Fourth	1.10	0.39	1.34	2.83
Fifth	0.66	0.40	1.43	2.48
Sixth	-0.01	0.40	1.46	1.86
Seventh	-0.78	0.39	1.47	1.08
Eighth	-1.66	0.39	1.50	0.22
Ninth	-2.98	0.38	1.51	-1.09
Tenth	-4.68	0.33	1.48	-2.87
Total	-1.67	0.38	1.45	0.16

* positive (negative) sign indicates increase (decrease) in tax burden

Table 14. Distribution of change in tax burden due to HB 4774, 2020 onwards

Income decile	PIT (million pesos)	% distn - PIT	VAT (million pesos)	% distn - VAT	Excise tax on petrol (million pesos)	% distn - excise on petrol	All tax changes	% distn - All taxes
First	5,348	4.4	1,041	3.8	3,279	3.1	9,668	82.8
Second	6,268	5.2	1,342	4.9	4,333	4.1	11,943	102.3
Third	6,085	5.1	1,516	5.6	5,089	4.9	12,690	108.7
Fourth	4,985	4.1	1,769	6.5	6,076	5.8	12,831	110.0
Fifth	3,411	2.8	2,060	7.6	7,423	7.1	12,893	110.5
Sixth	(38)	0.0	2,451	9.0	9,036	8.6	11,449	98.1
Seventh	(5,636)	-4.7	2,809	10.3	10,616	10.1	7,789	66.7
Eighth	(14,354)	-11.9	3,348	12.3	12,928	12.3	1,922	16.5
Ninth	(32,513)	-27.0	4,186	15.4	16,438	15.7	(11,888)	-101.9
Tenth	(93,978)	-78.0	6,669	24.5	29,683	28.3	(57,626)	-493.8
Total	(120,422)	100.0	27,190	100.0	104,901	100.0	11,669	100.0

Table 15. Change in aggregate tax burden for each decile and average tax burden per household due to HB 5636

Income decile	Aggregate change in tax burden for the decile (in million pesos)	Change in average tax burden per household per year (in pesos)	Change in average tax burden per household per month (in pesos)
First	9,668	4,259	355
Second	11,943	5,261	438
Third	12,690	5,590	466
Fourth	12,831	5,652	471
Fifth	12,893	5,680	473
Sixth	11,449	5,044	420
Seventh	7,789	3,431	286
Eighth	1,922	847	71
Ninth	-11,888	-5,237	-436
Tenth	-57,626	-25,386	-2115
Total	11,669	5,141	428

ANNEXES

Annex 1. Illustrative computations of tax liability and ETR (relative to net income) of SEPs with alternative levels of gross sales/ receipts, assuming alternative profit margins

Annex1.a. Illustrative computation of tax liability and ETR (relative to net income) of SEPs with gross sales/ receipts equal to PhP 1 million, assuming alternative profit margins

Gross sales (GS)/ receipts (GR)	Profit margin = ratio of net income to GS/ GR	Net income	Tax liability (TL) of SEP = 8% tax on GS/ GR	Ratio of TL to net income (%)	Tax liability if net income were wage income	Equivalent ETR if net income were wage income
1,000,000	0.1	100,000	80,000	80.0	0	0
1,000,000	0.2	200,000	80,000	40.0	0	0
1,000,000	0.267	267,000	80,000	30.0	2,550	1.0
1,000,000	0.3	300,000	80,000	26.7	7,500	2.5
1,000,000	0.45	450,000	80,000	17.8	32,500	7.2
1,000,000	0.5	500,000	80,000	16.0	42,500	8.5
1,000,000	0.6875	687,500	80,000	11.6	80,000	11.6
1,000,000	0.7	700,000	80,000	11.4	82,500	11.8
1,000,000	0.8	800,000	80,000	10.0	102,500	12.8
1,000,000	0.9	900,000	80,000	8.9	127,500	14.2

Annex1.b. Illustrative computation of tax liability and ETR (relative to net income) of SEPs with gross sales/ receipts equal to PhP 1.5 million, assuming alternative profit margins

