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Tax Policy and Employment Creation

Alexander Klemm, Isaias Coelho, Alan Duncan, and Li Liu



Technical Assistance Report

December 2017

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PREFACE

In response to a request from the State Administration of Taxation (SAT), a mission from the IMF's Fiscal Affairs Department (FAD) delivered a workshop on the effect of tax policy on employment creation, including in small and medium-sized enterprises (SMEs). The workshop took place in Yangzhou during September 11-16, 2017, and was followed by discussions in Beijing through September 22, 2017. The mission comprised Alexander Klemm (head), Li Liu (both FAD staff), Isaias Coelho, and Alan Duncan (both FAD external experts).

This report documents the mission's discussions with SAT's officials participating in the workshop and in Beijing. It presents an international perspective on the employment impact of tax policy, and develops recommendations taking into account the background in the People's Republic of China.

The mission met with Mr. Tianshu Luo, Director General, Mr. Shiyu Wang, Deputy Director General, Ms. Yi Liu, Director, Mr. Fangjian Jin, Principal Staff Member (all SAT Tax Policy Department); Mr. Guanghui Zeng, Vice President, Ms. Lianzhu Xin, Vice President (both Yangzhou Tax Institute); and many other SAT staff members from headquarters and local offices. The mission also met with Ms. Mingru Wang, Deputy Director, Mr. Jing Ma, Director, Ms. Xiangping Zhou, Deputy Director, Mr. Fan Yang, Principal Staff Member, Ms. Yuan Yuan, Staff Member (all Ministry of Finance Tax Policy Department). Moreover, the mission met with Prof. Shuanglin Lin (Peking University).

The mission wishes to express its sincere appreciation to the excellent support that it received from Mr. Yudong Zhou, Principal Staff Member, Ms. Lanshui Cao (both SAT), Ms. Wenzhen Zhang, Deputy Director, Mr. Maoquan Cui, Supervisor, and Mr. Cheng Xu, Secretary, (all Yangzhou Tax Institute) in coordinating the workshop. It also gratefully acknowledges the excellent interpretation by Baomin Zhang, Jianying Xu and Yuanyuan Zhang.

EXECUTIVE SUMMARY

This report discusses the impact of tax policy, including social security contributions, on employment in China, covering both taxation of employed labor and small and medium-sized enterprises. The findings draw on economic theory, international experiences, as well as discussions with Chinese authorities during a workshop in Yangzhou and meetings in Beijing.

Taxation of Labor

The personal income tax on wages is low, but the tax wedge, which includes social security contributions, is high and follows an unsteady pattern, rising, falling, and again rising.

Given a relatively weak link between social contributions and related benefits, they can both be analytically combined to study the impact on labor markets. A large minimum contribution to social security implies an extremely high participation tax rate for low-paid workers taking up employment, or a strong incentive for hiring workers that will not participate in the social security system (e.g., rural migrant workers). The temporary drop in the marginal tax wedge is the result of an upper limit on social security contributions, which is not aligned with personal income tax thresholds.

The taxation of labor differs strongly by type and location of employment. The schedular system of the personal income tax means that labor taxes differ depending on the category into which income falls. Wages and salaries, for example, face a progressive tax rate, rising from 3-45 percent, and a generous allowance, but the provision of professional services is taxed at a flat rate and with a lower allowance. Self-employed people and subcontractors also face progressive tax, but with a slightly different schedule. The tax wedge also differs by location, with rural workers paying much lower social security contributions on the same wage level, and some rate variation also across urban areas. Moreover, enforcement and administrative practices differ, leading to differences in effective tax wedges. In addition to tax and social security, many localities also require significant contributions to a housing fund, which represents an additional increase in labor costs for employers.

The mission proposes the following reform areas for consideration:

- Reduce social security contributions by lowering rates, lowering or abolishing the minimum contribution, or introducing an allowance, financed by reduction in the PIT allowance. Compensate the social security funds by a budgetary transfer.
- Apply the same tax rates and thresholds to all schedules that tax the remuneration of labor. As a first step, unify the assessment period of all labor-related schedules to 1 year, achieved either through a year-end adjustment in the final salary payment, or in case of non-salaried labor through tax returns.

- In the medium term, unify all labor income schedules under a single schedule, keeping it separate from capital income taxation.
- Reduce the differences between social security contribution rates and benefits across cities and municipalities. In the longer term, unify social security under a national scheme.
- Strengthen the link between contributions and pension benefits, by raising the weight of individual wage in the pension formula.
- Increase the transparency of the individual pension funds by regularly informing participants about accumulated amounts and rates of return.
- Assess the usefulness of the housing fund, and consider a reduction (possibly to zero) of the compulsory contribution rate.
- Maintain the individual as the basic unit of taxation.
- To help with costs that may result from taking up employment, specifically child and senior care costs, consider the introduction of PIT credits. A tax credit should be given preference over a deduction, because a deduction is worth more to higher-rate taxpayers. Moreover, a tax credit can be made refundable, benefiting even workers earning less than the personal allowance.

Taxation of Small Enterprises

The tax system is complex, creating challenges for small businesses. In addition to dealing with CIT, VAT, wage tax withholding and social security contributions, companies need to pay a number of earmarked taxes (known as “fees”), levied on different bases, with rates that vary by locality. There is a large number of tax incentives, with 83 of them targeting employment creation and innovation (as of July 2017).

Small businesses are offered some simplifications, but are likely to still face disproportionately greater compliance costs. There is a simplified VAT scheme for small scale taxpayers, but it may not always be beneficial, and there are restrictions to opting out. There are also simplified income tax arrangements for small businesses, with methods and rates specified at the municipal level. Many tax incentives work in the form of special deductions, which may not help new cash-constrained businesses that are not yet profitable.

As a result of tax incentives and tax surcharges, the VAT cannot fulfil its role as a tax on final consumption. Tax incentives that reduce a firm’s VAT liability (e.g., for the employment of disabled workers) and local taxes based on the net VAT liability create differences in VAT liabilities between firms producing the same products, making the tax a function of the production process rather than the final good.

On the taxation of small enterprises, the mission suggests the following areas for reform:

- Abolish earmarked taxes on companies, and replace lost revenues by a simple increase in the VAT rate. In the short run, replace the lost funds by transfers. In the longer term, a general assessment of fiscal federalism is needed to ensure that each level of government has the tax revenues and tax measures it needs to fund its spending requirements. This could include strengthening of other local taxes, notably the property tax.
- Review the list of tax incentives with a view to eliminate duplications, ineffective or excessively costly incentives.
- Abolish all tax incentives that work through VAT exemptions or additional refunds. If their policy rationale is strong, replace them by direct subsidies or incentives working through income taxes.
- Introduce a single definition of a small-scale taxpayer that can be used for various taxes and possibly other purposes.
- Replace the preferential tax rate for high-technology companies with an R&D income tax credit more directly linked to research spending. Make such credit refundable for SMEs and monitor to avoid misclassification and other fraud.
- Introduce an optional nationwide simplified income tax regime for small-scale taxpayers (covering PIT and CIT), allowing them to pay tax defined as a share of turnover, without the need for full book keeping.
- Ensure firms that wish to opt out of the current simplified VAT system do not face unnecessary obstacles. Such schemes are supposed to help taxpayers by reducing compliance costs, not to impose an additional tax burden. Ensure timely refunds of excess VAT credits (but monitor them closely to avoid fraud).

ABBREVIATIONS AND ACRONYMS

ASEAN	Association of Southeast Asian Nations
CNY	Chinese Yuan (Renminbi)
CIT	Corporate Income Tax
EITC	Earned Income Tax Credit
FAD	Fiscal Affairs Department
GB2	Generalized Beta II
GDP	Gross Domestic Product
IMF	International Monetary Fund
IRS	Internal Revenue Service
MoF	Ministry of Finance
OECD	Organisation for Economic Cooperation and Development
PIT	Personal Income Tax
R&D	Research and development
SAT	State Administration of Taxation
SME	Small and medium-sized enterprise
SSC	Social security contributions
TP	Tax Policy
USD	United States dollar
VAT	Value-Added Tax
WB	World Bank
WFTC	Working Families Tax Credit
WTO	World Trade Organization

I. INTRODUCTION

1. The State Administration of Taxation (SAT) and the International Monetary Fund (IMF) conducted a week-long workshop on tax policy and employment for the SAT in Yangzhou. The workshop included discussions on the costs and benefits of tax incentives, the impact of tax policy on employment, and the role of small and medium-sized enterprises (SMEs) in employment creation. Presentations covered underlying theories, international experiences, and the applicability to China. The workshop was attended by 72 SAT officials from the head and provincial offices, and was delivered via a combination of lectures, small-group in-depth discussions, and group presentations.

2. This report documents the mission’s discussions with SAT officials, discusses policy options, and is structured as follows. Section II discusses the taxation of labor, with particular attention to employment, covering economic theory, international experiences, and the current situation in China. Section III addresses SMEs, looking at their role in employment creation, the challenges they face, international experience with their tax treatment, and the approach used in China. Both sections provide conclusions on the findings most relevant for China and make recommendations for potential reforms.

II. TAXES ON LABOR

A. Taxation of Labor in China

3. Revenues from wage taxes and social contributions are relatively low in China (Table 1). Personal income taxes (PIT)—principally the wage tax—raise only 1.2 percent of GDP in revenues, compared to around 10 percent of GDP in many advanced economies and an OECD average of 8.4 percent of GDP. Revenues from social security contributions are much higher at 6.5 percent of GDP, but are nevertheless below the OECD average of 9 percent of GDP.

Table 1. General Government Revenue by Source for China and Comparators
(Percent of GDP)

Country	Year	Total Revenue	Tax Revenue + Social Contributions	Income, Profits, and Capital Gains				Pay-roll	Property	General Goods and Services	Inter-national Trade	Other Taxes	Social Contributions	Other Revenue
				Personal Income	Corporate Income	Other	Total							
China	2016	28.2	24.0	1.2	3.8	0.0	5.0			8.9	0.8	2.9	6.5	4.3
Australia	2014	34.1	27.8	11.4	4.7	0.0	16.1	1.4	2.8	5.1	0.7	1.7	0.0	6.3
France	2015	53.5	45.5	8.6	2.1	0.0	10.7	1.6	4.1	9.5	0.0	2.7	16.9	8.0
Germany	2015	44.7	36.9	9.9	1.7	0.0	11.6	0.0	1.1	9.1	0.0	1.1	14.0	7.7
India	2016	21.3	17.7	2.3	3.3	0.9	6.4			9.8	1.4	0.0	0.0	3.6
Italy	2015	47.8	43.1	11.3	2.0	0.5	13.8	0.0	2.8	8.9	0.0	4.6	13.0	4.7
Japan	2014	32.7	30.5	5.8	3.9	0.0	9.7	0.0	2.6	5.3	0.2	0.6	12.1	2.1
Korea	2015	21.3	25.2	4.4	3.2	0.0	7.6	0.1	3.1	5.9	0.6	1.2	6.7	-3.9
United Kingdom	2015	35.8	32.5	9.0	2.4	0.0	11.5	0.0	4.1	9.4	0.0	1.4	6.0	3.3
United States	2015	31.8	26.4	10.7	2.2	0.0	12.9	0.0	2.7	2.9	0.2	1.3	6.2	5.4
OECD average		40.3	33.9	8.4	2.8	0.3	11.5	0.4	1.9	9.4	0.1	1.6	9.0	6.3

Sources: WEO (Total Revenue, GDP, Revenue by source for China and India), OECD Revenue Statistics (remaining revenue data), and IMF staff calculations.

4. Chinese PIT is levied using a schedular system, with different sources of income taxed separately and with variations in allowances, thresholds, rates, and administrative arrangements (Table 2). The law distinguishes 11 categories of income. While most types of capital income are treated similarly, there are greater differences between different types of labor income. Income from wages and salaries enjoy a large allowance and very low introductory rate, but also face the highest top rate. Income from self-employment and sub-contracting is subject to a narrower range of marginal tax rates. Incomes for professional services and by authors are taxed at a flat rate, with different permissible deductions. Moreover, there are administrative differences across schedules. Assessment is per payment, monthly or annual, depending on schedule. Payment is mostly achieved through final withholding, but filing is required for certain income categories, and for annual incomes exceeding CNY 120,000 or for receiving wages or salaries from multiple sources. The tax unit is always the individual, with no adjustment for dependents or any integration between married or co-habiting earners.

Table 2. Overview of Personal Income Tax in China

Income Category	Marginal Tax Rate	Exemption/Deduction	Assessment Period	Filing Requirement
Wage and salaries	3%-45%	Annual personal allowance of CNY 42,000	Monthly	Filing required for those above annual income of CNY 120,000 or earning income from multiple employers
Self-employment income	5%-35%	Net of business costs	Annual	Monthly installment combined with year-end reconciliation
Sub-contractor earning	5%-35%	Annual business allowance of CNY 42,000	Annual	Filing required for year-end reconciliation
Professional services	20%	Deduction of CNY 800 for payment below CNY 4,000; deduction of 20% for payment above CNY 4,000	Per payment; Monthly	Final withholding
Author's remuneration	20% (statutory); 14% (effective)*	Deduction of CNY 800 for payment below CNY 4,000; deduction of 20% for payment above CNY 4,000	Per payment	Final withholding
Royalties	20%	Deduction of CNY 800 for payment below CNY 4,000; deduction of 20% for payment above CNY 4,000	Per payment	Final withholding
Interest, dividends, capital gains	20%	Dividends derived from companies listed on the Shanghai or Shenzhen Stock Exchanges are taxed at 10% if the underlying shares are held between 1 month and 1 year; and are exempt from IIT if the underlying shares are held for more than 1 year**	Per payment	Final withholding
Rental income	20%	Deduction of CNY 800 for payment below CNY 4,000; deduction of 20% for payment above CNY 4,000	Monthly	Final withholding
Transfer of property	20%		Per payment	Final withholding
Incidental income	20%		Per payment	Final withholding
Other income	20%		Per payment	Final withholding

Notes: * The tax base for author's remuneration is 70 percent of total payment.

