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Title of Paper:

THE DEVELOPMENT OF MEASURING INFORMAL SECTOR FOR AGRICULTURE ACTIVITIES IN MALAYSIA

Abstract

The contribution of informal sector should have been taken into consideration to ensure that the measurement of total activity is exhaustive. In most developing countries, agriculture activities have deemed to be one of the key contributors in informal sector. These activities are widely operated and mostly are run by unregistered household unincorporated enterprises operating on a small scale basis. Considering the challenges in measuring informal sector particularly in collection of data on production and labour information, Malaysia has embarked the Informal Sector Survey to fulfill the needs of the informal sector estimation. Nevertheless, the coverage and collections of the survey are limited to non-agricultural sector. Therefore, this paper will discuss two methods in estimating value added of informal sector activities for Agriculture sector and to analyse the contribution to Gross Value Added in Agriculture sector. The paper will focus on labour input method where numbers of own account and unpaid family workers are used as proxy indicators. In addition, ratio of mixed income will be considered as the second method to estimate informal sector for Agriculture activities.

1. Contents

2. Introduction

The measurement of informal sector activities is deemed important to represent exhaustive coverage in an economy. From the 15th ICLS conceptual point of view there was nothing against the inclusion, within the scope of the informal sector, of household unincorporated enterprises engaged in agricultural and related activities, if they meet the criteria of the definition. On the contrary, the 15th ICLS also suggested the exclusion of agricultural and related activities from the scope of informal sector surveys as it would lead to considerable expansion of survey operations and increase in costs.

The informal sector was defined in terms of characteristics of the enterprises (production units) in which the activities take place rather than the characteristics of the persons involved or of their jobs. As proposed by 15th International Conference of Labour Statisticians (15th ICLS) in 1993, were subsequently included in the revised System of National Accounts (SNA 1993). Production units of the informal sector were defined as a subset of unincorporated enterprises. The term enterprise was used in a broad sense to cover production units that employ hired labour, are owned and operated by single individuals working on own-account as self-employed persons, either alone or with the help of unpaid family workers. Persons employed in the informal sector were defined as those who were employed in at least one production unit in the sector in the reference period, irrespective of their status in employment and whether it was their main or a secondary job. Considering the small size and the more likely single-activity nature of informal economic entities, as well as to facilitate analysis by individual sectors, it is then appropriate to define production units in terms of establishments rather than enterprises.

In Malaysia, the criteria of informal sector are already applied as follows:

i. private unincorporated enterprise, i.e. enterprises owned by individuals or households that are not constituted as separate legal entities independently of their owners, and for which no complete accounts are available that would permit a financial separation of the production activities of the enterprises from the other activities of its owners.
ii. all or at least one goods or services produced are meant for sales or barter transaction; and
iii. their size in terms of employment is below a certain threshold to be determined according to national circumstances, and/ or not registered under specific form of national legislation, and/ or their employees are not registered.

The profiles of employment in the informal sector are gathered through the Informal Sector Survey. This survey was conducted by Department of Statistics Malaysia (DOSM) and the information for this survey only covers the usual households' members which involve in non-agricultural activities.

Therefore, this paper will attempt to propose conceptual methodology for measuring informal sector for agriculture activities in Malaysia to complement the contribution of informal sector in total economy.

3. Background of Agriculture Sector in Malaysia

The role of agriculture sector is still crucial to the Malaysia's economy, though its contribution to the overall GDP declining from nearly 20.0 per cent in the early 1990's, to below 10.0 per cent in 2015. Nonetheless, among all kind of economic

activities, Agriculture was the leading Small and Medium Enterprises (SMEs) contributor to total Gross Value Added (GVA) with a share of 48.6 per cent[1] in 2014.

In general, Agriculture structure in Malaysia is divided into two categories which are agro-food subsector and industrial commodity subsector. The development of this sector is guided by the National Agro-food Policy, 2011-2020 and the National Commodity Policy, 2011-2020, which aimed to increase food production and exports of industrial commodities[2].

Agro-food subsector encompasses of Food Crops, Livestock and Fisheries industries which often associated with smallholdings managed by individual farmers. Meanwhile, Industrial Commodities subsector refers to oil palm, rubber, pepper, cocoa, forestry and logging as well as other crops industries which are frequently associated with large estates managed by corporations.

SMEs play remarkable roles which also underpinned the form of Malaysian Agriculture backbone. From author point of view, micro-enterprise is best symbolizing comprehensive coverage of informal sector as part of the key driver to employment creation, income generation and economic growth. Moreover, informal sector is more prevalent in agro-food subsector than industrial commodities with the exception to rubber subsector where smallholder operators are predominant. The contribution of agro-food subsector continued to expand from 32.1 per cent in 2010 to 38.8 per cent in 2015 and this subsector is expected to reach 42.4 per cent in 2020 as targeted in the Eleventh Malaysia Plan[3].