Gross sales (GS)/ receipts (GR)	Profit margin = ratio of net income to GS/ GR	Net income	Tax liability (TL) of SEP = 8% tax on GS/ GR	Ratio of TL to net income (%)	Tax liability if net income were wage income	Equivalent ETR if net income were wage income
1,500,000	0.1	150,000	120,000	80.0	0	0
1,500,000	0.2	300,000	120,000	40.0	7,500	2.5
1,500,000	0.267	400,500	120,000	30.0	22,600	5.6
1,500,000	0.3	450,000	120,000	26.7	32,500	7.2
1,500,000	0.45	675,000	120,000	17.8	77,500	11.5
1,500,000	0.5	750,000	120,000	16.0	92,500	12.3
1,500,000	0.591	886,500	120,000	13.5	119,800	13.5
1,500,000	0.6	900,000	120,000	13.3	127,500	14.2
1,500,000	0.7	1,050,000	120,000	11.4	165,000	15.7
1,500,000	0.8	1,200,000	120,000	10.0	202,500	16.9
1,500,000	0.9	1,350,000	120,000	8.9	240,000	17.8

Annex 1.c. Illustrative computation of tax liability and ETR (relative to net income) of SEPs with gross sales/ receipts equal to PhP 2 million, assuming alternative profit margins

Gross sales (GS)/ receipts (GR)	Profit margin = ratio of net income to GS/ GR	Net income	Tax liability (TL) of SEP = 8% tax on GS/ GR	Ratio of TL to net income (%)	Tax liability if net income were wage income	Equivalent ETR if net income were wage income
2,000,000	0.1	200,000	160,000	80.0	0	0
2,000,000	0.2	400,000	160,000	40.0	22500	5.6
2,000,000	0.267	534,000	160,000	30.0	49300	9.2
2,000,000	0.3	600,000	160,000	26.7	62500	10.4
2,000,000	0.4	800,000	160,000	20.0	102500	12.8
2,000,000	0.515	1,030,000	160,000	15.5	160000	15.5
2,000,000	0.6	1,200,000	160,000	13.3	202500	16.9
2,000,000	0.7	1,400,000	160,000	11.4	252500	18.0
2,000,000	0.8	1,600,000	160,000	10.0	302500	18.9
2,000,000	0.9	1,800,000	160,000	8.9	352500	19.6

Annex 1. d. Illustrative computation of tax liability and ETR (relative to net income) of SEPs with gross sales/ receipts equal to PhP 2.99 million, assuming alternative profit margins

Gross sales (GS)/ receipts (GR)	Profit margin = ratio of net income to GS/ GR	Net income	Tax liability (TL) of SEP = 8% tax on GS/ GR	Ratio of TL to net income (%)	Tax liability if net income were wage income	Equivalent ETR if net income were wage income
2,999,999	0.1	300,000	240,000	80.0	7,500	2.5
2,999,999	0.2	600,000	240,000	40.0	62,500	10.4
2,999,999	0.267	801,000	240,000	30.0	102,750	12.8
2,999,999	0.3	900,000	240,000	26.7	127,500	14.2
2,999,999	0.45	1,350,000	240,000	17.8	240,000	17.8
2,999,999	0.5	1,500,000	240,000	16.0	277,500	18.5
2,999,999	0.6	1,799,999	240,000	13.3	352,500	19.6
2,999,999	0.7	2,099,999	240,000	11.4	432,500	20.6
2,999,999	0.8	2,399,999	240,000	10.0	522,500	21.8
2,999,999	0.9	2,699,999	240,000	8.9	612,500	22.7

Annex 2. How the value-added tax works

The value-added tax is a tax on consumption. It is an indirect tax collected at various stages of the production and distribution chain, much like the turnover tax or multi-stage sales tax. However, the VAT does not result in tax cascading (i.e., tax-on-tax) that is characteristic of the latter. The seller of any good liable to a multi-stage turnover tax pays government the turnover tax rate times the value of its output. If said good (good A) is an input to another product, the tax “content” of this second product (good B) not only includes the turnover tax directly levied on it but also the turnover tax previously levied on its inputs. Tax cascading distorts the way of doing business, and provides undue incentive for vertical integration of business activity.

Under the current VAT system, a good/service is subject to one of three regimes: (i) VAT-able; (ii) a VAT-exempt; or (iii) zero-rated.

A. VAT-able good/service

The seller of a VAT-able good pays government the VAT on its output (i.e., VAT rate times selling price before VAT) less the sum of VAT on all its VAT-able inputs (**Annex Table 2.1**). Typically, the invoice issued by the seller indicates the value of the good sold before tax and the amount of VAT levied on the said good. This signals that VAT on output is passed on (or shifted) to the buyer. VAT borne by producers is zero as (i) the VAT on their output is shifted forward to their buyers, and (ii) they are able to claim credit for the VAT they paid when they purchased their inputs. The VAT borne by the final consumer of a VAT-able good is equal to the VAT levied on the selling price before VAT.

