CHAPTER 6

UNDERGROUND ECONOMY – SIZE, GROWTH, COMPONENTS AND TAX LOSS

Introduction

This study has employed four different statistical techniques on three sets of non compliance data samples to generate several estimates of the size of UE for comparison. Two estimates based on correlation matrix and correlation coefficient between reported and unreported direct tax data by institutional and individual tax payers is shown in paragraph 5.3.7 of Chapter Five. This chapter shows another two estimates based on: proportion of non compliance with filing of income tax declaration form by institutional and individual tax payers (paragraph 6.1.1); and non compliance with reporting income of legal activities and illicit activities (paragraph 6.1.2 onwards).

6.1 Estimates based on non compliance with filing of income form

Non compliance rate of filing Income Tax Return Form (income declaration form) fluctuates between 28.96% and 33.51% over the period 1996-2004. By group of participants, about 33.80% individuals (28.28% businesses and 37.32% employees) and 34.66% institutional do not submit tax form (Tables 6.1 to 6.3). The proportion of "missing" tax forms is used to infer the proportion of "missing

income" that is not recorded in the official economy, i.e. the size of UE. The size of missing income is about a third of GDP in total (34.19%) and by participants (institutional [34.66%] and business individuals ([28.28% - OG] and salary individuals [37.2% - SG]). Estimates made on total data and on different participants do not differ much. It implies that they all have the same tendency to participate in UE. This identical tendency of participation across group suggests that one could estimate the size of UE on different participants (by salary individuals, business individuals, and institutional are not reported) that generate an approximate size.

Table 6.1: Total filing of Income Tax Return Form (RF)

	RF issued ('000)	RF received ('000)	Overall compliant (%)	Overall non-compliant (%)
1996	2,628	1,867	71.04	**28.96**
1997	2,630	1,828	69.51	**30.49**
1998	2,969	2,000	67.36	**32.64**
1999	2,880	2,014	69.93	**30.07**
2000	2,985	2,081	69.72	**30.28**
2001	2,853	1,897	66.49	**33.51**

Table 6.2: Filing of Income Tax Return Form (RF) by institutional and individual group

	RF issued ('000)				RF received ('000)			
	SG	OG	Company	**Total**	SG	OG	Company	**Total**
2002	2,079	999	172	**3,250**	1,218	682	174	**2,074**
2003	1,724	803	205	**2,732**	1,102	592	125	**1,819**
2004	1,959	1,063	272	**3,294**	1,284	778	190	**2,252**

Institutional (company) and individual (employee (SG) and business (OG))

Table 6.3: Non filing of Income Tax Return Form by institutional and individual group

	Non Compliance (%)			
	SG	OG	Company	Average
2002	41.41	31.72	39.28	**37.47**
2004	36.08	26.34	39.04	**33.44**
2006	34.47	26.78	30.27	**31.64**
Average	**37.32**	**28.28**	**34.66**	**34.19**

6.2 Estimates based on unreported income of legal and illicit activities

Time series of 1980-2009 enforcement data of tax, anti corruption agency and police forces were analysed to estimate the size of UE of legal activities and illicit activities that escape taxes based on tax non compliant ratio and GDP value as the official economy. The irregular economy (IrE) is computed based on ratio of tax non compliance of enforcement statistic to tax compliance of voluntary reports in the captured the tax base.

To estimate the illegal economy the incomes of illicit activities obtained from enforcement data of indirect tax data, anti corruption agency and police forces are assumed the unreported direct taxable income outside the captured tax base. As compliance with criminal law is unknown, it is not possible to compute the ratio of illicit to lawful income, the value of commercial crimes (smuggled goods, drugs trafficked, bribed money, frauds etc.) are considered the illegal economy, based on enforcement success rates (ESR) as the amplifying factor.

The sum of iLE (illicit activities) and IrE (legal activities) constitutes the total UE. Formulation and equations of estimating the size of UE are illustrated in paragraph 3.5 of Chapter Three.

6.3 Enforcement success rate (ESR)

The ESR is the proportion of finalised cases (success cases) over total enforcement cases. Assuming that the distribution of finalized and non-finalised enforcement cases is regular then the product of its proportion would increase proportionately. Hence, the product of success cases (representing the low bound estimate) and ESR could generate range estimates. The range estimates generated is in three level series; UE in the lower series (success cases [SC]), UE in the moderate series (SC x upper ESR) and UE in the upper series (SC x lower ESR).

6.3.1 Enforcement success rate of irregular economy

The ESR of legal activities is used to estimate the ESR for irregular economy. It is based on direct tax non compliant (tax evasion) success rate; the proportion of finalized over total of audit and investigation cases. As discussed in paragraph 5.6 of Chapter Five, the ESR of unreported taxable income is about 50%. ESR of recovery of unpaid is assumed at its optimum level because tax collection account is more complex and subject to external efforts and systems such as court proceedings, payment transfers, intermediary accountings and information technology.

6.3.2 Enforcement success rate of illegal economy

The ESR of commercial illicit activities is used to estimate the ESR for illegal economy. It is based on bribery enforcement data; the proportion of finalized cases over total of bribery cases. As discussed in paragraph 4.6.2.3 of Chapter Four, the anti-corruption enforcement data indicate that only 50% of reported cases were classified as bribery activities, others were treated as "general

complaints of unsatisfactory feelings against authority". Out of this half (0.5), about 12.21% (0.1221) bribery cases were investigated with a 50% (0.5) accused success rate. Decision rate on prosecution of these accused cases in court was only at 36.63% (0.3663) with 60% (0.6) charged and the remainder 40% were either acquitted or discharged. Assuming that the distribution of bribery cases is regular, the ESR considering the proportion of reported cases investigated by enforcement task force is as low as 0.67% (0.5 X 0.1221 X 0.5 X 0.3663 X 0.60).