** Cai Shui [2012] No. 85; Cai Shui [2015] No. 101.

Source: Detailed Rules for the Implementation of the Individual Income Tax Law of the People's Republic of China, Sept 11, 2011.

5. The top PIT rate on wages and salaries is the highest of all schedules and is also relatively high in international comparison. The top marginal tax rate has been at 45 percent for decades. It is relatively high compared to ASEAN-5 and OECD averages of about 32 and 36 percent, which have been declining moderately over the past decade. The top PIT rate is similar, though, to various advanced economies (Table 3). The top marginal tax rate applies, however, only to very high incomes and hence a very small fraction of all income earners. The large personal allowance (CNY 42,000) is about twice the level of the average wage, removing most workers from the tax net, with the remaining tax brackets also quite wide (Table 4).

Table 3. Personal Income Tax Rate in International Comparison

	(Percent)																
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
China	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
Australia	47	47	47	47	47	47	47	45	45	45	45	45	45	45	45	45	45
France	53	53	50	48	48	48	40	40	40	40	41	41	45	45	45	45	45
Germany	51	49	49	49	45	42	42	45	45	45	45	45	45	45	45	45	45
India	30	30	30	30	32	30	30	30	30	30	30	30	30	30	30	30	30
Italy	46	45	45	45	45	43	43	43	43	43	43	43	43	43	43	43	43
Japan	37	37	37	37	37	37	37	40	40	40	40	40	40	40	40	40	45
Korea	40	40	36	36	36	35	35	35	35	35	35	35	38	38	38	38	38
United Kingdom	40	40	40	40	40	40	40	40	40	40	50	50	50	45	45	45	45
United States	40	39	39	35	35	35	35	35	35	35	35	35	35	40	40	40	40
OECD Members	40.2	39.0	38.1	37.4	36.6	35.8	35.4	35.1	34.5	34.2	34.7	34.1	34.6	35.1	35.2	35.6	
ASEAN-5	38.2	37.8	37.6	36.6	36.4	34.4	34.4	34.4	34.4	32.2	32.0	32.0	32.0	31.6	31.6	31.6	
High Income (WB Classification)	39.3	38.2	37.6	36.9	35.9	35.6	35.2	34.5	33.9	33.4	33.7	33.3	33.4	33.8	33.9	33.7	

Source: FAD Tax Policy Rates Database.

Table 4. PIT on Wages and Salaries, 2016

Range of Income (CNY per year)	Marginal Tax Rate (Percent)
0	3
18,001	10
54,001	20
108,001	25
420,001	30
660,001	35
> 960,000	45

With a standard personal allowance of CNY 42,000

Source: Detailed Rules for the Implementation of the Individual Income Tax Law of the People's Republic of China, 2011.

6. In addition to PIT, wages and salaries of urban workers are subject to social security contributions covering pensions, health, unemployment, maternity, and occupational injuries (Table 5). There is no basic allowance for social security contributions. Moreover, a minimum employee contribution is required, assessed on an income set at 60 percent of the previous year's average wage of the locality. The maximum income subject to employee

contributions is set at 3 times the local average wage. The link between contributions and benefits is very weak, even for pensions, which are partly determined by local wage developments in addition to individual contributions.

Table 5. Social Security Contribution Rates for Urban Workers (Percent) 1/ 2/		
	Employee	Employer
Old age	8	20
Medical	2	8
Unemployment	1	2
Occupational injury	0	1
Maternity fund	0	1

Source: Social Security Insurance Law, People's Republic of China, 2011.
 1/ Social security insurance contributions paid by employees are deductible under the PIT, employer contributions are deductible under the CIT.
 2/ The rates are applied to a minimum and maximum base of 60 and 300 percent of the average wage in each locality.

7. Rural workers face a different social security system with much lower contribution rates and benefits. At the rural level, social security covers mostly pensions, and individuals can choose among a range of fixed contribution levels. Currently collection of social security insurance is at the local level, with differences in the strength of the social security administration and hence tax avoidance and evasion opportunities.

8. Employees and employers are also required to make contributions to the housing fund. The housing fund, which is separate from social security, provides mortgage assistance in the purchase of a residential house; in particular, it can be used to pay up to 70 percent of housing purchase costs. The contribution rate varies from location to location, depending on the policy of the local government, and ranges from 5 to 20 percent of the monthly salary both for the employer and the employee, with the most common contribution rate at 12 percent. Just as for social security, the maximum salary on which contributions are paid is set at three times the preceding year's average monthly salary of the locality.

9. Contributions to social security and the housing fund are excluded from the PIT base. This needs to be taken into account when adding them up to calculate the tax wedge. For example, at a marginal tax rate of 25 percent, the effective employee SSCs that are included as part of the labor tax cost stand at $(1-0.25)*0.11$, that is, 8.25 percent. Benefits received are also not taxable provided contributions do not exceed the limit set by local authorities.

10. Several preferential tax treatments are in place to encourage employment of certain targeted groups, including the disabled, veterans, the elderly, long-term unemployed and recent graduates. The preferential tax treatment may take the form of a more generous PIT exemption, a lower statutory tax rate, and/or reduced social security contributions (employer or employee levels), depending on localities. For example, self-employment income generated by these targeted groups in the form of sole proprietorship is exempt from VAT, city

maintenance and construction tax, education surcharges, local education surcharges, and PIT up to CNY 8,000 per year for up to three years. Moreover, similar preferential tax treatment applies to SMEs that employ these targeted groups (see Section III).

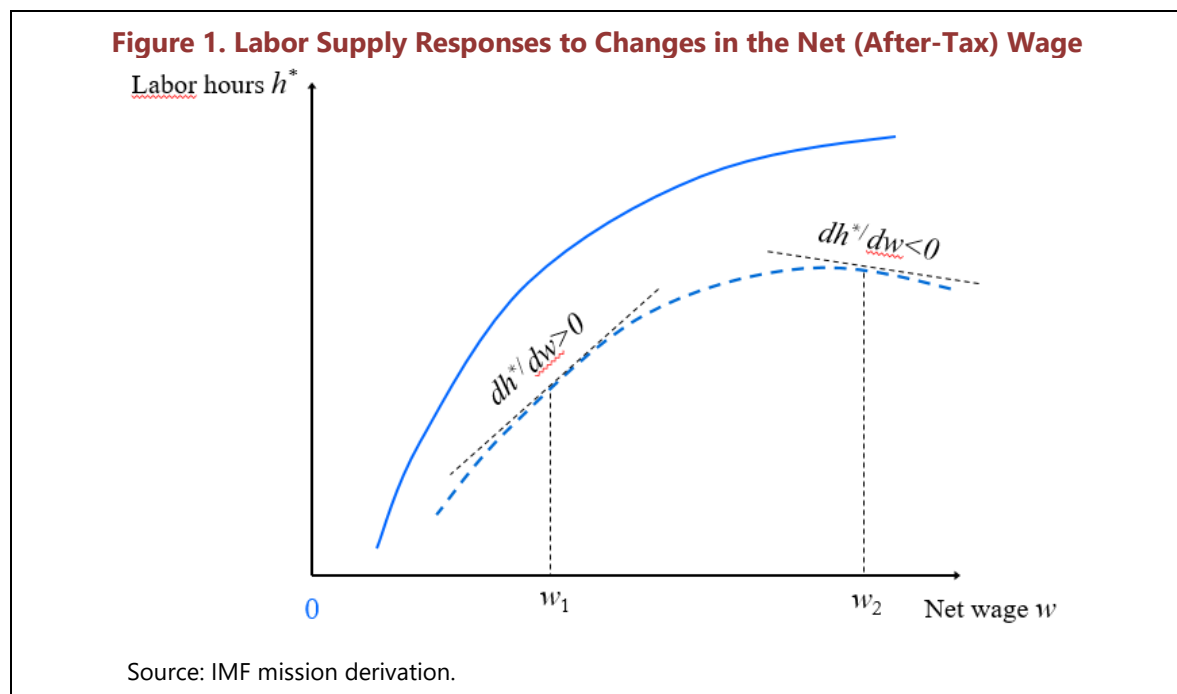
B. Theoretical Background

11. Economic theory provides a theoretical basis for the relationship between labor hours, net wages and non-labor income among workers and non-workers. Labor supply decisions are determined by the financial rewards to working and the level of family non-labor income, and vary according to families' preferences for income and hours. Such preferences typically depend on demographic characteristics and family circumstances—principally age, family status, and the age and number of dependent children. The relationships between labor supply and the levels of wages and non-labor income are commonly expressed, respectively, through *wage elasticities* and *income elasticities*, both of which vary according to individual and family characteristics. Theory does not always prescribe how wages and taxes will affect labor supply. Generally, income elasticities are unambiguously negative in sign, whereas wage elasticities can be positive or negative. Indeed, wage elasticities can vary both in magnitude and sign *for the same worker*. Behavioral responses to changes in wages and taxes are therefore complex, and the direction and magnitude of the behavioral response to wages and taxes for different population groups can only be resolved through detailed empirical modeling.

12. Labor supply responses to taxation reform can involve shifts into and out of paid work (the extensive margin) and changes in labor hours among those in employment (the intensive margin). Labor supply decisions are expressed in two ways—firstly in terms of the decision on whether or not to work or to seek employment (the *extensive* margin), and secondly, in the decision on how many labor hours to work conditional on employment (the *intensive* margin). Both decisions are influenced by wages and incomes, and also vary according to individual characteristics and family circumstances. For workers who have no capacity, or limited capacity, to vary the number of hours worked, the intensive labor supply decision can also be expressed in terms of either work intensity, or labor productivity.

13. Taxes and benefits affect labor supply by changing the relative financial returns to employment at different hour alternatives. Taxes, benefits, and welfare payments can affect both the net wage and effective (or 'virtual') non-labor income. The tax-free threshold reduces the marginal reward to labor hours for those above the threshold, while progressive income tax rate schedules increase the proportionate tax burden for higher income workers. Income support payments, basic income guarantees and unemployment benefits influence employment decisions by altering the balance between in-work and out-of-work incomes. Such measures typically lead to negative employment incentives, and many international systems of welfare support impose active job search requirements as a condition of payment, or time limits on full welfare entitlements.

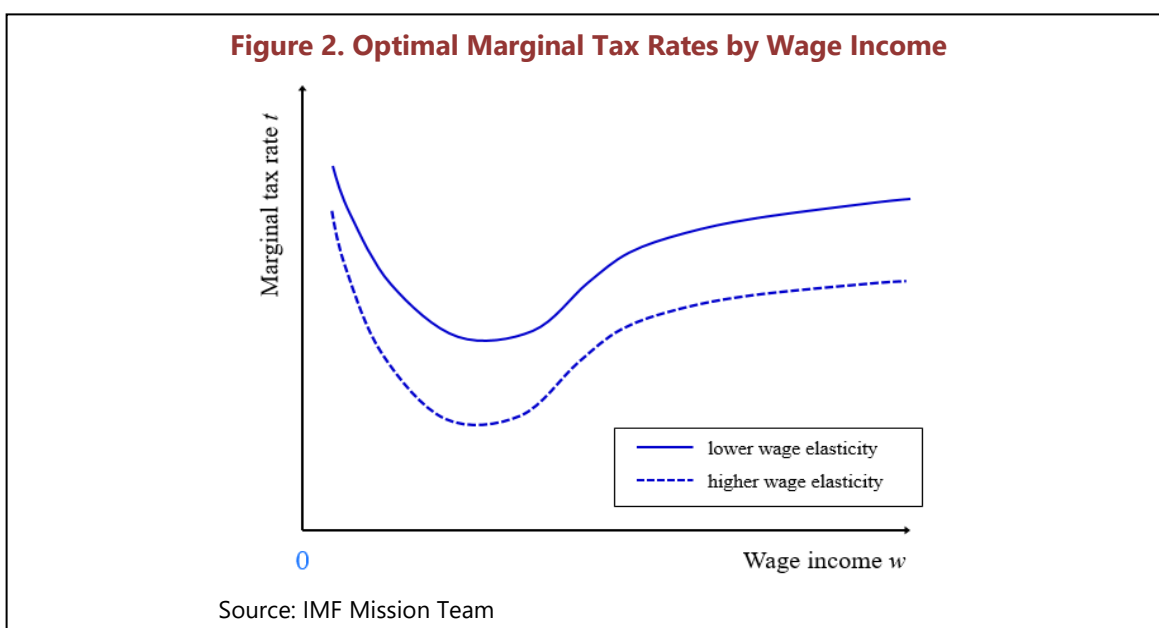
14. The extent to which taxes affect labor supply depends on the degree of responsiveness to changes in wages and/or non-labor incomes. The extent to which taxation and welfare payments affect labor supply choices therefore depends on the wage and income responsiveness of different population groups. At the intensive margin, the labor supply response to an increase in the net (after-tax) wage combines a (positive) substitution effect and a (negative) income effect. The magnitude of the overall wage response is driven by a combination of these two effects. Importantly, the overall wage elasticity can be either positive or negative, depending on the relative sizes of the substitution and income effects (Figure 1). Blundell (1992) and European Commission (2011) both provide useful surveys of empirical evidence on the relationship between taxation and labor supply behavior.