B. VAT-exempt good/service

The seller of a VAT-exempt good does not pay the government any VAT on its output, but he is not able to claim credit for the VAT he paid on his VAT-able inputs. If the seller of VAT-exempt goods is not able to shift the VAT he paid on his VAT-able inputs forward to his buyers (**Annex Table 2.2**): (i) there is no change in the price of the VAT-exempt good; and (ii) the profit of producers of VAT-exempt goods goes down by the amount of the VAT on its inputs. On the other hand, if the seller of VAT-exempt goods is able to shift the VAT he paid on his VAT-able inputs forward to his buyers (**Annex Table 2.3**): (i) the price of a VAT-exempt good goes up by the amount of VAT on its inputs; (ii) producers who make use of a VAT-exempt good as intermediate input will not be able to claim credit for the VAT embedded in the price of their VAT-exempt inputs; (iii) there will be less incentive for these producers to use VAT-exempt inputs or to buy inputs from VAT-exempt sellers, resulting in tax cascading; (iv) final consumers of VAT-exempt goods will bear the burden of the VAT paid on the VAT-able inputs going into the production of the VAT-exempt good; and (v) the price of output of intermediate users of VAT-exempt goods and all producers/sellers down the production-distribution chain rises.

Exempting goods/services from the VAT will tend to result in administrative difficulties and encourage non-compliance (e.g., a multi-product firm will have to “allocate” the VAT credit on its VAT-able inputs to the production of its VAT-exempt product and VAT-able product). Meanwhile, VAT-exempt transactions (e.g., VAT exemption of sales of drugs and medicines, restaurant meals, etc. to senior citizens) tend to complicate the system even further.

C. Zero-rated goods/services

The seller of a zero-rated VAT-able good does not pay government any VAT on its output and is also able to claim credit/refund/rebate for the VAT he paid on his VAT-able inputs. For example, exports are zero-rated under the current VAT system.

Annex Table 2.1. Illustrative example* if all sales are VAT-able at 10%

	Primary producer (P)	Manufacturer (M)	Wholesaler (W)	Retailer (R)
A. Transactions exclusive of VAT				
1. Sales	400	1,200	1,400	2,000
2. Purchases (inputs)	-	400	1,200	1,400
3. Value-added	380	800	200	600
Wages	350	750	190	560
Capital income	20	50	10	40
B. If all sales are VAT-able at 10%				
1. Sales (or output) net of VAT	400	1,200	1,400	2,000
2.1. Purchases (or inputs) - VAT inclusive	-	440	1,320	1,400
2.2. Purchases (or inputs) - net of VAT credit	-	400	1,200	1,260
3. Value-added	380	800	200	600
Wages	350	750	190	560
Capital income	20	50	10	40
<i>Memo item:</i>				
Output sales before VAT	400	1200	1400	2000
Output sales inclusive of VAT	440	1320	1540	2200
VAT				
1. Output VAT	40	120	140	200
2. Input VAT	0	40	120	140
3. Net tax paid by seller to govt	40	80	20	60

* adapted from Cnossen (2011)

Annex Table 2.2. Illustrative example* if all sales are VAT-able at 10% except that of the manufacturer, who is tax-exempt (if seller is not able to shift input VAT forward to buyers)

	Primary producer (P)	Manufacturer (M)	Wholesaler (W)	Retailer (R)
A. Transactions exclusive of VAT				
1. Sales	400	1,200	1,400	2,000
2. Purchases (inputs)	-	400	1,200	1,400
3. Value-added	380	800	200	600
Wages	350	750	190	560
Capital income	20	50	10	40
B. If sales of manufacturer is VAT-exempt but all other sales are VAT-able at 10%; manufacturer assumed not to be able to shift VAT on inputs to wholesaler				
1. Sales (or output) net of VAT	400	1200	1400	2000
2.1. Purchases (or inputs) - VAT inclusive	0	440	1200	1540
2.2. Purchases (or inputs) - net of VAT credit	0	440	1200	1400
3. Value-added	380	760	200	600
Wages	350	750	190	560
Capital income	20	10	10	40
Memo item:				
Output sales before VAT	400	1200	1400	2000
Output sales inclusive of VAT	440	1200	1540	2200
VAT				
1. Output VAT	40	0	140	200
2. Input VAT	0	0	0	140
3. Net tax paid by seller to govt	40	0	140	60

* adapted from Crossen (2011)

Annex Table 2.3. Illustrative example* if all sales are VAT-able at 10% except that of the manufacturer, who is tax-exempt (if seller is able to shift input VAT forward to buyers)