The low and declining ESR of bribery cases is likely due to difficulties of uncovering "a series of secret private beneficial activities" which may also involve "important people" and other third party interference (Figure 6.1 and Table 6.4). Often the proof of crime requires first proving that an irregular or illegal act exists. Second, the prosecution must prove some affirmative by the defendant to not complying. Third, prosecutors must show that the defendant possessed the specific intent to not complying with a known legal duty. The prosecution sometimes could be cloaked by lack of concrete evidence, and to convict, the jury must find the defendant guilty of each of these elements beyond a reasonable doubt.

Since bribery is a commercial crime that is conducted in great secrecy, it is often regarded as the lowest captured crime. For this reason, the ESR of 0.67% is thought to be too low to be employed on other illicit activities. The ESR is recomputed based on two main "enforcement efforts", i.e. charged cases over investigation efforts and charged cases over prosecution efforts. The proportion of

bribery cases not investigated (0.5 X 0.1221) is ignored as enforcement task force is assumed to be at optimum level.

Over 1998-2009, the average ESR based on proportion of charged investigated cases was at 12% and based on charged prosecuted cases was at 17%. Over the same period by probability method the proportion of charged investigated cases was at 10.99% (0.5 X 0.3663 X 0.60) and charged prosecuted cases was at 21.98% (0.3663 X 0.60). For simplification, the ESR is rounded to the nearest tenth, at 10% and 20% to generate the moderate and upper bound estimates of illegal economy.

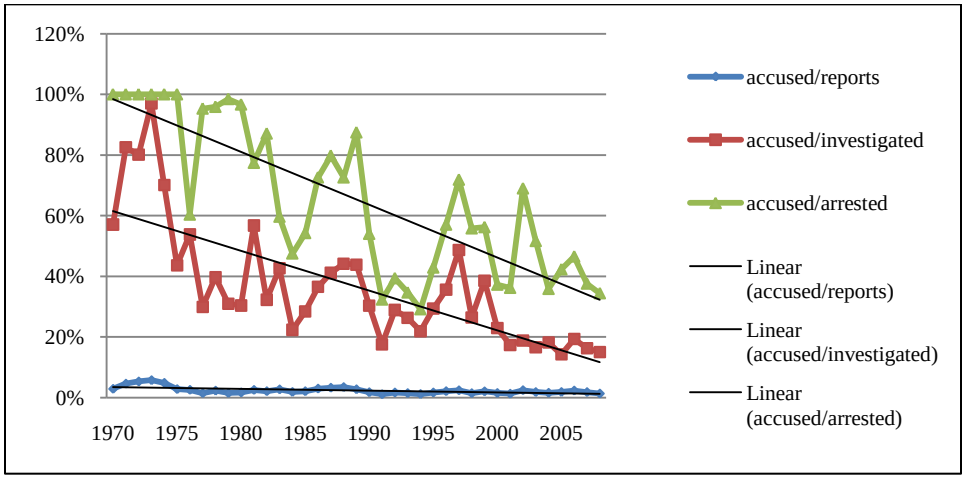

Figure 6.1 –Anti corruption - enforcement success rate

Table 6-4: Enforcement success rates of bribery cases (examined in 5 year period)

5 year period	Detained for offences on reports	Detained for offences on investigated	Charged on reports	Charged on investigated	Charged on accused
1990-94	1.19%	20.59%	2.30%	43.01%	98.1%
1995-99	1.51%	27.99%	1.22%	22.46%	54.44%
2000-04	1.39%	15.12%	0.69%	8.31%	36.77%
2005-08	1.87%	16.98%	0.67%	5.94%	35.34%

6.4 Estimates based on different data and statistical techniques

Table 6.5 summarises the estimates of size of UE employed by various statistical techniques on enforcement data obtained from tax office, police forces and anti corruption agency. To facilitate discussion, the estimates are classified into five models (Model A, B, C, D and E).

Estimate of Model A based on non compliant ratio of income of legal and illegal activities over an economic cycle period (1980-2009) indicate that the size of UE fluctuates between 8.69% and 26.9%, large in bad economy. By UE components, direct tax non compliance constitute the largest proportion (50%-75%) followed by indirect taxes (7%-30%) and illicit activities (10%-43%).

Estimate of Model B indicate that the size of UE based on non compliance with filing of direct tax form by different participants is between 28.28% and 37.22%. Its average of about a third implies that the tendency of institutional (company), employee and business individuals' participation the UE approximate and estimates across participants do not differ much. It implies that they equally tend to conceal income earned from tax authority.

Estimate of Model C based on percentage proportion of UE components of unpaid direct taxes indicate that size of institutional UE (55.33%) is larger than individual UE (38.64%). The larger proportion of institutional UE is consistent with the unreported income and unpaid tax mix as discussed in paragraph 5.3.1. Institutional UE is twice to twenty times the individual UE

Estimate of Model D based on regression of unreported on reported direct taxable income of institutional and individual is identical at 48%. It also implies that both individual and institutional would conceal about 48% of income earned.

Estimate of Model E based on correlation matrix of unreported on reported direct taxable income of individual is about 33%.

All estimates generated are useful as they either reveal additional information or support one another. Considering estimates of the five models, estimate of the upper range is between 26.9% and 48%, with a midpoint of 35%.

