FROM THE RESEARCH PIPELINE: WHAT'S COOKING?

MITIGATING THE SIZE OF SHADOW ECONOMY AND TAX EVASION IN 10 ASEAN ECONOMIES: IS THERE A ROLE FOR ISLAMIC BANKS?

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Shadow economy and tax evasion are two inseparable phenomena. The existence of the former suggests the present of the latter and vice versa. The presence of shadow economy reduces the tax base and thereby eventually reduces government tax revenue. Since the activity of the shadow economy is excluded from the official gross domestic product (GDP) statistics, thus, official GDP statistics will provide wrong indicators for macroeconomic policy decisions. On the other hand, tax evasion is a growing concern to the government as the tax revenue loss has serious economic consequences. By evading taxes the government is deprived from providing adequate financing for public services, infrastructure, human capital development, best health care services and other facilities that would benefit the society. Furthermore, the loss of tax revenue may result in slow economic growth, the proper functioning of the government as the ability to finance its basic expenses is threatened. Thus, fighting shadow economy and tax evasion should be an important agenda for any government. In this study, we propose to estimate the size of the shadow economy and tax evasion for 10 ASEAN economies and further to determine factors affecting both shadow economy and tax evasion. To estimate the magnitude of the shadow economy (and tax evasion) we employ the Multiple Indicators Multiple Causes (MIMIC) method. The period of the study span from 1970-2014. The study will focus on the role of financial sector, in particular the Islamic banks, as vehicle to reduce shadow economy as well as tax evasion. We conjecture that the Islamic banks can play a better role, if not complementing the conventional banks in reducing shadow economy and tax evasion in the 10 ASEAN economies. Further, by taking into account the size of the shadow economy, the development gap between the ASEAN economies can be reduce.

One of the major problems in formulating economic policy in developing countries is the absence of reliable, accurate, timely, and consistent official economic and social statistics. In particular, although national accounts statistics are usually compiled in line with the conventional guidelines of the System of National Accounts (1993), official income statistics suffer from both incomplete coverage and inaccuracies in the valuation of economic activities. Deficiencies in estimation techniques and difficulties associated with data collection lead to misreporting and underreporting of national accounts statistics. Also, economic agents deliberately conceal information from the authorities either because they are involved in illegal activities are usually conducted in the shadow economy. Obtaining accurate statistics about economic activities and the allocation of economic resources in the shadow economy is important for the formulation and implementation of effective economic and social policies.

On the other hand, tax evasion remains one of the most common and persistent problem for any nation. It is a growing concern to the government as the tax revenue loss has serious economic consequences (Cerqueti and Coppier, 2011). By evading taxes the government is deprived from providing adequate financing for public services, infrastructure, human capital development, best health care services and other facilities that would benefit the society (Johnson et al., 2000). Furthermore, large tax evasion signifies that the country having large shadow economy compared to the developed world (Fuest and Riedel, 2009). Franzoni (1998) asserts that the loss of tax revenue may result in slow economic growth, upsetting the proper functioning of the government as the ability to finance its basic expenses is threatened.

The Tax Justice Network (2011) reported that the estimated total tax evasion in 2011 is in excess of US$3.1 trillion or about 5.1% of world GDP. Europe experienced tax losses of US$1.5 trillion, followed by Asia US$666 billion, North America US$453 billion, South America US$376 billion, Africa US$79 billion while the Oceania US$46 billion. Among the ASEAN-5 economies Malaysia ranked fourth with total tax evaded of US$11.2 billion; after Thailand US$25.8 billion, Indonesia US$17.8 billion and the Philippines US$11.7 billion. On the other hand, Singapore experience tax losses of US$4.1 billion. Thus, fighting shadow economy and tax evasion should be an important agenda for any government.

Recent studies have indicated that financial sector can play an important role in mitigating the size of the shadow economy. Studies have shown that higher level of financial development can reduce the size of the shadow economy and consequently
Scholars found that Islamic banks promote economic growth, and Islamic banks appear to be complements to, rather than substitutes, for conventional banks (Imam and Kpodar, 2013, 2015; Gheeraert, 2014). Naceur et al. (2015) point out that Islamic finance and the Shariah-compliant financial products that form the core of Islamic banking were associated with greater financial inclusion in the OIC countries. Furthermore, Beck et al. (2013) posit that in the time of crises, Islamic banks are less likely to disintermediate as they are better capitalized, having higher asset quality and higher intermediation ratio compared to the conventional banks. Thus, given the relative low access to financial institutions and products in most developing countries (Honohan, 2008), there is considerable potential for Islamic finance and Islamic banks, because it can contribute to financial intermediation development by moving investors (lenders) and traders (borrowers) from the informal to the formal markets, particularly in the Muslim countries. In fact, in a recent study by Schneider et al. (2015), they found that in low and middle-income countries, Islamic countries have relatively low shares of the shadow economy, compared to other non-Islamic countries.