	Primary producer (P)	Manufacturer (M)	Wholesaler (W)	Retailer (R)
A. Transactions exclusive of VAT				
1. Sales	400	1,200	1,400	2,000
2. Purchases (inputs)	-	400	1,200	1,400
3. Value-added	380	800	200	600
Wages	350	750	190	560
Capital income	20	50	10	40
B. If sales of manufacturer is VAT-exempt but all other sales are VAT-able at 10%; manufacturer assumed to be able to shift VAT on inputs to wholesaler				
1. Sales (or output) net of VAT	400	1240	1440	2040
2.1. Purchases (or inputs) - VAT inclusive	0	440	1240	1584
2.2. Purchases (or inputs) - net of VAT credit	0	440	1240	1440
3. Value-added	380	800	200	600
Wages	350	750	190	560
Capital income	20	50	10	40
Memo item:				
Output sales before VAT	400	1240	1440	2040
Output sales inclusive of VAT	440	1240	1584	2244
VAT				
1. Output VAT	40	0	144	204
2. Input VAT	-	0	0	144
3. Net tax paid by seller to govt	40	0	144	60

* adapted from Cnossen (2011)

Annex 3. Impact of changing the VAT treatment of indirect exporters from zero-rated to VAT-able

This short note is an attempt to show computationally that the proposed change in the VAT treatment of indirect exporters will have no impact on government revenues.

Assume that the VAT rate is 12%. Further, assume that there are three types of firms – direct exporters, DX, indirect exporters, IX, and intermediate producers, IP. Under the existing regime, DX and IX are both zero-rated while IP is VAT-able. In contrast, under the reform regime, DX is zero-rated while both IX and IP are VAT-able.

VAT liability of direct exporter (DX) and indirect exporter (IX) under the existing regime

The VAT liability of the direct exporter, DX, under the existing regime is equal to its output VAT less its input VAT. Since DX is zero-rated, its output VAT is zero (i.e., zero times the VAT on its output). On the other hand, its input VAT is equal to the sum of the VAT paid on its intermediate inputs. Assume direct exporters uses two types of intermediate inputs in its production process – output of IX used as inputs of the direct exporter (IXq) and output of IP used as inputs of the direct exporter (DXip). Thus, the input VAT of DX is equal to: $(0*IXq + 0.12*DXip) = 0.12*DXip$. In sum, the total VAT liability of the direct exporter under the existing regime is equal to $-0.12*DXip$. In other words, the direct exporter will get a VAT refund equal to $0.12*DXip$.

On the other hand, the VAT liability of the indirect exporter, IX, under the existing regime is equal to its output VAT less its input VAT. Since it is zero-rated, its output VAT is zero. The input VAT of the indirect exporter, IX, is equal to: $0.12*IXip$ (where IXip denotes the VAT-able intermediate inputs used in the production of IXq). In sum, the total VAT liability of indirect exporter is equal to $-0.12*IXip$. In other words, the indirect exporter will get a VAT refund equal to $0.12*IXip$.

Total government VAT revenues from DX and IX under the existing regime would be equal to: -
 $0.12*DXip - 0.12*IXip$

VAT liability of direct exporter (DX) and indirect exporter (IX) under the reform regime

Now, consider the reform regime. The VAT liability of the direct exporter under the reform regime is equal to its output VAT less its input VAT. Since DX is zero-rated, its output VAT is zero. On the other hand, its input VAT is equal to the VAT paid on its input bought from the indirect exporter (IXq) plus the VAT paid on its input bought from other intermediate producers, (DXip). Since IX is now VAT-able, the input VAT of the direct exporter is equal to $(0.12*IXq + 0.12*DXip)$.

On the other hand, the VAT liability of the indirect exporter, IX, under the reform regime is equal to its output VAT less its input VAT. Since it is now VAT-able, its output VAT is equal to $0.12*IXq$.²¹ The input VAT of the indirect exporter, IX, is equal to: $0.12*IXip$ (where IXip denote the VAT-able intermediate inputs used in the production of IXq). In sum, the total VAT liability of indirect exporter is equal to $(0.12*IXq - 0.12*IXip)$.

²¹ We assume here that the indirect exporter, IX, sells all of its output to the direct exporter.

Total government VAT revenues from DX and IX under the reform regime is then to (-0.12*DXip - 0.12 IXq) plus (0.12*IXq - 0.12*IXip) which is equal to (- 0.12*DXip – 0.12%IXip).

Thus, the difference between total government revenues under reform regime, on the one hand, and total government under the existing regime, on the other hand, is thus equal to zero as shown in the table below.