Table 6.5: Size of UE – by different data coverage and statistical techniques

Model	Period	Data	Non compliant activities	Statistical technique	UE size (% of GDP)
A	1980-2009 (Chapter 6 – para 6.4 & 6.5) (Chapter 6 – para 6.6 & 6.7)	• Direct tax (evasion and non payment) • indirect tax (evasion and non payment) • illicit activities (evasion by non filing)	• Direct tax • Indirect tax • Illicit activities	• Non compliant ratio • Amplifying with success rate	Annual range: 8.69% to 39.87% Average range: 8.69% - 26.94% By tax non compliant activities: • 50% - 75% • 7% -30% • 10% - 43%
B	1996-2001, 2002 - 2006 (Chapter 6 – para 6.1.1)	Time series: non submission of direct tax declaration form	Direct tax • Salary individual • Business individual • Company	Percentage proportion	Overall: 33.51% Components of UE: • 37.32% • 28.28% • 34.66%
C	2000-2010 (Chapter 4 – para 4.6.1.1)	Unpaid tax	Direct tax • Individual • Company • Others	Percentage proportion	• 38.64% • 55.33% • 6.03%
D	2005-2008 (Chapter 5 – para 5.3.7)	Unreported income compared to unreported income	Direct tax • Individual • Company	OLS uni regression (double log models)	• 41% - 55% • 48%
E	2005-2008 (Chapter 5 – para 5.3.7.2)	Unreported income compared to unreported income	Direct tax • Individual	Correlation matrix	• 12% -57%

The estimate of Model A was further examined as the size based on a 30 -year time series data could be generated in three level series amplified by ESR (lower, moderate and upper bound estimate). Estimates are computed annually and in

average 5 year period for comparison. Time series estimate could also be evaluated economically in regression models, as discussed in Chapter 7.

Table 6.6 summarises the size of UE in absolute term, relative to GDP and average growth size. Over 1990-2009, the UE increased in about 3.82 to 5.46 folds amounting between MYR 426 and MYR 850 billion. The upper bound is about twice the lower bound level. Its growth was relatively high in the recession years 1985-89 and 1995-99 at 16.09% and 20.57% respectively. The size of UE relative to GDP increased to its peak at 26.94% however subsided in the post 1997-98 crises. Even though the UE increased in value, its size relative to GDP exhibit a downward trend to a size of 15.4% of GDP due to a slower growth.

Table 6-6: Size and growth of UE

5-year time period	Size (MYR million)			Size (% of GDP)			Growth (%)
	Lower bound	Moderate bound	Upper bound	Lower bound	Moderate bound	Upper bound	
1980-84	2,514	9,360	9,360	10.55	11.10	11.10	7.99
1985-89#	6,205	12,970	12,970	11.45	12.56	12.56	16.09
1990-94	39,347	56,662	57,624	14.81	18.21	18.48	12.86
1995-99^	98,520	169,211	202,242	18.10	24.52	26.94	20.57
2000-04	129,246	230,366	252,916	13.21	20.03	21.69	0.60
2005-09	150,328	281,545	314,730	8.92	14.16	15.4	0.27
Total	**426,161**	**760,113**	**849,843**				

#High growth due to 1980s economic recession. ^High growth due to 1997-98 financial crises

6.5 Size in time series relative to GDP

For international comparison, size of UE is discussed in relative to GDP instead of in units of currency. Figure 6.5 illustrates UE size based on upper estimates time series of enforcement statistics of legal and illegal activities over a period of

1980-2009. The annual size of UE in the lower series fluctuates between 8.69% (2007) and 23.50% (1999). Estimates of upper series fluctuate between 10.85% (1980) and 39.87% (1998). The substantial increase of UE size in bad time implies that it grows opposite to GDP. However, "mild" fluctuation of UE growth in normal time makes it relatively less volatile than the GDP. The magnitude of its variance test is relatively smaller (between 0.4169 and 0.4630) compared to GDP and per capita (between 0.5082 and 0.5921).

Figure 6.5 illustrates UE size hovers around 20% of GDP in normal times (10% to 15% in most of the time) but increase substantially to its peak at 39.80% in bad time of 1997-98. In good time it could be as low as 9.77% at its trough in 2006.

Table 6.6 summarises UE growth and size in accumulative of 5-year index average. UE increased from a range between 10.55% and 11.10% (1980-84) to its peak in a range between 18.10% and 26.94% (1995-99). Its size in the 1997-98 economic crises, was between; 14.43% and 23.43%; 25.61% and 34.61%; and 18.22% and 39.87%, per annum for low, moderate and upper series respectively. However, its size has reduced to a range between 8.92% and 15.40% in 2005-2009 periods.

In summary, estimates of Model A to E based on non compliance with rules lie between a third and a half of GDP size. Time series estimate of Model A indicate that it fluctuates between 11.10% and 26.94% (5-year time period). These estimates are not too far different from OECD estimate at 33%, using cash transaction method as tabulated in Table 3.1.

Fluctuation with economic status reflects the role of economic constrain, such that during an economic downturn (recession phase) where the GDP growth declines, the "missing" official economy is gradually displaced by the UE. UE as the thriving economy fills in the economic gap thereby increasing its share of the potential economy. When the country recedes from a sluggish economy, people leave UE and shifts to the improved official economy.

Table 6-7: Size of UE in recession years

Recession years	UE growth (%)	UE size (% of GDP)		
		UE low	UE moderate	UE upper bound
1988-89	30.1- 43.61	10.87 – 14.84	11.76 – 17.99	11.76 – 17.99
1998-99	23.99 - 39.80	20.06 – 23.43	31.51 – 34.61	37.95 – 39.88
2003-04	-1.93 – 51.35	10.19 – 14.47	17.34 – 19.65	18.22 – 22.95
2008-09	-4.69 – 9.28	8.37 – 9.02	13.63 – 14.99	15.06 – 16.00