Thus, the following hypotheses are formulated:

**Hypothesis 1 (H1):** Countries with Islamic banking system should have smaller size of the shadow economy and tax evasion;

**Hypothesis 2 (H2):** The presence of Islamic banks should reduce the size of the shadow economy; and

**Hypothesis 3 (H3):** Gross domestic product adjusted for shadow economy should reduce the development gap between ASEAN economies.

Basically, the study embarks on the following objectives:

1. To determine the size of the shadow economy and tax evasion in 10 ASEAN economies,
2. To examine the role of Islamic banks in mitigating the size of shadow economy and tax evasion in 10 ASEAN economies, and
3. To investigate whether the development gap (income disparity) among the ASEAN economies has been reduced after taking account the size of the shadow economy.

Tax Evasion, Shadow Economy and Financial Development: Recent studies investigate how access to the financial or credit market could mitigate shadow economy. Numerous studies linking shadow economy and financial markets suggest that although formality imposes fiscal burden on a firm, such as taxes or costs of complying with regulatory requirements in the form of registration and license fee to be able to operate formally, benefits of being formal consist in the access to public goods and services, institutions, access to new technology, access to external finance and other benefits associated with participation in the formal economy (Dabla-Norris and Koeda, 2008; Dabla-Norris et al., 2008).

For example, Straub (2005: 299) argues that “complying with costly registration procedures allows the firms to benefit from key public goods, enforcement of property rights and contracts that make the participation in the formal credit market possible.” Antunes and Calvacanti (2007) contend that the benefit from formalization is better access to outside finance; and Quintin (2008) stresses that the size of the informal sector decreases as the degree to which financing contracts can be enforced in the formal sector rises.

**“Is there a role for Islamic banks in reducing shadow economy?”**

According to Bose et al. (2012) and Blackburn et al. (2012) in developed economies characterized by high level of financial development, individual or firm have easy access to the credit market. However, borrowers have to declare their income and/or assets and this can be used as collateral or to gauge their creditworthiness but in doing so they will be subject to tax liability. Since the value provided by the financial intermediation is considerable (Gordon and Li, 2009), there is less incentive to evade tax and the need to participate in the shadow economy is minimal. On the contrary, for developing economies with low level of financial development, there is limited access to the credit market due to shortage of loanable funds, asymmetric information and high cost of borrowings; borrowers have less incentive to declare income and/or assets. In such environment, tax evasion is substantial and shadow economy is also larger. Their cross-sectional and panel analyses indicate that improvement in the development of the banking sector as well as the depth and the efficiency of the banking sector contribute to smaller shadow economy.

On the other hand, using a standard overlapping generation framework, Bittencourt et al. (2014) posit that both a lower [higher] level of financial development and a higher [lower] level of inflation lead to a bigger [smaller] shadow economy. Furthermore, societies with a higher [lower] level of financial development will have a lower [higher] cost of monitoring. Borrowers that choose to undeclare their income to the bank will be subjected to higher costs of access to and conditions of obtaining loans. These higher costs and with lower level of financial development, will provide an incentive for borrowers to participate in tax evasion activities.
The Size of Shadow Economy and Tax Evasion

In order to estimate the revenue from tax losses, it is imperative to estimate the extent of the shadow economy. In this study we follow the approach popularize by Schneider and his associates (Schneider, 2005; Dell’Anno et al., 2007) by using the multiple indicators multiple causes (MIMIC) method to estimate the shadow economy which is considered a latent variable (unobservable). It is expected that increase government consumption in the official economy will instigate crowding-out effect and also introduces distortions to competition in the market; and encourage individual and firm towards shadow economy. Similarly, higher tax burden will push people to participate in the shadow economy and evade taxes. Unemployment and inflation indicate peoples’ misery as a result of recession or economic downturn.

In such condition individual or firm will move towards shadow economy to find alternative sources of income and cheaper goods and services. The increase in the official GDP as well as currency will indicate increasing in the shadow economy. To compute the size of shadow economy and tax evasion, we follow the steps in Dell’Anno and Schneider (2009) and Buehn and Schneider (2012) to transform the index of shadow economy into their cardinal values.