[1] Small and Medium Enterprises 2014, Press released by DOSM
[2] Chapter 8: Re-engineering economic growth for greater prosperity, Eleventh Malaysia Plan, 2016-2020 by Economic Planning Unit, Malaysia
[3] Ibid

Given its importance, the growing magnitude and knowledge of its impact is significant to garner policy makers' attention for designing relevant instruments to reinforce this sector. Hence, efforts to measure the contribution of informal sector in Agriculture is deemed essential so that the magnitude of informal sector is better depicted.

4. Measurement of Value Added of Informal Sector in Agriculture Sector

4.1 Data Sources

For measuring the value added of informal sector in Agriculture, two main datasets are used which are Economic Census (EC) and Labour Force Survey (LFS). Both surveys are conducted by the Department of Statistics Malaysia (DOSM). EC is carried out once in every five years and provided comprehensive information on registered economic establishments and extensive coverage of economic activity. Output value, intermediate consumption, number of employees as well as salaries and wages by the category of establishment (i.e. micro, small, medium and large) are amongst the core information collected under this census. Meanwhile, LFS is carried out every month and provided information about characteristics of labour force, the structure of employment and status in employment (i.e. employer, employee, own account worker and unpaid family worker).

4.2 Methodology

This paper will attempt to employ two methods for the estimation of value added of informal sector in Agriculture. Labour input method will be the central focus to be highlighted as the first method. Meanwhile, the mixed income method will be discussed as the second method.

4.2.1 Labour Input Method

Following the adoption of Measuring the Non-Observed Economy's Handbook (OECD, 2002), direct and indirect methods are recommended for estimating the contribution of informal sector to national economy. Establishment surveys or mixed household-enterprise surveys are recognized as the most efficient and comprehensive way towards capturing data of informal sector under the direct method.

Indirect method is suggested to be used for estimating the contribution of the informal sector in the absence of surveys on informal sector. One of the indirect methods to estimate the output of informal sector is through the labour input method. There are three steps described with regards to labour input method estimation which are:

a) obtaining estimates of labour input in the informal sector by economic activity from a household survey;
b) deriving estimates of output and value added per unit of labour input with the same economic activity breakdown for enterprises belonging to the informal sector; and
c) multiplying the labour input estimates by the per unit productivity norm to obtain the output and value added of the informal sector by economic activity.

The first step is to get the estimates of labour input in the informal sector by economic activity from a household survey. As mentioned in the manual on Measuring Informality by the ILO; in each economic activity, own-account workers and contributing family workers can be assumed to belong to the informal sector component called ‘self-employed’. Based on this assumption, the number of own

account worker and unpaid family worker gathered from LFS will be the proxy of the number of employees in informal sector for Agriculture sector.

Secondly, the labour input method estimates the measurement of output and value added per unit of labour input by economic activity undertaken by informal sector enterprises. This information may be obtained from other sources such as mixed or establishment surveys, research or case studies. In Malaysia, labour productivity for informal sector is assumed equivalent as the labour productivity in formal sector since there are no surveys that cover the informal sector in Agriculture. Labour productivity for formal sector obtained from EC will be classified according to the size of establishment (number of employee) that will mirror the criteria of informal sector. As a result, labour productivity for micro establishment will be used as labour productivity in the informal sector.

The final step is by multiplying the labour input estimates by per unit productivity to obtain the output of the informal sector by economic activity. The number of self-employed persons from LFS will be multiplied with the labour productivity for each activity involved to get the output. The intermediate consumption is estimated by using the ratio of intermediate consumption and output of the formal sector (same micro establishment for deriving labour productivity). The value added by industry then obtained by difference between output and intermediate consumption.

For subsequent years, number of employees will be updated based on latest LFS while labour productivity remain constant, based on the assumption that technologies remain stable since the most recent survey.

4.2.2 Mixed Income Concept

Another method to estimate contribution of this sector is based on mixed income concept. Mixed income refers to income generated by unincorporated enterprises owned by members of households either individually or in partnership with others in which the owner, or other members of their households, may work without receiving a wage or salary. At this juncture, a mixed income derived from agricultural activities is closely reflected to portray the contribution of informal sector for this activity.

The estimate of total mixed income is obtained from the generation of income account with regards to households sector. In order to derive mixed income for agriculture, the profile of income from self-employment which is gathered from Household Income Survey (HIS) will be used to get the structure of mixed income for Agriculture sector. Income from self-employment comprises income from agriculture activities, non-agriculture activities and own consumption as the key components. Hence, the structure of income from agriculture activities then will be utilized to represent mixed income for Agriculture sector. For subsequent years, the structure of mixed income for Agriculture will be updated accordingly if new Household Income Survey is coming in.