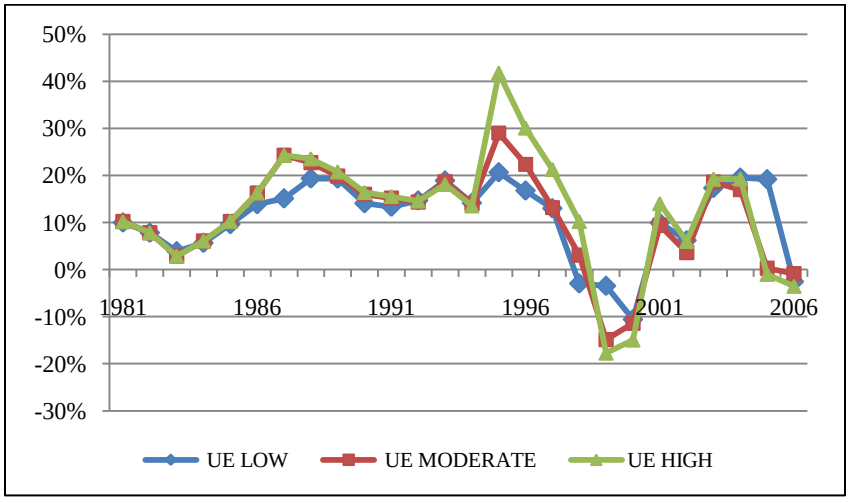

Figure 6-2: Growth of UE in 5 year moving average

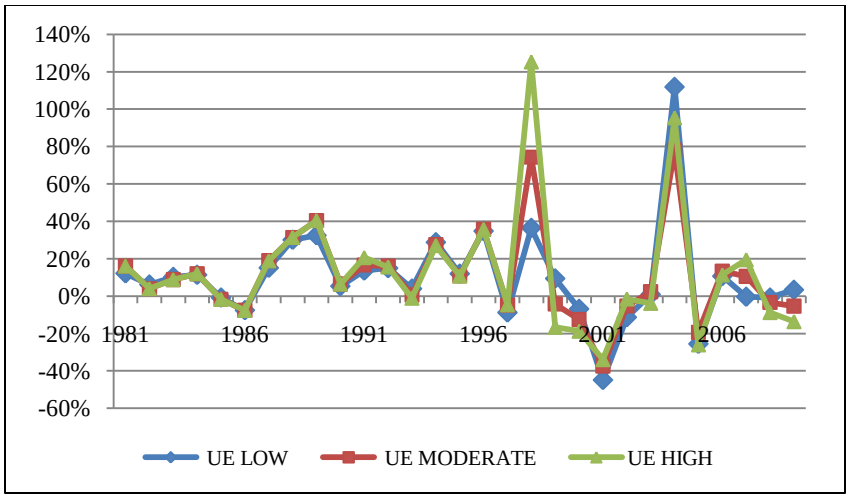

Figure 6-3: Annual growth of UE

6.6 Growth in time series relative to GDP

Table 6.6 summarises the average of 5-year UE growth and Figure 6.2 illustrates its fluctuations. It increased from about 7.99% (1980-84) to its peak 20.57% (1995-99) but gradually reduced to 0.6% and 0.27% in the first and second half of the 2000s respectively.

Table 6.7 summarises UE annual growth and Figure 6.3 illustrates its fluctuations. It increased from 32.50% to 40.40%; 36.46% to 125.18%; and 77.98% to 111.92%, in the recession years of 1989, 1998 and 2004 respectively. Its peak was in the year 1997-98, within a range of 25% to 40%, which is much higher than the growth in other recession years, within a range of 15% to 25%.

The UE growth in the second half of 1980s and 1990 decade was in an upward trend that increased from 12.86% to 20.57%, until 2000 where growth direction is in the opposite. The UE growth exhibited a downward trend from 0.60% in 2000 - 04 to 0.27% in 2005-09. The UE growth was fastest in the second half of 1990s and reach to its peak at 39.80% of GDP in the 1998-99 crises.

The decreasing growth and size relative to GDP is a good sign but its increase in absolute term from MYR 137,867 – MYR259,506 million in 1990 decade to MYR 279,574 – MYR567,646 million in 2000 decade implies a substantial potential tax loss.

Figure 4.3 and Figure 6.4 illustrate the growth of official economy. In bad time, the GDP real growth reduced to; 4.70% in 1989, (-7.36%) in 1998 and 4.00% in 2004, while GDP nominal reduced to; 5.23% in 1989, 0.51% in 1998 and 6.55% in 2004.

The opposite UE growth to GDP that increase up to three times in the "recession years" of 1989, 1998 and 2004 (recession years) compared to "normal years" implies that UE is a transition economy in bad time to substitute for the missing official economy.

The opposite UE and GDP growth direction is consistent with the findings of Tanzi (1983) and Giles (1999) which employ the electricity and currency demand methods. This supports the consensus views on the presence of a second economy; that complements the official economy in bad time. A downward trend of growth to 0.27% and size to 15.4% of GDP implies the size of UE that escape taxes is also declining.