The Impact of Islamic Banks on Shadow Economy and Tax Evasion

In this study, we also attempt to examine the impact of Islamic banks on shadow economy and tax evasion. In this study we specify the determinants of shadow economy and tax evasion as follows,

\[
\text{shadow}_t = \theta_0 + \theta_1 \text{islamic}_t + \theta_2 \text{conventional}_t + \theta_3 Z_t + \omega_t
\]

(1)

\[
\text{taxevasion}_t = \theta_0 + \theta_1 \text{islamic}_t + \theta_2 \text{conventional}_t + \theta_3 Z_t + \epsilon_t
\]

(2)

where \(\text{shadow}_t\) and \(\text{taxevasion}_t\) are the size of shadow economy and tax evasion respectively; \(\text{islamic}_t\) is a measure of Islamic banks while \(\text{conventional}_t\) is a measure of the traditional banks; \(Z_t\) is the control variables that may include tax burden, government consumption, income, inflation, population, democracy, governance etc. The error terms are denoted by \(\omega_t\) and \(\epsilon_t\). It is expected a priori that \(\theta_1, \theta_2 < 0\). For estimating the long-run model as per Equations (1) and (2), apart using Ordinary Least Square (OLS), other procedures used in the study which are appropriate for small sample and can eliminate simultaneity or endogeneity bias include Dynamic OLS (DOLS), Fully Modified OLS (FMOLS), and Canonical Cointegrating Regression (CCR). Stock and Watson (1993) propose the dynamic OLS; Park (1992) introduces the canonical cointegrating regression; while Phillips and Hansen (1990) suggest the fully-modified OLS. However, the long-run model is valid or non-spurious if all variables in Equations (1) and (2) are cointegrated. To test for cointegration, for OLS we employ the conventional Engle and Granger (1987) two-step procedure for testing the null hypothesis of non-cointegration or the present of unit root on the residuals. On the other hand, for FMOLS, DOLS and CCR, we report the \(L_{1,*}\) statistics, the test for the null hypothesis of cointegration.

Income disparity among the ASEAN Economies

In order to investigate the narrowing of development gap or income disparity among the ASEAN economies, we employ the
time-series tests of convergence and catching-up hypothesis following Bernard and Durlauf (1995). In a time-series approach, stochastic convergence asks whether permanent movements in one country’s per capita income are associated with permanent movements in another countries’ income, that is, it examines, whether common stochastic elements matter, and how persistent the differences among countries are. The stochastic convergence requires that relative regional incomes to be stationary where the shocks to a stationary time series are temporary. Thus, over time, their effects will dissipate and the series will revert to its long-run mean or trend. As such, we can say that the stochastic convergence has occurred.

According to Bernard and Durlauf (1995, 1996) convergence between two or more countries when the long-run forecasts of output differences tend to zero as the forecasting horizon tends to infinity. For instance, we can say that two economies i and j are converged if their per capita output \( y_{i,t} \) and \( y_{j,t} \) satisfy the following condition:

\[
\lim_{k \to \infty} \mathbb{E}(y_{i,t+k} - y_{j,t+k} \mid I_t) = 0
\]

where \( I_t \) is the information set at time \( t \), \( y_{i,t} \) and \( y_{j,t} \) are per capita output for countries i and j at time t, respectively. This definition of convergence is relatively unambiguous for two-economy situation, but if the convergence is considered in a sample of more than two economies, it may relatively ambiguous. Further, this definition also asks whether the long run forecasts of output differences tend to zero as the forecasting horizon tends to infinity. So, if \( y_{i,t+k} - y_{j,t+k} \) is a mean stationary process then it is considered that the definition of convergence is satisfied and it is also required that the two countries’ output must be cointegrated with a cointegrating vector \([1-1]\). However, if the series \( y_{i,t+k} - y_{j,t+k} \) contains a unit root, then we would reject the definition of convergence.

Nevertheless, if the output series do not converge, they may still have common trends and there may be a small number of stochastic trends affecting output which differ across countries (Bernard and Durlauf, 1995, 1996). In other words, series i and j contain a common trend if their long term forecasts of output are proportional at a fixed time t.

\[
\lim_{k \to \infty} \mathbb{E}(y_{i,t+k} - \alpha y_{j,t+k} \mid I_t) = 0
\]

Equation (7) indicates that series i and j have a common trend if their output series are cointegrated with cointegrating vectors \([1,-\alpha]\). In the multivariate case, Johansen’s maximum likelihood analysis can be used in conjunction with the original output data for all of the countries to determine the number of cointegrating vectors (common trends). In this study, \( y_{i,t} \) and \( y_{j,t} \) are the “corrected” output after taking account the size of the shadow economy.

The significant presence of shadow economy can lead to macroeconomic, microeconomic or social problems. Macroeconomic policy can be less effective and this in turn can make it harder to attain and sustain its stability. Furthermore, official statistics provide the wrong indicators for macro-policy decisions. On the microeconomic aspects, shadow economy creates distortions in resource allocation. Regarding the social consequences, the presence of shadow economy, where free-riding on public services paid for by few is common, could lead to a sense of unfairness and deepen the distrust toward the ability of the political system to govern. Unfairness and distrust will depress tax morale and increase tax evasion. By treating the shadow economy as a distinct entity, rather than just a symptom of policy failure, we are able to examine its short-term and dynamic consequences for economic development.