15. The tax wedge measures the size of total tax burden on labor, including personal income tax, SSCs (both paid by employee and employer), and any work-related cash transfers related to income level and family characteristics. Taxes on labor create a tax wedge between labor costs paid by employer (*gross wage* and any employer-paid additional contributions and taxes) and *net* (or take-home) wage received by employee. Specifically, the average tax wedge measures the total labor tax burden (i.e., the sum of PIT, employee SSC, employer SSC, less any work-related cash transfers) as a percentage of total labor cost. The marginal tax wedge measures the incremental change in the total tax burden per one-unit increase in the total labor cost. Summarizing all taxes on labor, the tax wedge captures any tax-related changes in the labor costs or the after-tax real consumption wage that would in turn change labor demand and labor supply, and provides a useful tool to measure any tax-related change in equilibrium wage and employment conditions.

16. Employee and employer-paid social security contributions have an equivalent long-term impact on employment and labor supply, which can be less negative than the impact of taxes. Social security systems for most international jurisdictions—including the Chinese system—commonly involve both employer and employee-paid contributions. When combined with personal income taxation, social security contributions drive a wedge between the costs of labor to the employer and the net financial return to employee, as discussed above. Changes in social security contributions levied on the employee have a short-term impact on work incentives and labor supply choices. Changes in employers' contributions affect labor costs and hence labor demand in the short run. However, over the long term, social security contributions have an equivalent impact on labor supply regardless of the formal share of social security payments borne by the employer and employee due to the adjustments in labor demand, labor supply and gross wages and salaries. Compared to taxes, the negative labor supply effect of social security contributions can be lower, if the benefits are linked to marginal contributions and valued by workers.

17. Economic theory recommends that the optimal marginal tax rate structure should follow a U-shape according to wage income. Recent developments in optimal taxation draw from the early approach of Mirrlees (1971). Recognizing that excessive taxation discourages work effort, this theory proposes an optimal tax rate structure based on maximizing social welfare rather than tax revenues. The resulting optimal marginal tax structure follows a U-shaped relationship between marginal tax rates and wage incomes (Figure 2). The intuition for such a schedule is that lump sum transfers to low income taxpayers should be taxed away at relatively high marginal tax rates to ensure effective targeting of benefits towards families in greatest need. Middle-income earners, typically representing the majority of the working population, should face lower marginal tax rates to ensure labor supply efficiency, whereas higher income taxpayers



should face higher marginal tax rates. This ensures a progressive tax schedule and the efficient generation of tax revenues.

C. International Experience

18. Reduction in employer SSC is the major policy instrument used by many OECD countries to address immediate and severe unemployment in the aftermath of the 2009 financial crisis. The preference for SSC reductions is explained by the fact that these apply only to employed labor, while PIT applies to a much broader definition of income (except in some countries, including China, where PIT on employed labor is a separate schedule). High labor costs are commonly perceived as a key structural problem in several Euro area countries, with reduced labor costs seen as a way to ease and accelerate the needed adjustment to increase employment (De Mooij and Keen, 2012). The focus on the employer's contribution—rather than the employee's, reflects a view that the relevant rigidity comes from contracts specified in terms of payment net of the employer's SSC. Since the financial crisis, 14 OECD countries introduced temporary reduction in employer SSC to increase labor demand. In 2010 alone, eight OECD countries reduced their social contribution rates for employers. The scope of the reduction in employer SSC differ considerably across countries. For example, the reduction applies to all workers in Germany, Japan, and Mexico, while Belgium, France, and the Czech Republic restricted the reduction to low-wage workers. In Portugal, only new hirers are eligible for the reduced SSC contribution, while in France, the temporary reduction in the employer SSC contribution only applies to small firms with up to 50 employees.

19. The reduction in employer SSC was commonly financed by an increase in the standard VAT rate to achieve a revenue-neutral or revenue-enhancing reform. For instance, in Germany, the unemployment insurance rate was reduced from 6.5 to 4.2 percent in 2007 and 3 percent in 2009, followed by a further temporary reduction to 2.8 percent till the end of 2010. The health insurance contribution rate was also reduced from 7.3 to 7 percent for employers, and from 8.2 to 7.9 percent for employees. The reductions in the SSCs were (over-)financed by a permanent increase in the standard VAT rate from 16 to 19 percent in Germany. In Hungary, the employer SSC was reduced by 5 percentage points for incomes up to 2 times the minimum wage in 2009. The reduction was subsequently extended to all income in 2010. At the same time, the lump-sum health contribution was abolished as of January 1, 2010. The Hungarian SSC reform was similarly financed by an increase in the standard VAT rate of five percentage point, together with increase in excises on petrol, diesel, alcohol and cigarettes. In Switzerland and Portugal, the reductions in SSCs were also financed by an increase in the standard VAT rate.

20. The reform of combining a reduction in social contributions with a simultaneous increase in the VAT reflects a trend to shift from social contributions to consumption taxes and represents “fiscal devaluation.” The reduction in the employer SSC is assumed to be fully passed on in producer prices, so that with a fixed exchange rate, the foreign currency price of exports falls correspondingly. The increased VAT does not dampen this effect as it does not

apply to exports. The reduced SSC also reduces the producer price of domestically-produced goods sold in the home market, while leaving the producer price of competing imports unaffected. Since the increased VAT applies equally to both imports and domestically-produced goods, the combined effect is an increase in the relative consumer price of imported goods. As a result, exports become cheaper abroad and imports more expensive at home following such fiscal devaluation—which thus mirrors a monetary depreciation or devaluation in a country with a flexible exchange rate. The effectiveness of this strategy depends critically on whether it moves a country closer or further from external equilibrium. If used against the direction of required adjustment, it will be short-lived and undone by the adjustment of wages and prices.

21. Reduction in employer's SSC can be effective in reducing unemployment in the short run, in particular in economic downturns owing to rigidities in nominal wages.

While in the long run the reduction in SSC would most likely raise wages, in the short-term it can be effective in reducing unemployment. In particular, reductions in SSCs can be effective in addressing the extensive involuntary unemployment of low-skilled individuals, as the SSC rate consists a larger portion of the tax wedge for low-income earners due to the progressive feature of the PIT system. In Belgium, for instance, payroll tax exemptions targeted at manual workers were found, in a quasi-natural experimental setting, to have a positive impact on manual employment and a positive, but smaller, impact on their pre-tax wages (Goos and Konings, 2007). Similarly, payroll tax subsidies in the form of reduction in employer-paid contributions for low-skill workers were found to be associated with very strong employment and wages effects in France, creating/saving roughly 400,000 jobs in the economy between 1994 and 1997 (Crepon and Desplatz, 2002).

22. International studies show that labor supply responses to wage and taxation changes depend strongly on demographic situation and family background.

Many international studies have sought to examine the relationship between participation, labor hours and wages for different demographic groups. Useful surveys published by Blundell (1992), Keane (2011), and the European Commission (2011) provide a broad summary of the international evidence, and show that men in couples have relatively low wage elasticities (mostly in the range -0.1 to 0.1) at the intensive margin with higher participation elasticities at the extensive margin. Couple females, as secondary earners, have more flexible labor supply behavior, with higher wage elasticities (0.2 to 0.7) at the intensive margin. Lone mothers have higher—and more variable—wage elasticities at the intensive margin, and are more sensitive to changes in taxation.

23. Employment tax credits provide a means to increase labor supply incentives and to compensate certain groups for additional costs of employment.

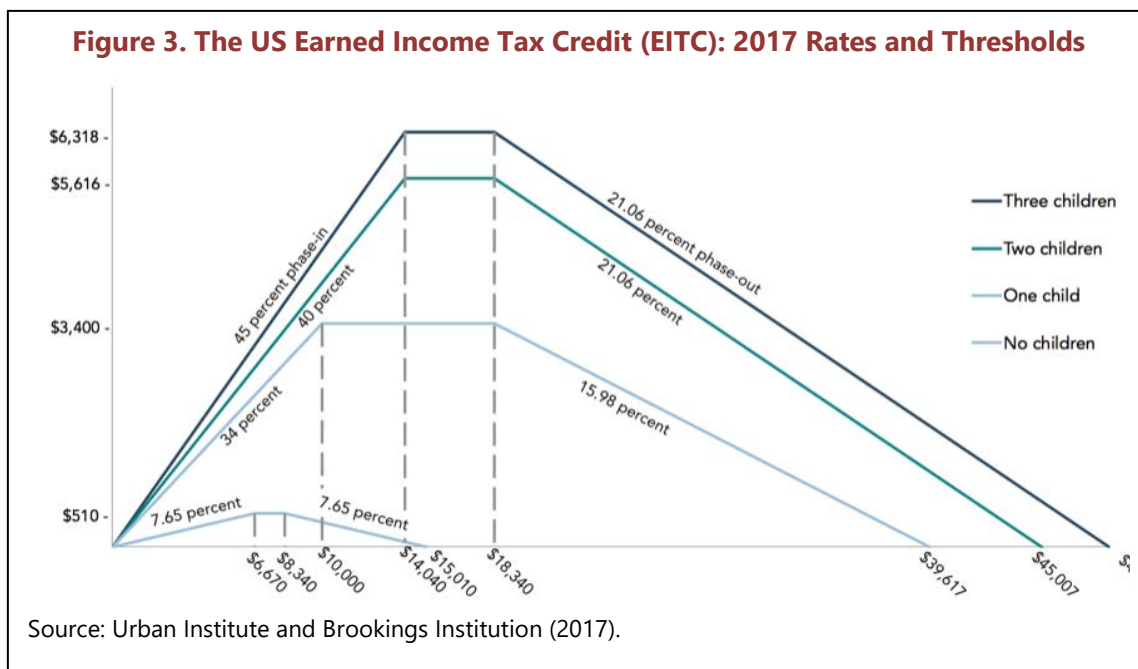
Employment tax credits form part of contemporary tax and welfare systems in many jurisdictions around the world. The purpose of employment tax credits is to improve work incentives for among those currently unemployed by supplementing low paid work through an employment-contingent payment. Most employment tax credits are contingent on earned income alone (US, Sweden, France) while some include labor hours as well as low earnings as a specific condition of entitlement. Specific

examples of employment-contingent payments include those in the United States (the Earned Income Tax Credit), the United Kingdom (the Working Tax Credit, moving to the Universal Credit), Sweden (the Earned Income Tax Credit), Belgium (In-Work Benefit), France (the Prime Pour l'Emploi), Canada (Self-Sufficiency Program), and Ireland (the Family Income Supplement).

24. Delivering financial support to cover employment costs has a different distributional impact when delivered as a tax credit compared with a tax deduction.

Employment costs may be accepted as a tax deduction, i.e., a deductible expense reducing taxable income. For employees, tax deductions effectively raise the tax-free threshold for personal income taxation. As a result, the greatest financial benefit from tax deductions accrues to those paying higher rates of personal income tax. Alternatively, compensation for employment costs can be delivered using tax credits, by reducing assessed tax liability by the value of the credit. Tax credits can be further differentiated as either refundable or non-refundable. A non-refundable tax credit reduces the level of net taxation paid, but provides no additional financial benefit to taxpayers once their tax liability is reduced to zero. A non-refundable tax credit therefore offers no financial benefit to non-taxpayers. Refundable tax credits provide financial benefits to all eligible tax credit recipients regardless of taxpayer status, in the form of a tax refund. Refundable tax credits therefore offer greater benefits to those paying little or no tax.

25. The United States Earned Income Tax Credit (EITC) is a refundable tax credit delivering financial incentives to low-income families with at least one person in employment. The credit is phased in at a proportion of earned income to a maximum (plateau) credit that varies according to the number of children in the family (Figure 3). The credit is phased out once earned income exceeds a threshold (phase-out range). Eligible EITC recipients receive the credit as an annual tax refund delivered by IRS through the annual tax return.



26. The US Earned Income Tax Credit has proved to be effective in delivering positive employment incentives at the extensive margin, but is less effective in driving increased labor supply among those currently in employment. Empirical studies from the US consistently demonstrate strong positive employment effects at the extensive margin from expansions of EITC generosity. Meyer and Rosenbaum (2001) attribute over 5 percentage points of the growth in employment rates of lone mothers in the US to successive EITC expansions in 1986, 1990, and 1993. Eissa and Liebman (1996) estimate that the 1986 expansion of EITC led to a 2.8 percentage point increase in participation among lone mothers, while Rothstein (2008) find similar strong employment effects from the 1993 EITC expansion. Evidence of labor supply responses at the intensive margin is less conclusive for single mothers. Eissa and Liebman (1996) conclude that the expansion of EITC in 1986 led to no significant increases in labor supply among low-educated working single mothers, and only a marginal increase in hours among all single mothers. Saez (2010) notes that the EITC structure should create incentives for workers to adjust their labor supply to take advantage of maximum EITC eligibility, yet finds there to be no such behaviors among single mothers. Empirical studies of the impact of EITC reforms among married women find predominantly negative labor supply responses, either from reductions in labor hours among working married women or from lower participation rates. Eissa and Hoynes (2004) and Ellwood (2000) both found participation rates for married women with children to have declined relative to married women without children over the course of the 1990 and 1993 EITC expansions, by between 1 and 4 percentage points.