VAT regime	Direct Exporter (DX)	Indirect Exporter (IX)	Total = (DX) + (IX)
Existing regime (1)	- 0.12 (DXip)	- 0.12 (IXip)	- 0.12 (DXip) - 0.12 (IXip)
Reform regime (2)	- 0.12 (IXq) - 0.12 (DXip)	0.12 (IXq) – 0.12 (IXip)	- 0.12 (DXip) – 0.12 (IXip)
Difference = (2) - (1)	- 0.12 (IXq)	0.12 (IXq)	0

where:

- IXq denote output of indirect exporters which are used as intermediate inputs of direct exporters,
- IXip denote intermediate inputs used in the production of IX_o, and
- DXip denote other intermediate inputs used in the production of direct exports.

Annex 4. Methodology for estimating the price effect of the proposed increase in petroleum excise tax rates under HB 4774, HB 5636 and SB 1408

The methodology has two major steps. First, price-cost analysis was used to estimate the price effect of the increase in petroleum excise tax. The 2006 Input-Output (I-O) table was utilized for the analysis. The second step involved computing total household expenditures on items relevant to petroleum products. Source of the data for total expenditures was the 2012 Family Income and Expenditure Survey (FIES). Selected variables from the FIES were later on mapped to the IO sectors. Finally, to arrive at the tax take, the sectoral price effect was multiplied to the corresponding FIES expenditure data of the mapped items. A more detailed explanation of the two steps are provided in the next sections.

Price cost analysis. The methodology for the price cost analysis was adapted from Mijares and Samson (1980). Main data set used for this analysis is the 2006 Input-Output table. The method assumes that output prices of a particular sector would adjust to offset the increase in input prices. This is shown in the following equation:

$$(1) \quad p = (I - A')^{-1} (wl + v')$$

Where p represents price, wl represent wages and labor, v are the value added items, and $(I-A)$ corresponds to the identity matrix less the technology matrix. The inverse of the transposed $(I-A)$ would account for both direct and indirect output needed to satisfy final demand.

In terms of percentage change in prices with no assumed increase in wages, Equation 1 is equivalent to the following matrix notation form:

$$(2) \quad \begin{bmatrix} \Delta p_1 \\ \Delta p_2 \\ \vdots \\ \Delta p_n \end{bmatrix} = \begin{bmatrix} r_{11} & r_{21} & \cdots & r_{n1} \\ r_{12} & r_{22} & \cdots & r_{n2} \\ \vdots & \vdots & & \vdots \\ r_{1n} & r_{2n} & \cdots & r_{nn} \end{bmatrix} \begin{bmatrix} \Delta v_1 \\ \Delta v_2 \\ \vdots \\ \Delta v_n \end{bmatrix}$$

Where Δp refers to the change in price, Δv is the change in value added, and r_{ij} represents the coefficients of the inverse of the $(I-A)$ matrix. Since we are only concerned with the impact of the price increase in petroleum, we could already set $\Delta v=0$ for other sectors. For the petroleum sector (code 107 in the I-O table), Δv is computed as:

$$(3) \quad \Delta v_{107} = \frac{\Delta p_{107}}{r_{107,107}}$$

Using the computed value of Δv_{107} , the impact of the change in the price of petroleum by sector could now be simply estimated through the following equation:

$$(4) \quad \Delta p_i = r_{i,107} \Delta v_{107} \quad i = 1, 2, \dots, 240.$$

Where Δp_i refers to the change in price of sector i , and $r_{i,107}$ represents the coefficient of sector i in column 107 (manufacture of petroleum) of the inverse of the transposed (I-A).

Note that the price effect was computed for each year indicated in the schedule. The weighted average of the change in excise tax rates by petroleum type was used to estimate Δp_{107} in Equation 3; changes were relative to existing tax rates and prices of petroleum products in 2015. Meanwhile, the weights were derived from 2015 petroleum consumption data from the Department of Energy (DOE). The same method was employed to compute for the baseline price effect; however, it was assumed here that initial excise tax on petroleum is zero for all products.

Mapping of the FIES to the Input-Output tables of 2006. The value of household consumption of goods relevant to petroleum products was generated from the 2015 Family Income and Expenditure Survey dataset. The data was further broken down into income deciles to determine whether the new taxes are progressive or regressive.

The selected variables from the FIES were then mapped with the IO sectors. The IO sectors that have no equivalent match in FIES variables were dropped. After the matching process, the computed price effects were multiplied with the structure of household consumption derived from the FIES.

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