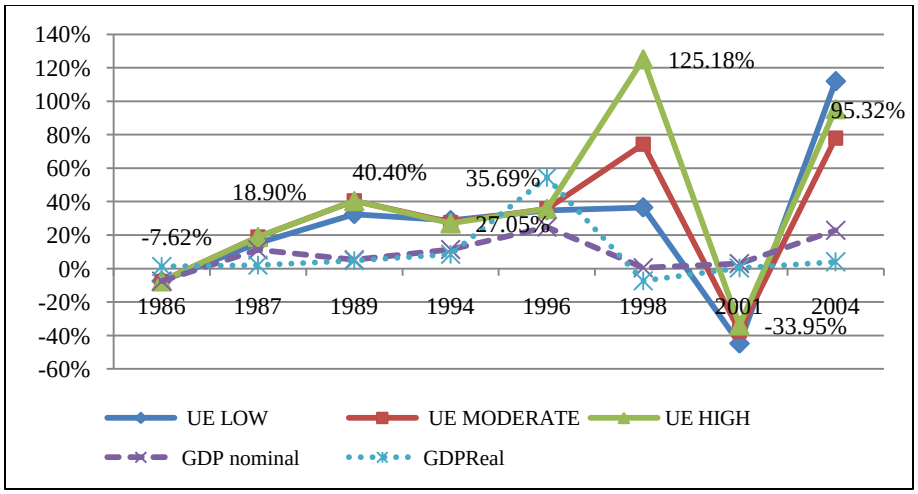

Figure 6.4: Annual growth of UE relative to GDP real and GDP nominal

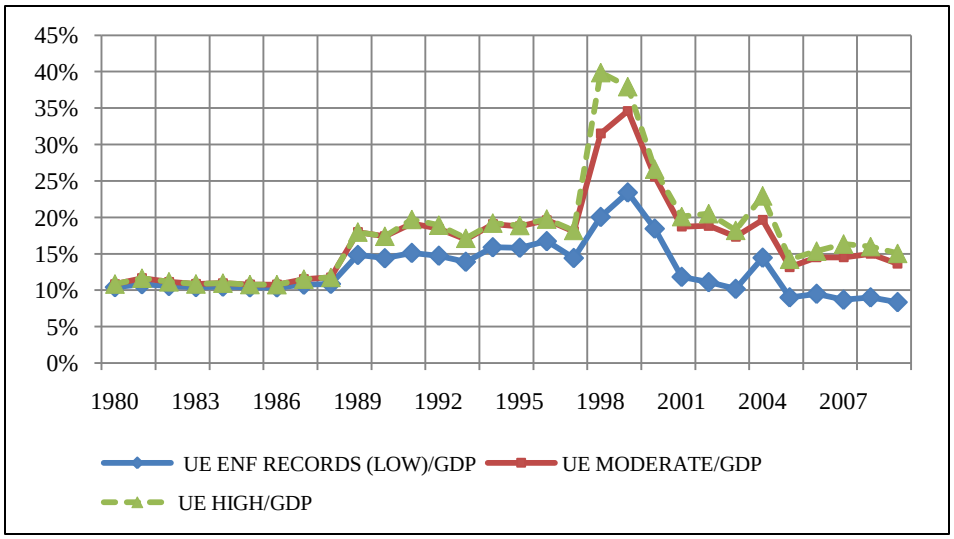

Figure 6-5: Annual UE size in three level range time series relative to GDP

6.7 Components of UE - illegal economy and irregular economy

The increasing illegal economy (unreported income of illicit activities) and irregular economy in absolute term (unreported income of legal activities) over the period of 1980-2009, as discussed in paragraph 4.6 of Chapter Four is further examined here.

Figures 6.7 & 6.8 illustrate UE growth in components of irregular economy (direct and indirect tax non compliance). The irregular economy consists of legal activities but illegitimate due to non compliance with tax rules. Its proportion mix are; 50.23% (1998) and 64.63% (2006) of direct tax non compliance; and 7.15% (1998) and 21.83% (2006) of indirect tax non compliance. Figure 6.6 illustrates the proportion of illegal economy that fluctuates between its highest portion at 42.62% (1998) and lowest portion at 13.54% (2006).

Table 6.8 summarises the growth of UE in total and by its economic components (illegal and irregular economy) that climbed to its peak in the 1995-99 periods (at 39.80% of GDP size) and exhibited a downward trend in the post 1997-98 crises. The proportion of irregular economy fluctuates between 86.46% (2006) and 57.38% (1998) and illegal economy fluctuates oppositely between 13.54% (2006) and 42.62% (1998). In normal time, the proportion of irregular economy and illegal economy hover around 80% and 20% respectively.

The change in the proportion of illegal and irregular economy over time implies UE mix changes with economic status. During an economic downturn (1998), the proportion of illegal economy can be as large as 42.62% and irregular economy can be as small as 57.38%. But in good time (2006) UE constitutes only 13.54% of illegal economy and 86.46% of irregular economy.

In normal time, irregular economy grew faster (between 3.91% and 14.12%) than illegal economy (between 0.03% and 0.47%). But during an economic downturn, illegal economy increases about 10 times larger than in good time to a size that

constitute about 42.62% of UE. This portion is about 16.96% of GDP size (42.62/100 x 39.80%).

The UE proportion mix suggests that the irregular economy for Malaysia is about; 4 times larger than the illegal economy in normal time; 6 times larger than the illegal economy in good time; but only 1.5 times larger than the illegal economy in bad time. Fluctuation of Malaysian UE mix estimate is an added knowledge to literature. The general estimate of the size of "legal black economy" is about 3 to 4 times larger than illegal economy. The composition of UE in Malaysia could represent an estimate of a "developing country", such that the irregular economy is between 1.5 and 6 times larger than the illegal economy, smaller in bad time.

The larger proportion of illegal economy in recession years is consistent with UE theory such that people who are unemployed would participate in UE activities ranging from informal job to committing commercial crime for survival. Displacement of direct tax revenue over indirect tax revenue signifies creation of opportunities of UE, implying more income not reported to tax authority, an erosion of tax base.

Indeed, the irregular economy has undergone a gradual shift of tax non compliant mix. Direct tax non compliant reduced in about 50%, while indirect tax non compliant increased in about 33% (Figures 6.7 and 6.8). The proportion of direct tax non compliance in 1989 was at 85%, which decrease and hovers around 50% to 70% over 1990-2009. Indirect tax non compliance in 1989 instead was at 15% which increase and hovers around 30% to 50% over 1990-2009.

Apart of tax revenue mix effect, irregular economy mix also associates with tax reform. A lower direct tax burden reform associates with a lower tax non compliance. A higher direct tax burden prior to 1990s' implies a higher incentive of unreported income as it is more profitable than in a lower direct tax burden in the post 1990s'. This suggests that there is empirical evidence of reduced UE growth associating with a lower tax burden reform. Hence, government policy towards a lower tax burden reform could promote economic growth as well as suppress the growth of UE.

On the other hand, to support policy measures on the consumption of certain services or goods, indirect tax was instead reformed towards a higher burden. For instance, to encourage consumption of local product and to discourage consumption of health hazard goods, and to reduce social problems, additional tax is introduced and tax rate is increased. However, indirect tax burden coupled with other rigid regulations seems not adequate to suppress demand, instead have encouraged people to consumed smuggled goods. This implies that a rigid policy if not countered by efficient and effective law enforcement would lead to policy failure and revenue loss.

This phenomenon is consistent with the experience of some other countries where increase of tax rates and tariff on imports of traded goods induced smuggling activities, (Morgensen et.al 1995 and Farnazegan 2008).

The change of irregular economy mix is consistent with the findings of Giles & Tedds (2002) and Giles (1999) who explained the shift as due to the effect of change in tax revenue mix structure (direct over indirect taxes).