27. The UK Working Families Tax Credit (WFTC) was introduced in 2000 to replace the previous Family Credit welfare payment. The WFTC combined a basic adult credit with supplementary credits for lone mothers, disability and childcare costs. A key differentiating feature of the WFTC compared with the US Earned Income Tax Credit was the explicit requirement for eligible recipients to work at least 16 hours per week (with a combined total of 24 hours per week for couples). The full credit was available for those whose net earnings remained below an income threshold ("applicable amount"), with the credit being withdrawn for income above this threshold (at a rate of 41 percent of net income). The UK government is currently introducing a new Universal Credit to deliver financial support to low income families. The Universal Credit has an integrated modular structure, and is intended to replace up to six tax credits and welfare benefits, including the Working Tax Credit, Job Seekers' Allowance, Housing Benefit, Income Support and Child Tax Credit.

28. Empirical studies have uncovered similar evidence of mixed labor supply responses to employment-contingent payments in the United Kingdom. Blundell and others (2000) examined the labor supply responses to the change from the UK Family Credit to the more generous WFTC in 2000, and found positive employment responses at the extensive margin of around 2.2 percentage points among lone mothers. Brewer and others (2006) showed that the average employment responses to the WFTC among married women were negative, with some

married mothers withdrawing from the labor market in response to the more generous WFTC entitlement.

D. Policy Challenges in China

29. The income tax on employed labor is very low and unlikely to have a strong impact on the labor market. The personal allowance exceeds the average wage, in cities with low wages by multiples. Hence most workers do not pay income tax at all, while those with slightly higher wages will pay only little, given the low introductory tax rates and the wide bands. The highest tax rates affect only a small minority of workers on very high incomes.

30. The schedular system of taxation may lead to inefficiencies, as different tax schedules apply depending on the category of labor. More broadly, the sheer number of schedules is high and creates unnecessary complications. Focusing only on schedules that affect labor, there is uneven treatment between (i) wages and salaries, (ii) income from self employment, (iii) subcontracting, (iv) service provision and (v) author remuneration. As a result, people providing certain types of services are at a disadvantage. This can create pressures to attempt a recharacterization of an activity in a more favorable schedule. Often this is not possible, and this then implies a discouragement of these activities. As administrative simplicity is often mentioned as a reason for the schedular system, it is helpful to make the following distinctions:

- Schedular taxation may refer to the separate treatment of different types of incomes. Such separate treatment simplifies administration, as each income type can be taxed without the need to know aggregate income. This, in turn, greatly facilitates the use of final withholding taxes. Moreover, such approach can protect revenues, as it avoids losses in one category to be offset against profits in another activity. Most countries, for example, do not allow capital losses to be offset against labor incomes.
- A separate question is whether each type of activity should face different allowances, tax rates, and tax brackets. There are often good reasons for applying different tax structures for different types of income. For example, providing a personal allowance for each income type would be excessive, and in the Chinese context would imply up to 11 personal allowances. Hence, income types that typically occur in addition rather than in lieu of wage income should not carry an equally large personal allowance. The great elasticity of capital also suggests that tax rates on capital income should be lower, which has led many countries to adopt dual income taxes, with a low fixed rate on capital income, and a progressive rate on

labor income.¹ There is, however, little rationale to use different tax structures for different types of labor income.

31. The short assessment periods of some income tax schedules may lead to inequities or create avoidance opportunities. Some schedules, including the important one for wages and salaries are assessed monthly, implying that taxpayers with uneven incomes over the year can face higher tax bills than those whose incomes are evenly distributed. In some schedules, tax is due on a per-payment basis, creating incentives for breaking down remuneration into small payments.

32. Social security contributions are high and regressive. The minimum social security base of 60 percent of local average income, implies a very high burden on low-income workers. The aim of the minimum contribution is to limit the scope for evasion. For people in full time employment this may not create much of a problem, as the minimum base is unlikely to be below the actual wage, and is in many locations close to the minimum wage. However, this discourages part-time or other flexible employment options. These are rare in China, but this could be a result of the social security system.

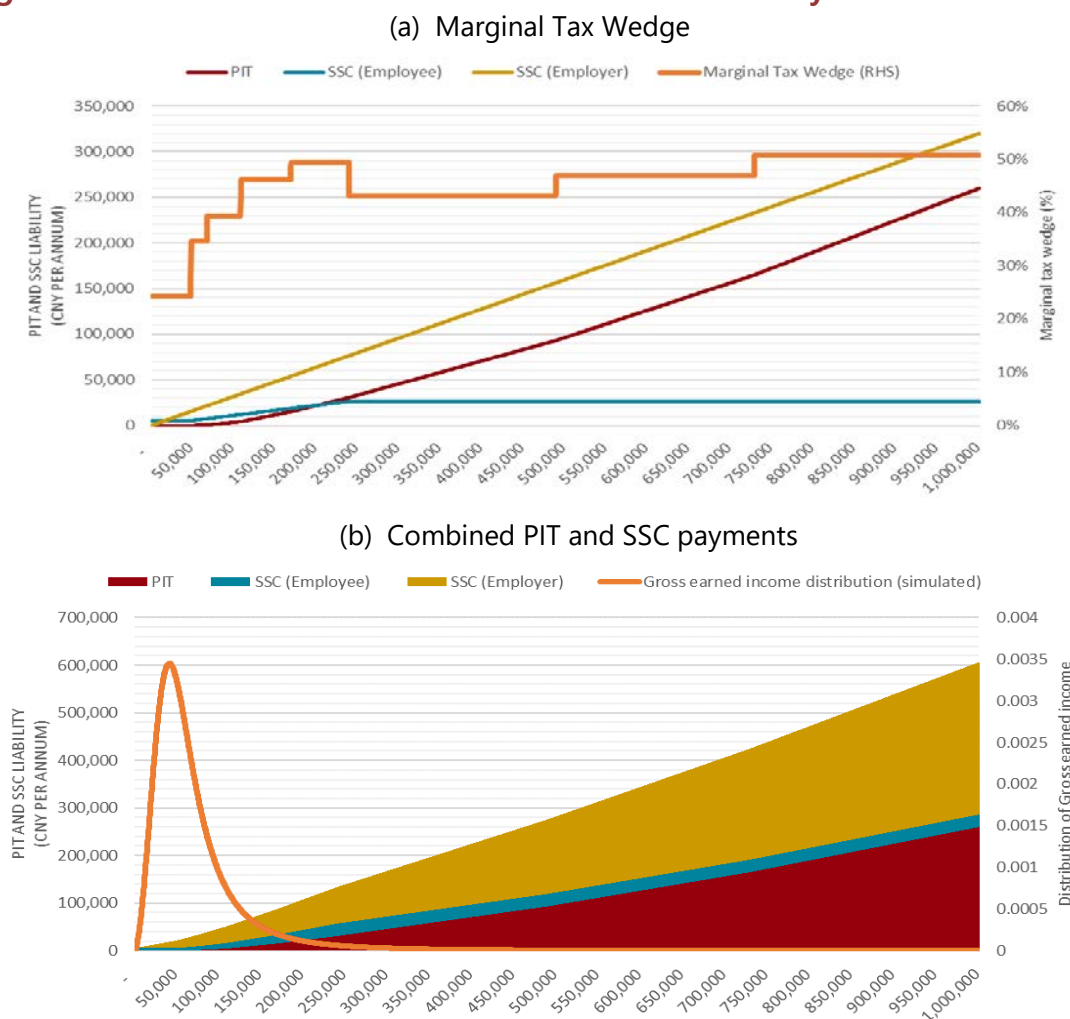
33. The weak link between contributions and benefits implies that social security acts similarly to taxation. A weak link is a normal, and largely unavoidable, feature of health insurance.² Pension contributions, however, are in many countries more strongly reflected in pension benefits, where (even in unfunded/pay-as-you-go systems) benefits are often linked by a formula to an individual's past wage levels and contribution years, even though there is often also an element of redistribution. This turns these contributions, at least partially, into forced savings, which are likely to have smaller disincentive effects on labor supply than taxes, because paying these contributions raises an individual's pension. In China, however, the weight on individual contributions in pension benefit calculations is comparatively low, while local average wages are also an important determinant in the pension formula.

34. The combined marginal tax wedge, which adds up taxes and social security contributions for urban workers, follows initially a progressive schedule, then drops before resuming a progressive structure (Figure 4). This pattern is unlikely to be optimal in terms of maximizing a combined objective of equity and efficiency. In particular, the temporary lowering in the marginal tax wedge, which occurs as the social security ends, and lasts until the PIT rises by two steps, is unlikely to be optimal.

¹ This also reflects efficiency considerations, as capital income taxation distorts savings decisions. The taxation of purely inflationary capital income provides another reason for a lower tax rate. Moreover, dividends need different treatment given the CIT taxation. And capital gains face further complications because of their lock-in effect if applied on realization.

² Systems differ in either providing universal coverage or coverage only to contributors, but the quality and scope of service provision typically does not depend on the amount of contribution.

Figure 4. PIT Liabilities and SSC Contributions in Urban China: by Gross Earned Income



Source: IMF mission calculations based on 2017 PIT and SSC systems, using simulated income distribution for urban China. See Appendix I for details of simulation approach.

35. The lack of portability of benefits impedes labor mobility. A new protocol has much improved the portability between major cities. Workers still lose most of their pensions if they move to a rural area, even if they contributed at the higher urban rate during many or all of their working years.

36. The housing fund raises labor costs further. With the typical rate at 12 percent, fully matched by employers, this is a significant expense. For employees, these contributions are forced savings, or if used for rent, may not even have much effect other than labelling a part of salary for a particular expense. For the employer, however, their contribution is an additional tax on employment (which would further raise the tax wedge in Figure 4).

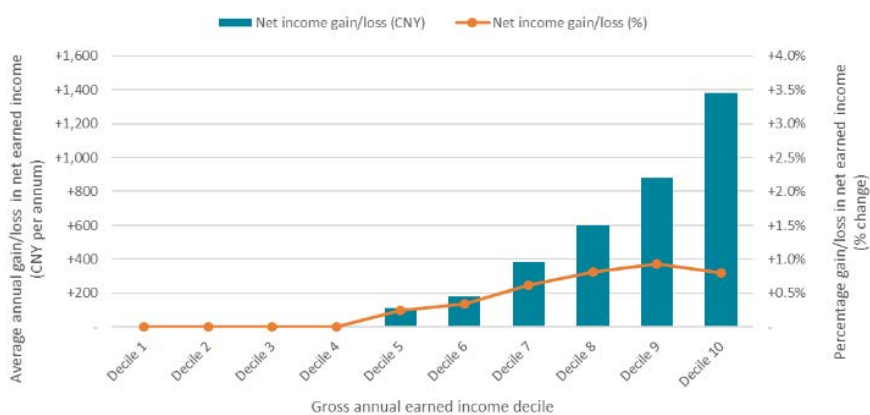
37. The current taxation at the individual level avoids disadvantages occurring in other counties that tax at the household level. Household taxation increases equity between households with similar incomes but a different distribution across household members, but has the disadvantage of reducing labor supply incentives for those household members on lower incomes. To address this, many countries have been moving toward individual taxation of incomes, a system that is already in place in China. Maintaining individual taxation would not preclude, however, the introduction of elements that address the lower ability to pay of household taking care of children or seniors, for example through a tax credit.

38. Employment tax credits offer limited scope to incentivize employment among low wage workers in China, but could play a greater role in delivering targeted support for employment costs. The role, purpose and rationale for employment tax credits in China should be considered in the context of the economic behaviors of its workers and businesses, and the broader design of the Chinese tax and social security system. In many international jurisdictions, employment tax credits serve to counteract the negative employment incentives created by generous welfare payments to the unemployed and those on low incomes. Employment tax credits have a more important role in societies where participation elasticities are relatively strong. For these reasons, employment tax credits have less of a rationale in China, at least currently, given the strong appetite for employment and the absence of regular monetary welfare payments provided to non-working adults. Yet given the reform priorities currently under active discussion in China, tax credits provide an opportunity to deliver effective and targeted financial support to compensate workers for the differential costs of employment, for example the costs of child care or senior care. Providing such support in the form of refundable tax credit would especially benefit lower income workers.

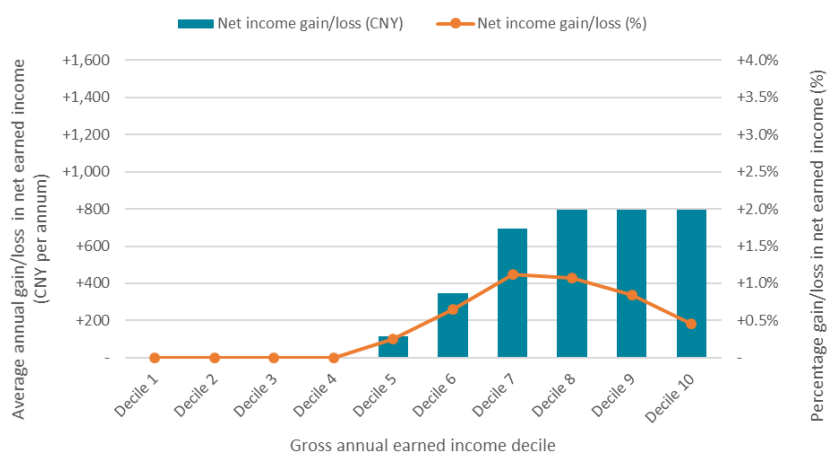
39. Simulations illustrate the much greater gains of low-income individuals in case of a refundable tax credit, compared to a nonrefundable credit, and a tax deduction. Figure 5 compares three approaches to the compensation of employment costs of CNY 6000 per year—a tax deduction, a non-refundable tax credit and a refundable tax credit. Each tax credit variant is scaled to cost the same in revenue terms as the tax deduction variant. Based on a simulated income distribution for China, and using the 2017 PIT rates and thresholds, revenue equivalence is achieved by paying a nonrefundable tax credit of 13.2 percent of CNY 6000 in employment costs. A refundable tax credit at the same cost would provide compensation of 6.1 percent of CNY 6000 in employment costs. Figure 5 highlights the different distributional impacts across the three alternatives. A tax deduction provides benefits only to those at or beyond the fifth decile of gross earned income (Figure 5, Panel a). Gains rise clearly and consistently with income. The tenth decile enjoys an average gain of CNY 1,400 per annum from tax deductibility, with some at the top of the income distribution gaining significantly more. At equal overall cost, a non-refundable tax credit of 13.2 percent of CNY 6000 caps the maximum benefit at just under CNY 800 (Figure 5, Panel b) and would deliver a greater average benefit to the sixth to eighth deciles of gross earnings. A refundable tax credit would deliver equal benefits regardless of gross earnings level for a given entitlement (Figure 5, Panel c).