5. Findings

The findings from labour input method for year 2010 are presented in Table 1 and estimates of Value Added of Informal Sector in Agriculture Sector from 2010 till 2014 are shown in Table 2. Meanwhile, results for mixed income concept are presented in Table 3.

Table 1: Estimate of Value Added of Informal Sector in Agriculture Sector by using Labour Input Method, 2010

Number of Self-employed ('000)	944.7
Value Added per labour (RM)[4]	20,833
Estimated GVA in informal sector (RM Billion)[5]	19.7
GVA for Agriculture (RM Billion)	82.9
Contribution of Informal sector to GVA (%)	23.7

Based on EC 2010, the estimates of value added per labour for Agriculture sector was RM20,833 while the number for self-employed from LFS was 944.7 thousand. The estimation of GVA in informal sector is derived from the aforementioned information. Hence, the contribution of informal sector to GVA Agriculture in 2010 was 23.7 per cent.

Table 2: Estimate of Value Added of Informal Sector in Agriculture Sector by using Labour Input Method, 2010-2014

ITEMS	2010	2011	2012	2013	2014
Number of Self-employed ('000)	944.7	888.2	1,071.1	1,115.0	957.7
Estimated GVA in informal sector (RM Billion)[6]	19.7	19.0	19.9	19.6	17.2
GVA for Agriculture (RM Billion)	82.9	104.4	95.1	92.8	98.2
Contribution of Informal sector to GVA (%)	23.7	18.2	21.0	21.2	17.5

[4] The data estimation are those of the authors and do not necessarily reflect the views of the Department of Statistics Malaysia.
[5] Ibid
[6] Ibid

For subsequent years, the estimation of GVA in informal sector is obtained by using the similar labour productivity in 2010 and by updating the number of employees.

Table 3: Estimate of Value Added of Informal Sector in Agriculture Sector by using Mixed Income Concept, 2010

Mixed Income in Agriculture (RM Billion)[7]	18.2
GVA for Agriculture (RM Million)	82.9
Contribution of Informal sector to GVA (%)	21.9

In 2010, the estimated contribution for total mixed income in Agriculture was RM18.2 billion. The profile of income from self-employment from Household Income Survey was used to get the structure of mixed income for Agriculture sector. Therefore, the contribution of informal sector to GVA Agriculture is 21.9 per cent.

6. Advantages and Disadvantages

Both methods have advantages and disadvantages depending on the availability of data sources. The main advantage for Labor Input Method is the number of employee that can be updated each year based on data from the latest LFS. This would give the structure of the recent informal sector. In addition, the Labor Input Method can also be implemented at detail level by industry based on the data used. However, this method has disadvantage in which the labour productivity can only be updated when there is a source of new economic census or survey data. This may not reflect the current economic structure when there are changes in economic activity, such as changes in commodity prices.

[7] The data estimation are those of the authors and do not necessarily reflect the views of the Department of Statistics Malaysia.

The main advantage of Mixed Income concept is the information on self-employment income obtained from HIS would give a clear picture concerning the distribution of household income, particularly for self-employee. In terms of disadvantages, the structure of the mixed income can only be updated depending on new data sources.

Both methods are recommended due to the availability of data sources such as EC, LFS and HIS. In addition, these methods also give similar results to measure the contribution of the informal sector in agricultural sector.

7. Challenges

i. Most of the key indicators that we apply to estimate the contribution of informal sector in Agriculture i.e. labour productivity, income from self-employment component can only be obtained once census or survey is conducted. In this study, we used data from recent economic census which is conducted once every five years and household income survey which is conducted twice in five years. Therefore, any data updates for subsequent years are highly dependent on the availability of new census or survey.

ii. In Malaysia, given that agriculture activities are widely operated and mostly run by households that are not registered and operate on a small scale, the coverage of this sector is excluded in the Informal Sector Survey. By incorporating agricultural activities into the measurement of the informal sector, it might lead to considerable expansion of survey operations and increase in costs.

8. Conclusion

The role of agriculture sector is still crucial to the Malaysia's economy, though the contribution to the overall GDP is declining. Despite the declining contribution, the role of informal sector in Agriculture is deemed important in tandem with the expansion of the agro-food sub sector which is always associated with smallholdings and individual farmers. Furthermore, informal sector is more prevalent in agro-food subsector than industrial commodities with the exception to rubber subsector.

In this paper, two estimation approaches have been proposed for the measurement of value added of informal sector in Agriculture. From our findings, both methods showed nearly the same results where labour input method illustrated 23.7 per cent to the overall GVA in Agriculture whilst mixed income concept portrayed 21.9 per cent. At the present stage, both methods are assumed to be the most practical approach in identifying the contribution of informal sector in agriculture. Nevertheless, there is still room for improvement in terms of proposed methods. A dedicated informal sector survey for agriculture is also recommended for the benchmark year to determine the real magnitude and performance of informal sector in Agriculture as opposed to present estimation that has been done.

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