The shift of tax non compliant mix or irregular mix is consistent with "lower direct tax burden reform" and to a "higher indirect tax burden reform". The results conform to the economic theory on the determinant of UE such that tax burden is an incentive of UE of tax evasion. Even though irregular economy mix associate with lower tax burden, in absolute term, UE continuously increase implying that a further reduction of direct tax burden would not likely to suppress UE much more. Intuitively, it is also unwise to further reduce tax burden (tax rate and more tax deduction) as taxes are important fiscal and social policy instrument. Taxes must be weighed against the benefits of the public goods and services which are financed by taxes. This is consistent with the argument made by Schneider (2000) on Australian 1988-89 data, who pointed out that UE did not subside significantly despite the reduction of the marginal tax rates and a general simplification of the tax system.

As the economy is very complex, taxes are not the only factors that influence UE. From a rational view, "tax effects" could have been compounded by other economic variables, yet to be discussed in Chapter 7.

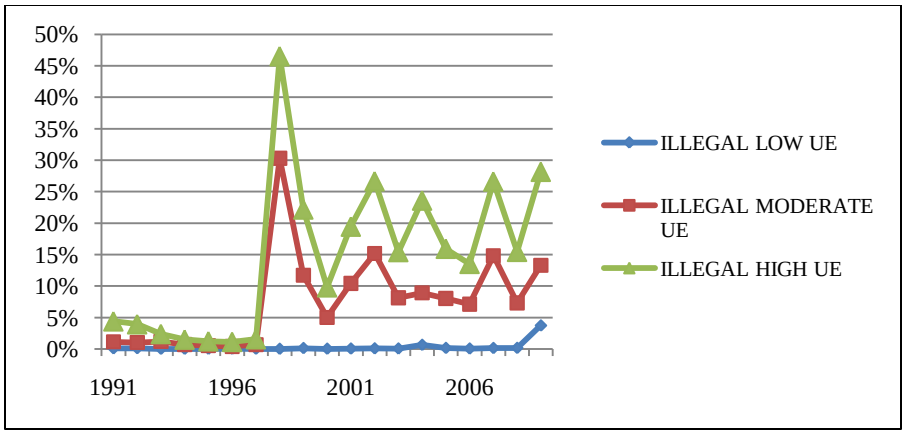

Figure 6-6: UE in annual proportion of illegal economy

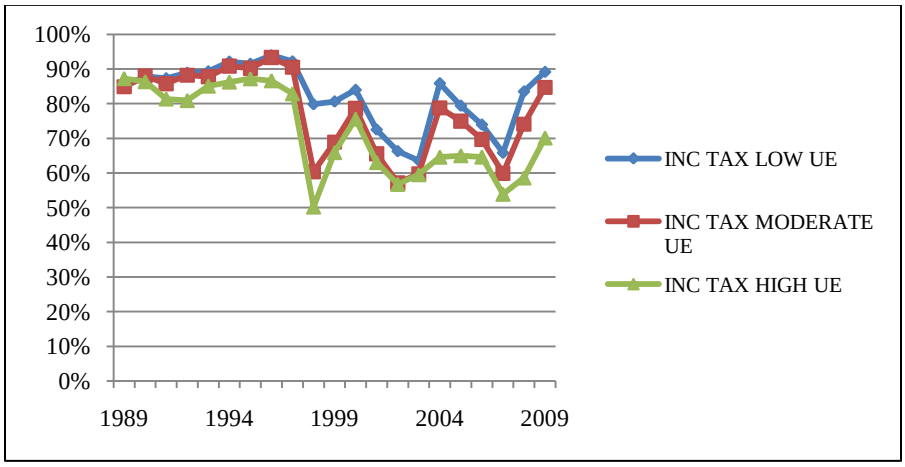

Figure 6-7: UE in annual proportion of direct tax non compliance

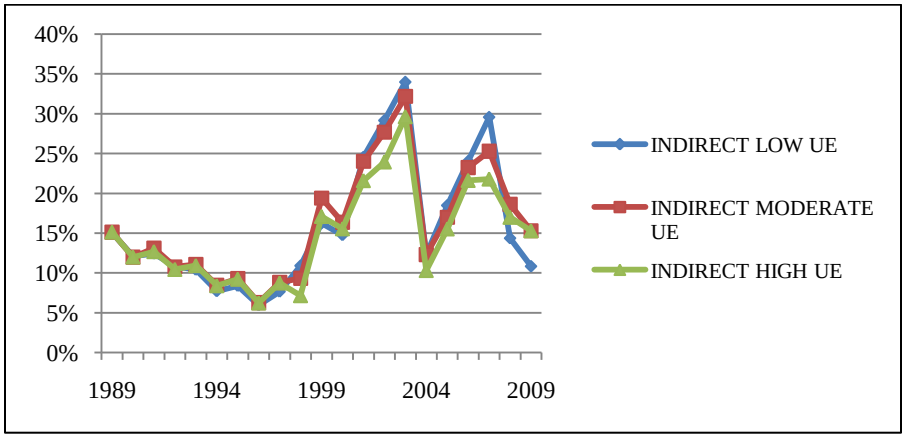

Figure 6-8: UE in annual proportion of indirect tax non compliance

6.8 Components of UE - non compliant activities (illicit and legal)

The components of UE are further analysed by non compliance with tax law and criminal law. The former is with regards to legal activities and the latter relates to illicit activities. Figures 6.6 to 6.8 illustrate the proportions of these components. The legal activities consist of activities of non compliance with direct tax law or indirect tax law and illicit activities consist of activities of non compliance with criminal law. The proportion of these non compliant activities are in the range of; 50.23% (1998) to 75.59% (2000) for direct tax non compliance; 7.15% (1998) to 29.61% (2003) for indirect tax; and 9.81% (2000) to 45.62% (1998) for illicit activities. Based on an average of 5 year period, direct tax non compliance, indirect tax non compliance and illicit activities hover around 60%, 20% and 20% respectively.