Figure 5. Differences Between Tax Deductions and Tax Credits: by Gross Earned Income

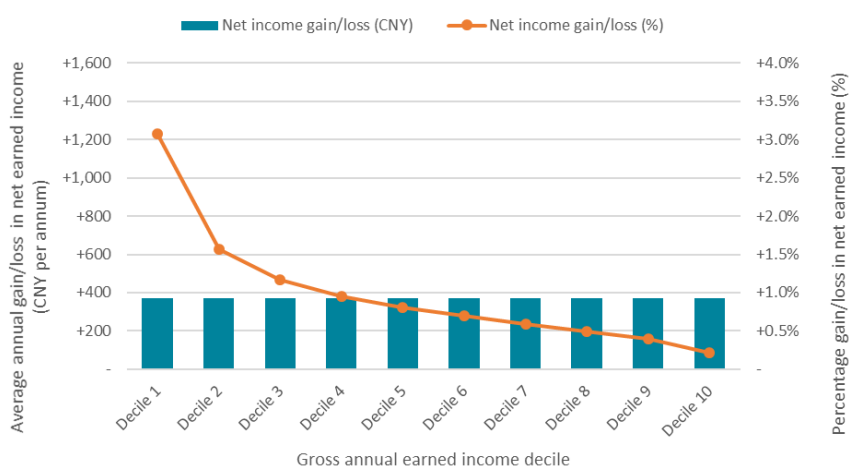
(a) Deductibility of CNY 6000 per annum



(b) Non-refundable tax credit of 13.2% on CNY 6000 per annum



(c) Refundable tax credit of 6.1% on CNY 6000 per annum



Source: IMF mission calculations based on 2017 PIT and SSC systems, using simulated income distribution for urban China. See Appendix I for details of simulation approach.

40. Wage elasticities for most demographic groups in China are small relative to international comparisons. A full appreciation of the potential behavioral impact of taxation reform in China requires as much evidence as possible on labor supply behaviors in urban and rural areas, and variations in labor supply behavior by family status, culture, religion, and across professions. From the evidence published to date, we conclude that wage elasticities for most groups in China are small relative to international comparator studies. Li and Zax (2003) and Gong and Zhang (2004) find small wage elasticities for married men and women in urban China. Chen and others (2013) find that employment and participation decisions are influenced more by family circumstances than by individual factors, and report significant differences between urban and rural drivers of employment.

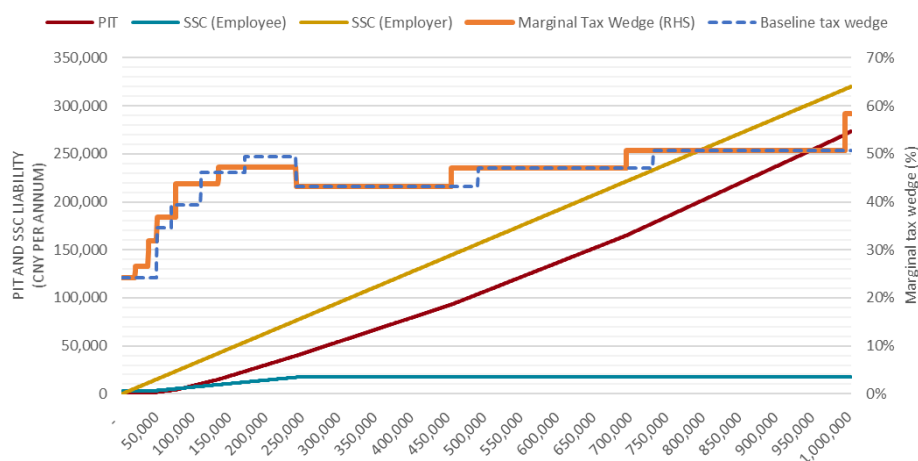
E. Policy Options

41. Lowering the tax-free threshold in China is likely to affect labor supply incentives only to a very limited degree. Reducing the tax-free threshold will increase the number of people liable for personal income tax, as well as increasing the liability of current tax payers. The greatest financial loss (gain) from lowering (increasing) the PIT threshold would be borne by higher rate taxpayers. The size of the potential labor supply response depends on the magnitude of the wage elasticities among those affected, with smaller wage elasticities implying smaller responses. As discussed above, evidence from empirical studies of labor supply behavior indicates that wage elasticities are small for most demographic groups in China. This suggests that labor supply impact of a reduction in the PIT threshold will be relatively small at the intensive margin. Lowering the tax-free threshold is unlikely to generate labor supply responses at the extensive margin unless significant fixed costs of work are present, or if work options are fixed and limited to full-time or part-time hour alternatives.

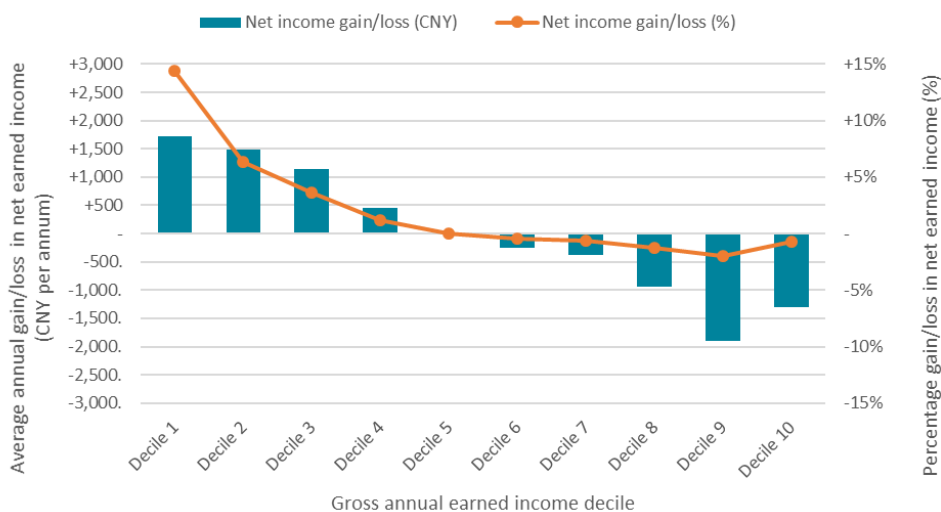
42. Combining SSC and PIT reforms could deliver revenue-neutral employment incentives to lower-wage workers. Raising the PIT threshold further in China is not likely to promote employment incentives directly among low-wage workers, given that the high PIT thresholds currently in place take many workers outside the PIT system altogether. Alternatively, lowering SSC payments for lower income individuals, with funding provided by reductions in the PIT tax-free threshold, could reduce their tax burdens and create stronger employment incentives. Figure 6 presents an indicative simulation of the combined impact of reducing the employee SSC rate by 3.8 percentage points, funded by a reduction in the PIT threshold to CNY 14,400—broadly equivalent to the minimum wage for urban China (which differs by locality). The lower PIT threshold brings more workers into the PIT system (Figure 6 panel a), but this would be more than offset by lower SSC payments for lower wage workers from the reduced SSC contributions rate. In combination, these two changes could raise net earned incomes for the first four gross earnings deciles (Figure 6 panel b). Moreover, such reform would reduce the effect of a temporary drop in the marginal tax wedge.

Figure 6. Indicative Impact of a Revenue-Neutral Reduction of the PIT Threshold to CNY 14,400 and Reduction in the SSC Rate by 3.8 Percentage Points in Urban China

(c) Change in Marginal Tax Wedge



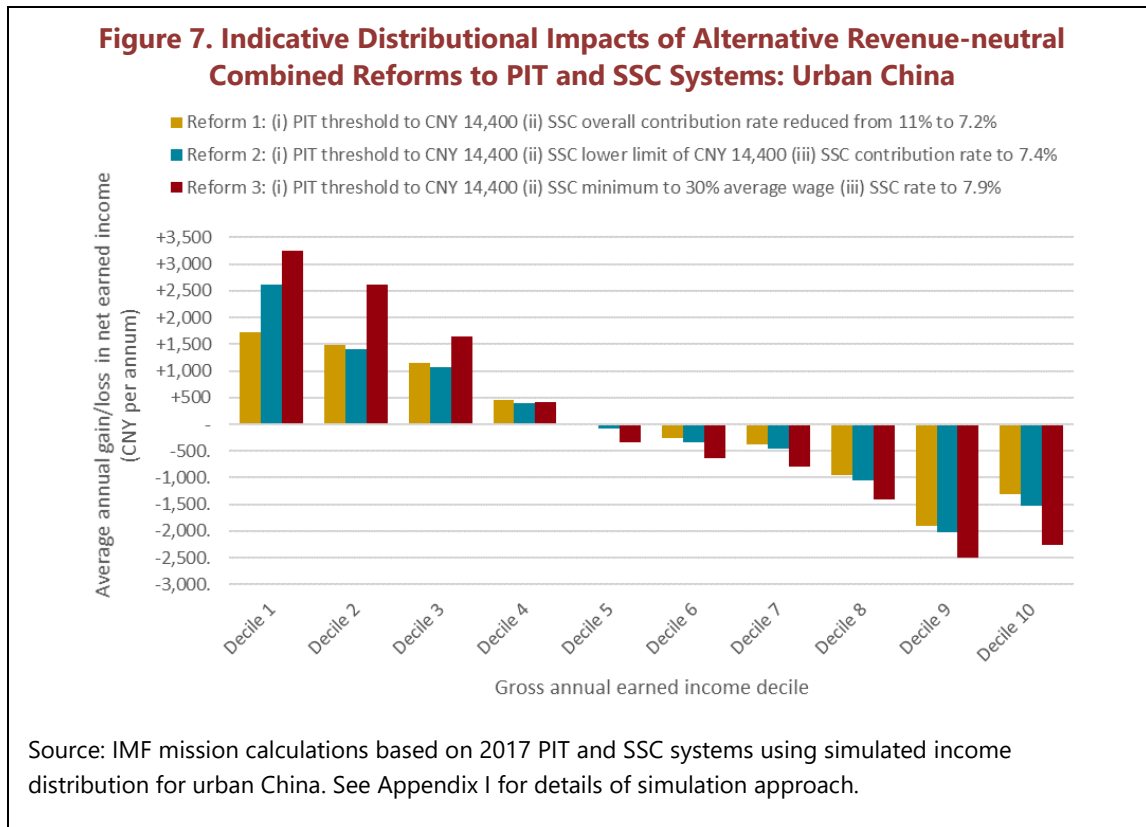
(d) Distributional Impact—Changes in Net Earned Income



Source: IMF mission calculations based on 2017 PIT and SSC systems using simulated income distribution for urban China. See Appendix I for details of simulation approach.

43. Tax burdens could be lowered for low-income working families by reducing the minimum SSC payment as a share of average wages, or by introducing a lower earnings limit for payment of SSC. Figure 7 presents two further simulations for urban China, the first of which adds a lower earnings limit of CNY 14,400 for SSC payments (Reform 2) while the second lowers the minimum SSC payment to 30 percent of the local average wage (Reform 3). Both reforms are rendered revenue neutral by adjusting the overall employee social security contribution rate (to 7.4% for Reform 2, and to 7.9% for Reform 3). Both alternative reforms lead to a higher income gain for the first gross earnings decile (an average annual gain of around

CNY 2,600 under Reform 2 and CNY 3,250 for Reform 3. The gains in net income under Reform 3 extend to the first four deciles of gross earned income.



44. The following measures could be taken to achieve an improvement in equity, a more consistent marginal tax wedge schedule, and greater incentives to create and take up employment at the lower end of the wage spectrum:

- Reduce social security contributions by lowering rates, lowering the minimum contribution, or introducing an allowance, financed by reduction in the PIT allowance. Compensate the social security funds by a transfer.³

45. Further measures would reduce differences between the tax treatment of labor depending on its type and location:

- Apply the same tax rates and thresholds to all schedules that tax the remuneration of labor. As a first step, unify the assessment period of all labor-related schedule to 1 year, achieved

³ For the benefits whose value is not linked to contributions, such as health, replacing contributions by a budgetary transfer is straightforward. For pensions, the insurance component should remain with the social security fund (and as noted elsewhere, the link between contributions and benefits tightened). Even on pensions, however, some costs can be taken over by the budget, such as legacy costs from laid-off state-owned enterprise workers and the welfare component of pension benefits.

either through a year-end adjustment in the final salary payment, or in case of non-salaried labor through tax returns.

- In the medium term, unify all labor income schedules under a single schedule, keeping it separate from capital income taxation.
- Reduce the differences between social security contribution rates and benefits across cities and municipalities. In the longer term, unify social security under a national scheme.

46. To increase incentives for labor supply, measures can be taken that strengthen the benefit side of social security contributions:

- Strengthen the link between contributions and pension benefits, by raising the weight of individual wages in the pension formula.
- Increase the transparency of the individual pension funds by regularly informing participants about accumulated amounts and rates of return.

47. Further measures can be considered to reduce the labor cost faced by firms.

- Assess the usefulness of the housing fund, and consider a reduction (possibly to zero) of the compulsory contribution rate.

48. To support labor supply of all members of a household, the following policies could be considered:

- Maintain the individual as the basic unit of taxation.
- To help with costs that may result from taking up employment, specifically child and senior care costs, consider the introduction of PIT credit. A tax credit should be given preference over a deduction, because a deduction is worth more to higher-rate taxpayers. Moreover, a tax credit can be made refundable, benefiting even workers earning less than the personal allowance.

III. SMALL AND MEDIUM-SIZED ENTERPRISES

A. Introduction: Role of SMEs in Employment Creations

49. SMEs are an important segment of the modern economy. Being a relative concept, the definition of SME varies from country to country. However, no matter how defined (by volume of sales, number of employees, value of gross assets), SMEs comprise most of business entities, typically more than 95 percent of the number of enterprises. It is estimated that formal and informal SMEs combined contribute about 60 percent of world GDP.

50. The universe of SMEs is vast and diverse. Both a self-employed street vendor and a high-tech start-up are classified as SMEs. Small businesses are noticed for their dynamic of job creation and destruction, and a low survival rate. Most jobs created by SMEs are not the best paid and have lower productivity on average. The low barrier to entry into the market as micro business allows the sector to play an accommodating role in times when more structured sectors of the economy shed labor, playing therefore a role in poverty mitigation and social cohesion.

51. Many SMEs are incubators of creativity, seeds of innovation, productivity, growth, employment creation, and some have the potential of growing into large businesses if successful. With so many SMEs being born and disappearing all the time, it is virtually impossible for the policymaker to pick winners. The challenge is to create a climate—including regulation and taxation climate—that will not hinder the development of new ideas and enterprise ventures, and that reward entrepreneurship and the creation of well-paid occupations. Moreover, given the constant employment destruction by failing businesses, impeding the setup of new SMEs would turn the sector into a drag on overall employment. At the same time, it is important to avoid introducing any obstacles for business to outgrow the SME status.

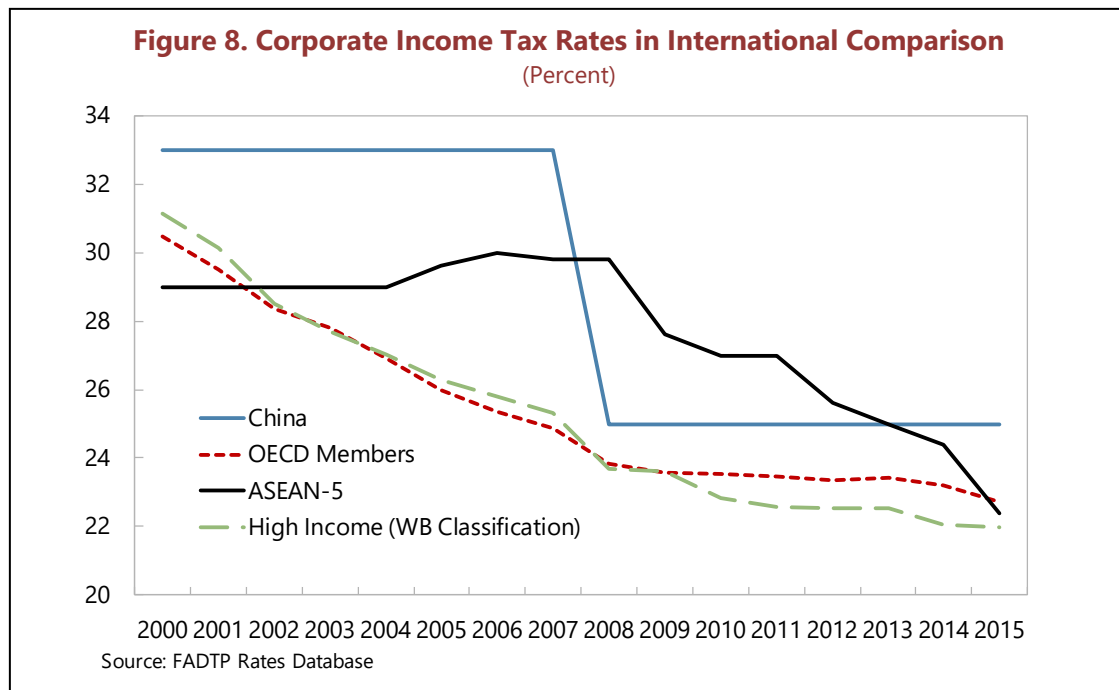
B. Taxation of SMEs in China

52. In general SMEs are liable to pay CIT, except those that are registered as sole-proprietors or partnerships who instead pay PIT under the self-employed schedule. The coverage of CIT is very broad in China and includes foreign-investment enterprises, companies, and other associations. China operates a classical system of taxation. Profits are first taxed at the enterprise level, and dividends distributed from the profits are taxed in the hands of shareholders with no applicable credits. As an exception, dividends from shares that are traded at Shanghai or Shenzhen Exchange are taxed at half the standard rate if held for more than a month and are exempt from tax if held for more than one year. The standard CIT rate is 25 percent which is above the average OECD CIT rate (Figure 8). The standard CIT rate is also higher than the average rate in ASEAN-5 or in high-income countries, although qualified SMEs are taxed at a reduced rate of 10 percent (see below). Social security and housing fund contributions are deductible expenses under the CIT. Contributions to supplementary old age pension insurance and medical insurance for employees are also deductible, provided such contributions do not exceed 5 percent of the total wages of employees. Partnerships and sole proprietorships are considered, for tax purposes, transparent, and their net income (profits) are taxable only under the PIT in the hands of partners or proprietor.

53. SMEs benefit from a preferential CIT regime and administrative simplifications. The definition of SMEs that qualify for a reduced statutory CIT rate is based on a set of three criteria: number of workers, total assets, and the amount of taxable profits.⁴ Qualified SMEs are taxed at a

⁴ Qualified small low-profit enterprises are enterprises that operate in industries without state restrictions or prohibitions and meet the following criteria: (1) industrial enterprises with annual taxable income not exceeding

reduced rate of 20 percent, in contrast to the standard CIT tax rate of 25 percent.⁵ Moreover, between October 1, 2015 and December 31, 2016, an even lower tax rate of 10 percent applied to small low-profit enterprises with annual taxable income less than CNY 300,000.⁶ This has been extended to December 31, 2019, and the upper limit been raised to CNY 500,000.



54. SMEs are also entitled to a special treatment under the VAT, but under a definition of SMEs that is different from the one that is used for income tax purposes. Under VAT, the segmentation of SMEs is based only on the amount of annual sales. SMEs with annual sales below CNY 360,000 are not required to register as VAT taxpayers.⁷ Businesses with annual sales exceeding CNY 360,000, but below a second threshold that varies by sector (CNY 500,000 in industry, CNY 800,000 in commerce, and CNY 5,000,000 for financial, transportation, telecommunication, construction and other taxable services) are defined as small-scale SMEs. For small-scale SMEs, the VAT liability is set at 3 percent of turnover, payable quarterly. This flat-rate scheme applies by default to all concerned SMEs, and there are some restrictions on voluntary moves to the standard regime. Businesses with turnover exceeding those limits are liable to VAT

CNY 300,000, employing no more than 100 persons, and with total asset value not exceeding CNY 30 million; and (2) other enterprises with annual taxable income not exceeding CNY 300,000, up to 80 employees, and with total asset value not exceeding CNY 10 million.

⁵ Enterprise Income Tax Law, Article 28 [1]

⁶ Joint Notice on Expanding the Scale of CIT Preferential Treatment for Small Low-Profit Enterprises, MoF and SAT (Caishui [2017] No. 343).

⁷ The VAT registration threshold was increased from CNY 240,000 to CNY 360,000 from 2014.

as *general taxpayers* under the standard VAT regime. However, general VAT payers in selected sectors (public transportation, warehousing, shipping and handling services, delivery, culture and sports) are allowed to be taxed under the small-scale SME regime (see details in Mullins and others, 2017). The standard VAT rate in China is 17 percent.

55. Businesses with turnover above CNY 360,000 and below the upper threshold are registered as VAT payers, but the turnover tax they pay—even though called VAT—is unrelated to value added. Those businesses can neither deduct the VAT paid on purchases nor issue invoices that could generate VAT credit in the hands of VAT-paying buyers. The lack of option to migrate automatically to the general regime if so desired is an impediment to small-scale SMEs to integrate production chains and limits their growth potential. The multiplicity of thresholds also adds complexity to the tax system, results in under taxation of some activities, and creates opportunities for tax avoidance. To mitigate these concerns, firms on the standard regime who purchase inputs from a small-scale VAT payer, have the option of obtaining a VAT invoice from the tax authority (instead of directly from the small-scale enterprise). This invoice allows them to credit input VAT, but the permitted credit (based on the full rate) could be different from the turnover-based VAT payment made by the supplier. This practice has the drawbacks of (i) breaking the VAT chain (except in the rare cases where 3 percent of turnover exactly matches 17 percent of value added) and (ii) of involving the tax administration in the issuance of invoices, which may create unnecessary administration and compliance costs.

56. Businesses classified as small-scale SMEs can receive VAT refunds if they hire disabled workers. Moreover, incomes generated by professional services of the disabled are exempt from VAT. New sole proprietors holding an employment certificate⁸ are also exempt of VAT, urban construction fees, education fees, and PIT up to CNY 8,000 per year for three years. SMEs that employ individuals with the employment certificate in commerce and services are also exempt from VAT, urban construction fees, education fees, local education surcharges, and PIT up to CNY 4,000 per year for each person with such certificate for three years.

57. There are several other CIT tax incentives that are only available for SMEs and are aimed at stimulating their investment in key industries.⁹ For small low-profit enterprises in the six main industries and four key industries, instruments and machineries with unit value not

⁸ The employment registration certificate refers to the documented registration of individuals, that are between 16 and the retirement age limit and are involuntarily unemployed, with the local employment services organizations. It documents the duration of the unemployment, while entitling the registered to unemployment insurance and preferential tax benefits to seek employment and re-employment. It replaces the certificate of unemployment since 2014 [Ren She Bu Fa [2010] No 75].

⁹ Six main industries including biopharmaceutical manufacturing, manufacturing of professional equipment, manufacturing of railway, vessel, aerospace and other transportation equipment, manufacturing of computer, communication, and other electronic equipment, manufacturing of instruments and apparatus, and information transmission, software, and information technology services, as well as small low-profit enterprises in the four key industries including light industry, textile, machinery and automobile.

exceeding CNY 1 million that are newly purchased after January 1, 2014 and shared for research and production are allowed to be immediately expensed for calculating the taxable profits. For instruments and machineries with unit value above CNY 1 million, depreciation can be further shortened or accelerated. With regard to shortened depreciation, the shortest depreciation period should not be less than 60 percent of the depreciation period prescribed by Article 60 of the Rules for Implementation of Enterprise Income Tax Law; With regard to accelerated depreciation, the double-declining balance method or the sum-of-the-years-digits method may be used.

58. There is a special preferential policy on enterprise income tax for banks to support lending to SMEs.¹⁰ Loan loss reserves calculated and set aside by a financial enterprise at any of the following rates after it conducts the risk classification of its loss reserves for agriculture-related loans and loans for SMEs are allowed to be deducted in the calculation of its taxable income: (1) specially-mentioned loans: the provision rate is 2 percent; (2) substandard loans: the provision rate is 25 percent; (3) doubtful loans: the provision rate is 50 percent; (4) loss loans: the provision rate is 100 percent. Guarantee indemnity reserves set aside by qualified credit guarantee institutions for SMEs at any percentage of less than 1 percent of the year-end guarantee liability balance for the year may be deducted from CIT. Unearned liability reserves set aside by qualified credit guarantee institutions for SMEs at any percentage of less than 50 percent of the income from guarantee fees for the year may be deducted from CIT. The balance of unearned liability reserves set aside in the previous year shall be concurrently converted into income for the current period.

59. In addition to VAT, CIT, and SSC contributions, enterprises in China are liable for a range of earmarked taxes, including educational surcharges, local educational surcharges, construction fees for cultural undertakings, and irrigation infrastructure fees (Table 6). The exact rates of these fees vary across locality. The base for some of them is sales, leading to cascading. Others are surcharges on VAT, effectively raising the VAT and creating differences in effective VAT rates across localities. Currently, SMEs with annual sales of up to CNY 1,200,000 exempt from educational surcharges, local educational surcharges and irrigation infrastructure building funds. SMEs with annual sales of up to CNY 360,000 are exempt from construction fees for cultural undertakings.

¹⁰ The Guidelines for Loan Risk Classification No. 416 [2001] of the People's Bank of China

Table 6. Earmarked Taxes Levied on Enterprises

Name	Tax Base	Typical Tax Rate
Cultural construction fee	Sales that are liable for VAT in advertising/entertainment industries	3%
Disabled people insurance fee	Difference between required and actual employment of disabled workers.	A formula-based fee: = (previous year's total workers X required employment rate for disabled individuals at the local level – previous year's disabled employees) X previous year average wage of the respective enterprise. ^a The previous year's average wage at the enterprise level is capped at 3 times the local average wage since 2017.
Education fee	Net VAT and excises	3% at the national level 2% additionally at the local level
Local city maintenance and construction fee	Net VAT and excises	7% cities 3% in municipalities 1% in villages
River maintenance fee	Annual sales, varying at the provincial level	1-3%, though now exempted in most provinces

^a Caishui [2015] Notice No. 72, September 9, 2015.