Table 6.8 summarises the growth of UE components. Growths of non compliance with tax rules were relatively high in the recession years of 1985-89 and 1995-99 at 14.82% and 18.10% respectively. Both irregular economy and illegal economy peaked in the 1995-99 and exhibited a downward trend in 2000 decade to 9.87% in 2005-2009. Growth by non compliance with rules related to direct tax, indirect tax and illicit activities had reduced to 5.74%, 3.91% and 0.22% respectively. The highest growth component was direct tax non compliance, at 14.16%, followed by indirect tax non compliance at 3.52% and illicit activities at 0.47%. Both direct tax non compliant activities and illicit activities exhibited a downward trend in the 2000 decade. At average of five year period, the growth of direct tax non compliance reduced to 7.86% and 5.74%, followed by illicit activities reduced to

0.23% and 0.22%. Indirect tax non compliance instead increased between 3.91% and 5.13% in the 2000 decade.

Table 6-8: UE growth by non compliant activities

5-year time period	Underground economy (UE)			
	Irregular economy		Illegal economy	
	Direct tax	Indirect tax	Criminal	Total
1980-84	10.5477%	0.0000%	0.0000%	10.5477%
1985-89	10.8066%	0.6414%	0.0000%	11.4480%
1990-94	12.2686%	2.5110%	0.0331%	14.8127%
1995-99	14.1169%	3.5158%	0.4659%	18.0986%
2000-04	7.8526%	5.1281%	0.2317%	13.2124%
2005-09	5.7422%	3.9106%	0.2186%	9.8713%

6.8.1 Illicit activities

For comparison, the components of non compliant activities were analysed in a shorter period (1995-2009) because data for illicit activities other than drugs and bribery were only available then. Table 6.9 summarises the illicit activities mix in average proportion that consist of bribery (3%), drug trafficking (19%), and "other commercial crime" (78%). The latter consists of activities of gambling, betting, piracies, cyber crime, multimedia crime, ATM crime, forgeries, frauds and breach of trusts/swindles/cheatings.

Table 6.9: Components of illicit activities - average

5-year time period	Bribery	Drug trafficking	Other commercial crime*	Total
1995-99	4.04%	42.86%	53.10%	100.00%
2000-04	2.98%	4.76%	92.26%	100.00%
2005-09	1.60%	8.82%	89.58%	100.00%
Average	**3%**	**19%**	**78%**	

*Breach of trust/ swindle/cheating offence constitute 75% of the commercial crime

Table 6.1 summarises the illicit activities mix in range estimates, that consists of 1.60% and 4.40% of bribery; 4.76% and 42.86% of drug trafficking; and 53.1% and 92.96% of "other commercial crime". Activities of "breach of trust/ swindles/ cheating" constitute the largest illegal income. Its proportion is between 53.1% and 92.26% both in normal time and bad time (1995-99) followed by drug trafficking (ranging from 4.76% to 42.86%) and bribery cases (1.60% - 4.40%). The consistent illicit income mix in good and bad time suggests that the income of illicit activities of "breach of trust/ swindles/ cheating" is the major commercial crime, regardless of economic performance.

Table 6.10: Components of illicit activities – range size

%	Minimum range	1997-98 crises	Maximum range	5 year moving average
Bribery	0.01(1998)	0.76-2.18	5.49-10.50 (2004)	1.60-4.40
Drug offence	3.73-3.76 (1998)	15.43-16.57	21.19-22.77 (2009)	4.76-42.86
Other commercial crime*	42.10-85.27 (2004)	75.84-81.45	94.19-96.78 (2002)	53.1-92.96

*About 95% due from breach of trust and swindle or cheating

6.8.2 Indirect tax non compliance – indirect tax gap

Table 6.11 summarises the proportion of components of UE of indirect tax non compliance. They are tax evasion (smuggling of goods) and unpaid taxes (failure to remit other indirect taxes). The proportion of smuggling activities fluctuates between 54.88% and 75.06% for lower series while for upper series it fluctuates between 70.62% and 86.10%. Its lowest proportion was in the first half of 1990 decade (between 54.58% and 70.62%) and highest proportion was in the first half

of 2000 decade (between 75.06% and 86.10%). On average the proportion of tax evasion on smuggling activities is between 67.28% and 80.15%.

The proportion of unpaid indirect taxes fluctuates between 24.40% and 45.42% for lower series while for upper series it fluctuates between .13.90% and 29.38%. Its highest proportion was in the first half of 1990 decade (between 29.38% and 45.42%) and lowest proportion was in the first half of 2000 decade (between 13.90% and 24.40%). On average the proportion of unpaid taxes is between 19.85% and 32.72%.

In addition to a larger proportion of tax evasion due to smuggling activities (twice the proportion of unpaid of other indirect taxes), its upward trend signifies an alarming sign.

Table 6-11: Components of indirect tax non compliance

5 year time period	UE in low series		UE in upper series	
	Tax evasion (unreported income)	Unpaid tax	Tax evasion (unreported income)	Unpaid tax
1990-94	54.58%	45.42%	70.62%	29.38%
1995-99	72.75%	27.25%	84.23%	15.77%
2000-04	75.60%	24.40%	86.10%	13.90%
2005-09	66.17%	33.83%	79.64%	20.36%
Average	**67.28%**	**32.72%**	**80.15%**	**19.85%**

Note: Estimate series based on enforcement success rate. Average: 62% tax evasion and 38% tax unpaid

6.8.3 Direct tax non compliance – direct tax gap

Table 6.12 and 6.13 summarise the proportion of components of UE of direct tax non compliance. They are tax evasion (omission of taxable income of tax payers within existing tax base [tax forms filed] and taxpayers who are yet to be captured into the tax base [tax forms not filed]) and unpaid taxes (failure to pay reported taxes). It is based on the assumption that by nature the income derived from indirect tax non compliance and illicit commercial activities are not likely reported to direct tax authority

UE of direct taxes were analysed in two scenarios of unreported income of people who do not file tax form. Table 6.12 summarises a scenario that considers unreported income of illicit activities assuming it is the income of people who do not file tax form to avoid detection. Table 6.13 summarises a scenario that extends the unreported income of people who do not file tax form to illicit activities and activities of non compliance with indirect tax law. This is based on the assumption that people who evade criminal law and indirect tax law would conceal income from these activities to avoid being traced and caught.