Source: IMF staff compilation based tax legislation of the People's Republic of China.

C. Theoretical Background

60. Taxation policies can be effective in fostering employment by SMEs, not as much by providing direct tax incentives, but by creating a positive tax environment. In fact, balanced tax policy and tax administration policies can be mobilized to help in the four strategic areas of SME development: access to markets, access to finance, capacity building, and investment climate.

61. The tax system should facilitate access of SMEs to markets, especially global markets. According to a study commissioned by the European Union, SMEs that are active in international markets create more jobs and are more innovative than domestic SMEs.¹¹ VAT refund claims are often an important part of an SME's receivables. Delay in refunding VAT net credits punishes the SME, which is already cash constrained. This is especially so in the case of SMEs with a vocation to participate in global markets, since they have less opportunities to offset the VAT paid on purchases against the debit VAT due on domestic sales. The zero-rating of exports is essential to maintain the VAT as a tax on domestic consumption and this relies on

¹¹ ECSIP Consortium, *Study on Support Services for SMEs in International Business – Final Report*, March 2013, available at <http://ec.europa.eu/DocsRoom/documents/9126/attachments/1/translations/en/renditions/native>

timely VAT refunds. It is critical that the refund claims are processed and paid quickly to the SMEs to facilitate their exports and integration in global value chains. Domestically, to facilitate integrating the SME in the chain of production and distribution, an option should be available for the small firm to register for VAT to issue invoices needed to enter the production chain as input provider in a tax neutral manner.

62. Tax policy could play only a secondary role in dealing with the problem of financial constraints of SMEs. Banks are normally not particularly interested in financing SMEs: the volume of loans is small, the information for assessing default risk is limited, collateral to secure loans is hardly available. This results in insufficient and costly financing for SMEs. Addressing this problem requires the development of appropriate instruments for SMEs in financial markets. However, there are tax measures that can contribute to relaxing the cash constraint of SMEs:

- a significant reduction in the cost of complying with the tax legislation (see below);
- allowing SMEs to be on a cash basis for tax purposes: revenues are recorded only when received, purchases are recorded when paid.¹² This system carries a further tax advantage for SMEs: the purchase of capital goods can be recorded immediately as cost (full expensing), so profits are not taxable when reinvested;
- making tax credits refundable, especially those related to research and development (R&D) expenses.

63. Capacity building and development of actionable knowledge could benefit from targeted tax benefits. Such activities as training, skills development, and R&D generate social benefits that are not fully captured by the entrepreneur undertaking the activity. This spillover (a positive externality) could lead to suboptimal expenditure by the firm. To align private interest with social benefit, a preferential tax treatment of those expenditures is warranted. For this reason, many countries allow deduction of a multiple of incurred R&D outlays, or provide tax credit related to R&D and innovation. These incentives are typically directed to young and innovative firms and provided for a limited time (Box 1).

Box 1. Examples of R&D Incentives

Under the **U.S.** federal R&D tax regime, from 2016, firms with turnover under USD 5 million may offset R&D outlays up to USD 250,000 against the payroll tax. Some states also provide R&D tax credits.

Canada's SR&ED program provides tax credits or refunds for R&D expenditure: deduction plus 15% tax credit (35% of first CAD 3 million for Canadian-controlled corporations).

In the **U.K.**, from April 2015, 230% of R&D outlays can be deducted. Any remaining balance can be carried forward; however, an SME is entitled to receive the tax balance in cash.

¹² Cash-accounting for SMEs is practiced inter alia in Austria, Chile, Poland, Turkey, and the United Kingdom. In Sweden, it applies only to sole proprietorships, and in Canada, to farming and fishing (OECD, 2015).

64. A key contribution that tax policy and administration can make to the development of SMEs is to reduce compliance costs.

Compliance costs involve registering and keeping the registry updated, issuing tax documents, keeping accounting records, preparing and filing tax forms, calculating and sending tax payments, adopting technological processes set by tax administration, compiling and submitting information on third parties, withholding and remitting taxes, providing information requested by tax administration, assist tax assessments and tax audits, preparing appeals on tax matters—and more. Compliance cost is a deadweight loss: resources that the taxpayer spends but do not reach government's treasury. Therefore, compliance costs should be constantly monitored and kept to the minimum necessary.

65. Tax compliance costs are a hindrance especially for SMEs. The fixed cost component of tax compliance hits the small businesses disproportionately. Studies show that, as percent of turnover, compliance costs a multiple in small businesses compared to what they are in larger ones. In emerging and developing economies, such relatively high costs also contribute to keep many businesses outside the formal economy. Evidence shows that non-tax compliant firms are less productive than firms in the formal sector. Therefore, lowering the tax-compliance barrier would help to absorb the gray economy and boost productivity and growth. A very potent policy tool for reducing tax compliance costs by small businesses is the introduction of a special tax regime for that segment of taxpayers, as outlined below.

66. A simplified tax regime is necessary to enforce tax compliance by small-scale businesses (micro-enterprises). The limited volume of operations and the cost of carrying full books of accounts and keeping comprehensive documentation makes the general tax regime, combination of VAT, CIT, and PIT, unsuitable for these small economic units. Even if the small firm could keep books of accounts, its auditing would not be cost-effective for the tax administration. In the universe of small firms, enforcement of the tax law is made possible by adopting a special tax regime that allows the main taxes being paid on a presumptive basis.

67. The most commonly used criterion to place small businesses in the simplified tax regime is turnover (annual gross sales). Other indicators (e.g., number of employees, value of gross assets) could also be used as eligibility criteria, but the volume of sales of goods and services is the easiest variable for calculating the monthly tax liability: every trader knows their turnover, and as e-invoicing expands the tax administration has a good source of information to monitor the large population of small businesses. Simply enough, a fixed tax rate is applied on the sales of the previous month to determine the tax payment of the current month.

68. The limit for the simplified tax regime should coincide with the VAT threshold. Simplicity requires that the threshold for VAT registration be uniform, not vary by sector. For the same reason, the limit for eligibility under the simplified tax system should be unique and the same throughout the economy. Further, to avoid multiplicity of tax regimes, it would be greatly convenient that the VAT threshold and the limit mentioned above be the same.

69. Once the simplified tax regime is in place, businesses with turnover above the limit are full-fledged VAT taxpayers and pay income tax under standard rules. Those who are under the limit, though, are exempt from VAT registration and are treated as final consumers for VAT purposes.¹³ The presumptive tax, thus, substitutes for CIT, the PIT, or both, and would apply to all forms of entities (corporations, partnerships, sole proprietorships) and to individuals engaged in business. They would not need to keep books of accounts and prepare financial statements—only would have to keep a register of sales made. Tax compliance would be highly simplified and its cost greatly reduced: only monthly payments and an annual streamlined tax return would suffice. In the future, the system could easily be paired to a cash register system or to any digital sales recording device.

70. The simplified tax system should be entirely voluntary. A business with a low turnover but integrated into a production chain could nevertheless choose to register for the VAT, therefore being able to issue VAT invoices creditable by its clients. Also, an exporter, however small, needs to be a registered VAT payer to be able to recover the VAT paid on input purchases. Still another business could prefer, for non-tax reasons, to keep full bookkeeping and paying taxes based on accrued profits instead of on a presumptive basis. In these instances, the taxpayer could opt out of the simplified tax regime.

71. Same differentiation in the presumptive rate may be necessary. Profits as a proportion of turnover tend to be smaller in manufacturing, intermediate in retail trade, and larger in the provision of services. For instance, tax rates (applied to gross sales) could be 4 percent for manufacturing, 6 percent for trading, and 10 percent for services. However well calibrated, presumptive bases are not exact estimates: they will overestimate the profit of some firms and underestimate the profits of others. Even so, the system is so convenient that, in Brazil, many firms prefer paying more taxes on a presumptive basis than they would pay if books of accounts were kept—for the ease of complying and the low risk of additional tax assessment in a possible tax audit.

72. Not all small businesses should qualify for the simplified tax regime. Certain closely regulated activities, or lines of business that require close monitoring by the tax administration, should be required to have full bookkeeping and documentation and comply fully with the VAT and CIT general law and their regulations. This restriction should apply to financial institutions, joint-stock companies, mining companies, petroleum and gas companies, foreign corporations and their affiliates, wholesale trading, and producers of such excisable goods as tobacco products and alcoholic beverages.

73. The simplified tax regime is just a simple way to calculate the tax liability. It is not a tax incentive or tax preference. The choice of rates should try to approximate the tax liability that would arise under full bookkeeping. If the tax rate is set at a too low level, it will discourage the

¹³ Notwithstanding, the exempt-from-VAT businesses will still bear the burden of the VAT charged on their purchases, as well as on imports they eventually make.

expansion of businesses (with more production, employment) to avoid migrating to the general tax regime (Benedek and others, 2017). This could prevent the SME from taking advantage of economies of scale and scope. In addition, it may encourage larger firms to break up into smaller units to economize on taxes. If the tax rate is set too high, it will discourage businesses in the gray economy to join the formal sector thus paying the tax. If a smoother movement (to avoid a discontinuity or “kink” in the effective tax rate) from the simplified to the standard tax regime is desired, a schedule of progressive rates, increasing with turnover and applied in a non-cumulative manner, can be considered.

D. International Experience

74. Every tax jurisdiction has a special tax regime for small enterprises. This follows from the fact that small traders find it difficult to cope, both in skills and cost, with the whole extent of requirements set by the tax laws and regulations; from recognition of the borderline position of some traders, who could easily slide into the informal economy; and sometimes for political expediency. The VAT is not usually included in such regimes, as the exemption given for firms with sales under the VAT threshold has exactly the purpose of leaving out of the VAT network the small-scale providers of goods and services.¹⁴ Taxes on property of assets (real estate, automobiles) are also outside the scope of the SME regime because these taxes are unrelated to the volume of business of the owner. Social security contributions are also, in general, paid regardless of size of the employer, since they follow, at least in principle, the different dynamic of social security. Customs duties are related to the value of trade, hence not quite amenable to taxpayer-size considerations.

75. The special tax regime usually applies to the income tax. The main base of taxation are profits made by the entrepreneurial activity, whose mode of taxation varies from country to country. Small enterprises resorting to simplified taxation are typically limited partnerships, other forms of partnerships, and sole proprietorships.¹⁵ It is hardly the case that, for example, a joint-stock company is seen under the umbrella of a simplified tax regime. What income tax does the simplified regime replace: CIT, PIT, or both? It depends on how the country treats business income or partnerships and even sole proprietorships. Common law countries tend to see partnership as transparent for tax purposes, taxing the profits only at hand of the shareholder; in this case, the simplified tax replaces the PIT. Civil law countries, including transition countries, tend to consider partnerships as entities and subject of taxation; in this case, the simplified tax would apply in lieu of the CIT and possibly also in lieu of the PIT if otherwise due. Therefore, the tax paid under the simplified regime satisfies any CIT or PIT that could exist in its absence.

¹⁴ Some countries require that the SME pays the VAT even if its turnover is below the SME threshold.

¹⁵ In some countries, the commercial law allows a trading sole proprietorship to be registered as an entity distinct from its owner—even for tax purposes. In other, s/he would be treated solely as a physical person, an individual.

76. Special tax regimes for SMEs are popular not because they collect less taxes than under the standard regime, but because of their simplicity and low cost. The SME qualifying for the special regime is normally made free of double-entry accounting, inventory assets, asset depreciation, preparation and filing of financial statements, filing of detailed tax returns, and several other tax-related obligations. Among the 33 countries surveyed in 2015 by the OECD, the SME special tax regime was optional in all but two countries (Israel and the Netherlands).

77. All countries that adopt a special tax regime for SMEs determine the tax liability by some presumptive criterion. A common practice is to calculate taxable income as a fixed percentage (margin) of gross sales (turnover), then apply the standard CIT rate on the presumed income. Or, more simply, applying a fixed tax rate directly on turnover. However, there are many variants of the basic regime, and also a wide range of scope in its application, as shown in Appendix II for selected countries.

E. Challenges in China

78. In China, SMEs in the simplified VAT regime have the option of voluntarily registering for the standard VAT scheme. This is attractive for firms that are in a net VAT credit position, for example, because they are exporters. It is important to ensure that this option is easily available in practice, without unnecessary administrative or legislative restrictions. The simplified regimes are supposed to address high compliance costs of small firms, not to add to their tax burden.

79. There is a large number of tax incentives, with 83 aimed at supporting, directly or indirectly, economic growth and the related employment creation. In the mission's view, such large number is nontransparent, likely to include significant overlaps, as well as ineffective incentives. Moreover, there are numerous local tax incentives, potentially creating domestic tax competition. Some of the incentives may have no real effect on economic behavior, as they just require companies to register in a particular region, without shifting their production. Such incentives simply erode revenues and should be avoided. Finally, some incentives may create difficulties under WTO anti-dumping rules, especially if they are akin to subsidies for a sector, creating risks to exports.

80. Business need to pay a number of administrative fees, in addition to general taxes. In the mission's view, these fees add to the complexity of the tax system. Moreover, some of these fees may harm productive efficiency, for example some fees, such as the cultural construction fee are levied on sales, which may lead to cascading.

81. There are many definitions of SMEs for various purposes. The limits established by the *SME Promotion Law* and its regulation seem unsuitable: they are too numerous, discriminate by sector, and are not coordinated with the VAT.

82. As a result of tax incentives, tax surcharges, and the incomplete refunds of input VAT for exporters, the VAT cannot fulfil its role as a tax on final domestic consumption. An ideal VAT would have few exemptions and a single rate. Some deviations from that ideal are common in all countries. In China, however, the presence of tax incentives that reduce a firm's VAT liability (e.g., for the employment of disabled workers) make for a more fundamental deviation than reduced rates for certain products. Such incentive, creates differences in VAT liabilities between firms producing the same products, making the tax a function of the production process rather than the final good. A similar effect occurs as a result of taxes (labeled "fees" in China) whose base is the net VAT liability of a firm (noting also that there is no equivalent subsidy to firms with negative net VAT liabilities). Unlike in most other countries, exports are not effectively zero rated, but instead refund rates of VAT on inputs vary by the type of supply.

F. Policy Options

83. Several measures could be taken to improve the transparency of the tax system.

- Abolish earmarked taxes on companies, and replace lost revenues by a simple increase in the VAT rate. In the short run, replace the lost funds by transfers. In the longer term, a general assessment of fiscal federalism is needed to ensure that each level of government has the tax revenues and tax measures it needs to fund its spending requirements. This could include strengthening of other local taxes, notably the property tax.
- Review the list of tax incentives with a view to eliminate duplications, ineffective or excessively costly incentives.
- Abolish all tax incentives that work through VAT exemptions or additional refunds. If their policy rationale is strong, replace them by direct subsidies or incentives working through income taxes.
- Introduce a single definition of a small-scale taxpayer that can be used for various taxes and possibly other purposes.

84. To support small businesses and their progress in technology and innovation:

- Replace the preferential tax rate for high-technology companies with an R&D CIT credit more directly linked to research spending. Make such credit refundable for SMEs and monitor to avoid misclassification and other fraud.

85. To support SMEs in their relatively higher compliance costs:

- Introduce an optional nationwide simplified income tax regime for small-scale taxpayers (covering PIT and CIT), allowing them to pay tax defined as a share of turnover, without the need for full book keeping.

- Ensure firms that wish to opt out of the current simplified VAT system do not face unnecessary obstacles. Such schemes are supposed to help taxpayers by reducing compliance costs, not to impose an additional tax burden. Ensure timely refunds of excess VAT credits (but monitor them closely to avoid fraud).

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Appendix I. Simulating the Chinese Income Distribution

To fully evaluate the impact of PIT and SSC reform on taxation revenues, marginal tax rates and household incomes in China would require detailed analysis of representative household level data on incomes using *tax microsimulation* methods (Creedy and others, 2004; Giles and McCrae, 1995).

As the mission had no access to such detailed microdata for Chinese households, this Technical Assistance Report instead presents a series of indicative simulations of PIT and SSC reform options using a stylized algebraic representation of the Chinese income distribution.

The specific distribution function used for this purpose is the Generalized Beta II (GB2) distribution, as applied in Jenkins (2007) among others. The GB2 probability density function $f(y)$ takes the form:

$$f(y|a, b, p, q) = \frac{a}{bB(p, q)} \cdot \frac{(y/b)^{ap-1}}{(1 + (y/b)^a)^{p+q}},$$

where $B(p, q) = \Gamma(p)\Gamma(q)/\Gamma(p + q)$ is the Beta function and $\Gamma(q)$ is the Gamma function (see McDonald, 1984). The parameter $b > 0$ is a scale parameter, and $a > 0, p > 0$ and $q > 0$ control different aspects of the shape of the GB2 distribution. Specifically, a influences the general shape of the distribution, while parameters p and q controls the left and right tails respectively. These four parameters give great flexibility to the shape of the GB2 distribution, and allows the function to be calibrated to a wide range of empirical income distributions.

For the purpose of simulating PIT and SSC reforms in this Technical Assistance Report, the GB2 distribution was approximately parameterized to the empirical quantiles of the pre-tax (labor and capital) income distribution for urban China, as reported by Piketty and others (2017) and reproduced in Table AI.1.

Table AI.1: Comparative Income Distribution Quantiles of GB2 and Piketty and Others

Quantile	(2017)	
	GB2	Piketty and others (2017)
10 th percentile	24,154	25,258
25 th percentile	36,603	36,261
50 th percentile	55,548	56,409
75 th percentile	85,195	85,220
90 th percentile	132,680	144,076

Sources: Mission estimates and Piketty and others (2017).

A close approximation to the quantiles reported in Piketty and others (2017) was achieved by inserting parameters $a = 2.90$, $b = 52,500$, $p = 0.9$ and $q = 0.8$ into the algebraic formula for the GB2 distribution. This provided the probability density function used as the basis for the empirical simulations reported in the tax policy reform options section of this Technical Assistance Report.

Appendix II. Presumptive Income Taxes

Table All.1. Presumptive Income Taxes

	Eligibility	Calculation of Tax Payable
Austria	<p>1. Small business: Annual revenue less than EUR 220 000</p> <p>2. Agriculture and forestry: Natural persons within the agriculture and forestry sector and assessed business value below EUR 130 000 (in 2015)</p>	<p>1. Taxable income calculated as 88% of annual revenue; normal tax rates apply</p> <p>2. Taxable income calculated as annual revenue (including VAT) minus a percentage of annual expenditures (70-80%) depending upon the type of activity, land size, location, and how (and where) products are sold. Taxable income for smaller (or less profitable) businesses is calculated based on the assessed tax value of land</p>
Brazil	<p>1. <i>Simples Nacional</i>: Annual revenue less than BRL 3 600 000</p> <p>2. <i>Microempreendedor Individual</i>: Natural person owner of a small business and annual revenue less than BRL 60 000 and employing not more than one person at minimum wage</p> <p>3. <i>Lucro Presumido</i>: Annual revenue less than BRL 78 million</p>	<p>1. Taxable income = annual revenue, with tax rates increasing in annual revenue and varying by activity (trade, industry or services)</p> <p>2. Monthly tax payable in lump-sum calculated by activity, as follows: BRL 40.4 (commercial or industrial), BRL 44.4 (service) or BRL 45.4 (commerce and services); exemption from federal taxes (state and municipal still apply, which are covered by the lump-sum payments described)</p> <p>3. Taxable income under corporate income tax calculated by applying a tax rate to annual revenue, where rates vary by activity</p>
Chile	<p>Agricultural property:</p> <p>1A. Owners or beneficiaries of agricultural property with annual revenue less than UTM 8 000 (including revenue from related parties)</p> <p>1B. Taxpayers that make use of the agricultural property under any other title (e.g. lessee, sub-lessee, gratuitous bailee) with annual revenue less than UTM 8 000 (including revenue from related parties)</p> <p>1C. Taxpayers with annual revenue less than UTM 1 000 (including agricultural annual sales carried out by related societies, communities or co-operatives, in proportion to the taxpayer participation in their capital, income or profits)</p> <p>2. Non-agricultural property: Owners or beneficiaries of non-agricultural property (no corporations, joint stock companies or foreign agencies) and effective income from property less than 11% of its fiscal property appraisal</p> <p>3. Mining: Sales of less than 36 000 tons of non-ferrous metal or UTA 2 000 of any mineral (provided that taxpayer is not a small-scale miner)</p> <p>Land transport:</p> <p>4A. Passenger: Annual revenue from passenger transport services less than UTM 3 000 (including revenue from related parties)</p> <p>4B. Freight: Annual revenue from passenger transport services less than UTM 3 000 (including revenue from related parties)</p> <p>5. Small taxpayers: Very small taxpayers in certain sectors (e.g. employment as a small-scale miner, trader selling on sidewalks, news vendor, fisherman or owner of a workshop).</p>	<p>1A&B. Taxable income calculated as 10% (A&B) or 4% (C) of the fiscal property appraisal; normal tax rates apply</p> <p>2. Taxable income calculated as 7% of the fiscal property appraisal; normal tax rates apply</p> <p>3. Taxable income calculated as a 4-20 % of net sales, based on the price of copper (even if the metal is gold or silver). If products do not contain copper, taxable income is calculated as 6% of the net value of their sale</p> <p>4A&B. Taxable income calculated as 10% of the vehicle value as determined by the tax authority</p> <p>5. Taxable income is subject to a single small taxpayer tax, which replaces all other income tax law taxes. For small-scale miners, taxable income calculated as the net value of the price received by the miner on sales of mining products, less rental income or royalties, where the tax rate depends on the variety of metal and its market price. For traders selling on sidewalks, tax payable is 0.5 UTM, paid annually. For news vendors, taxable income calculated as the total revenue from sales of newspapers, magazines, brochures and leaflets, with a 0.5% tax rate. For fishermen owning 1-2 ships, the annual tax payable depends on the gross tonnage: 0.5 UTM for gross tonnage less than 4 tons; 1.0 UTM for gross tonnage 4-8 tons; and 2.0 UTM for gross tonnage 8-15 tons. For owners of a workshop, tax payable is the higher of two values: 2.0 UTM or the sum of monthly advanced income payments of 3.0% of monthly gross income.</p> <p>Note: The presumptive tax schemes described here are active in 2015, but will be amended as of January 1, 2016.</p>

China	Eligibility is determined by the following criteria: a. Taxpayers who do not keep books; b. Taxpayers who have a tax obligation but have not filed by the deadline; or c. Taxpayers who have underreported their tax liability without justification.	Tax payable calculated according to a certain tax rate, where the rate varies with the taxpayer's sector or firm characteristics, such as business location, size and other factors.
Czech Republic	Small businesses owned by natural persons, no employees and with taxable income less than CZK 5 million in any of the three previous tax periods	Taxable income determined by tax authority
Denmark	Danish Tonnage Tax: Applies to shipping enterprises	Calculation of taxable income based on individual vessel tonnage, where the rate used to calculate taxable income increases with tonnage
France	Micro enterprises: VAT exempt and annual revenue less than: 1A. EUR 82 200 (sales of goods) 1B. EUR 32 900 (provision of services) 2. Self-employed micro enterprise: In addition to the micro enterprise rules above, household income tax ceiling of EUR 26 631 (in 2014) and contribution to a social security system	Taxable income calculated as: 1A. 29% of annual revenue; normal tax rates apply 1B. 50% of annual revenue; normal tax rates apply 2. Monthly tax payable calculated as a percentage of monthly revenue by business activity, as follows: 1% for sales of goods; 1.7 % for provision of services; and 2.2% for provision of professional services
Hungary	1. Simplified entrepreneurial tax (EVA): Annual revenue in the year preceding the previous year less than HUF 30 million and previous year annual revenue estimated at less than HUF 30 million 2. Tax for the self-employed (KATA): Registration as a small taxpayer	1. Tax payable is calculated by applying a tax rate of 37% to annual revenue 2. Flat tax scheme, as follows: Tax payable equal to HUF 50 000 per month for each fulltime entrepreneur or HUF 75 000 per month per full-time entrepreneur if the taxpayer elects for a higher social security service base. HUF 25 000 per month for each part time entrepreneur (fewer than 36 hours per week)
India	1. Transport business: Ownership of fewer than 10 goods carriages 2. Non-transport business: Annual revenue of less than INR 1 crore and status as a resident individual, Hindu undivided family or partnership firm	1. Taxable income computed at the rate of INR 7 500 per goods carriage, per month; normal tax rate applies 2. Taxable income equal to 8% of annual revenue, where normal tax rates apply; eligible small businesses are not required to maintain books of accounts
Italy	1. Natural persons with annual revenue less than EUR 40000, where the threshold varies by sector 2. Natural persons and partnerships engaged in agricultural activity	1. Taxable income calculated by applying a ratio to annual revenue; a reduced, flat tax rate of 15% applies 2. Taxable income calculated by cadastral criteria with reference to PIT and VAT
Japan	Taxation by estimation method: Incorporated or unincorporated businesses	Taxable income calculated using indirect information from tax audits
Poland	1. Natural persons or civil partnership with annual revenue in previous year less than EUR 150 000 2. Micro-entrepreneurs: Small services businesses employing fewer than five employees	1. Tax payable is a flat amount determined by the tax authority 2. Tax payable calculated using a tax card, where the tax liability depends on the activity and its scope, the number of employees and number of inhabitants in the city where business is located
Portugal	Annual revenue less than EUR 200 000 or net assets less than EUR 500 000	Taxable income calculated by applying coefficients for each type of income to annual revenue
Slovak Republic	Self-employed unincorporated business owners	40% of taxable income can be deducted to represent expenses, with a maximum deduction of EUR 5 040. Taxable income is calculated as the difference between annual revenue and the sum of the lump sum deduction and mandatory social and health contributions.
Spain	Annual revenue less than EUR 450000 and engagement in certain business activities	Taxable income for unincorporated businesses calculated by applying certain coefficients (based on the number of employees, business site surface, etc.) to annual revenue; normal tax rates apply
Slovenia	Annual revenue less than EUR 50000 in the previous tax year or less than EUR 100 000 in the previous tax year and taxpayer employs one full-time person for at least 5 months	Taxable income calculated as 80% of annual revenue (including expenses)
South Africa	Annual revenue less than ZAR 1 million (EUR 77 000)	Tax rate determined by the tax authority according to a scale, where the rate applies to annual revenue and is increasing in annual revenue

Source: OECD (2015)

Fiscal Affairs Department

International Monetary Fund
700 19th Street NW
Washington, DC 20431
USA

<http://www.imf.org/capacitydevelopment>