The component of UE of unpaid direct taxes fluctuates between 61.24% and 83.33% and 42.24% and 78.26% for upper series of the first and second scenario respectively. The component of UE of tax evasion of people who file tax form fluctuates between 15.18% and 34.77% and 15.79% and 21.78% for upper series of the first and second scenario respectively. The component of UE of tax evasion of people who do not file tax form fluctuates between 0.27% and 3.89% and 14.91% and 52.35% for upper series of the first and second scenario respectively.

The component mix of UE of unpaid direct taxes constitutes a larger portion than tax evasion but exhibit a downward trend to within a range of 42.24% - 61.24%. In contrast, proportion of tax evasion exhibit an upward trend to within a range of 21.78% - 34.87% for people who file tax form and 3.89%-52.35% for people who do not file tax form.

On average, tax gap mix in the first scenario constitutes 64% unpaid tax, 32% tax evasion of tax filers and 4% tax evasion of tax non filers. The average of tax gap mix in the second scenario constitutes 62.21% unpaid tax, 12.97% of tax filers and 24.83% of non tax filers.

On average, direct tax non compliance consists of about 60% unpaid tax and 40% tax evasion while indirect tax non compliance consists of about 30% unpaid tax and 70% tax evasion. The proportion of unpaid indirect tax is about half of the indirect tax evasion, while, the proportion of unpaid direct tax doubles the direct tax evasion.

It is clear that UE component mix of indirect and direct tax non compliance contradicts. The proportion of UE of direct taxes is larger for unpaid taxes than tax evasion while the proportion of indirect taxes is larger for tax evasion

The opposite tax non compliance mix suggests that the burden of taxes is to part payment. The burden of direct taxes is to part payment of tax liability whereas the burden of indirect taxes is to part payment of high price goods presumably the smuggled goods are often cheaper as overhead cost excludes taxes.

This argument is supported by higher and faster growth direct tax non compliance growth (between 5.74% and 14.12%) than the indirect tax (between 0.64% and

5.13%). Another reason to proportion difference is that people are more unlikely to share earned income to taxes in a compulsory manner than to pay for official goods which are paid upon used. Smuggled goods are also often not guaranteed and difficult to assess.

Table 6.12: Direct tax gap – first scenario

5 year time period	Tax evasion (tax form)	Unpaid tax	Tax evasion (no tax form)	Total
1980-84	16.67%	83.33%	0.00%	100.00%
1985-89	16.67%	83.33%	0.00%	100.00%
1990-94	16.43%	83.30%	0.27%	100.00%
1995-99	15.18%	81.58%	3.25%	100.00%
2000-04	26.98%	69.38%	3.64%	100.00%
2005-09	34.87%	61.24%	3.89%	100.00%

Table 6-13: Direct tax gap – second scenario

5 year period	Tax evasion (tax form)	Unpaid tax	Tax evasion (no tax form)	Total
1990-94	9.97% - 16.98%	68.11% - 78.26%	11.77% - 14.91%	100.00%
1995-99	12.05% -19.68%	58.50% -72.61%	15.35% -21.82%	100.00%
2000-04	11.92% -15.79%	37.22% - 55.71%	32.37% -46.99%	100.00%
2005-09	17.94% - 21.78%	25.69 – 42.24%	39.82% - 52.35%	100.00%

Although UE of direct tax non compliance constitutes a larger unpaid tax in both scenarios, its downward trend is an indication of improving tax collection system. Tax evasion on income of tax payers in the tax net, assuming income of legal activities, exhibited a gradual increase of captured activities by enforcement within a limited resources. However, a higher growth of tax evasion on income of tax payers outside the tax net exhibited an upward trend of potential tax loss (Figures 6.9 and 6.10).

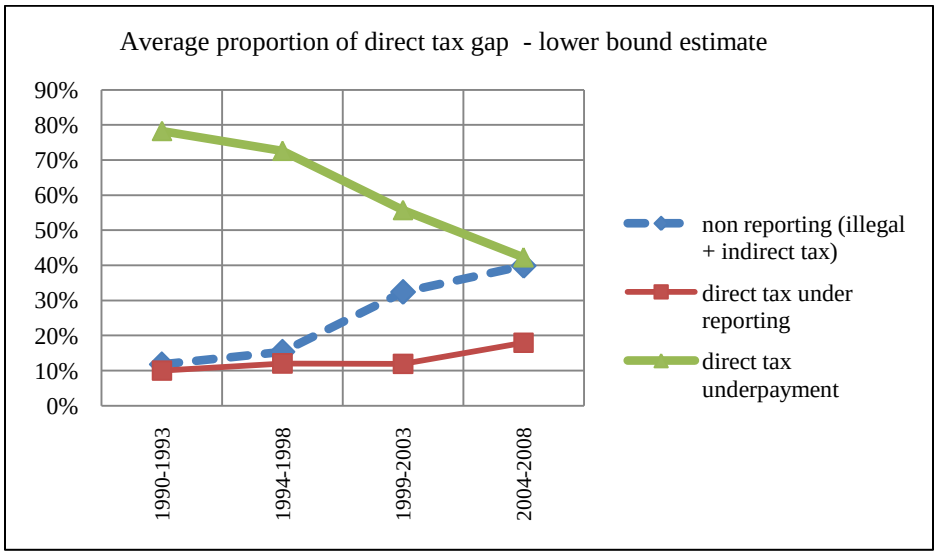

Figure 6.9: UE in lower series estimates - by direct tax gap mix

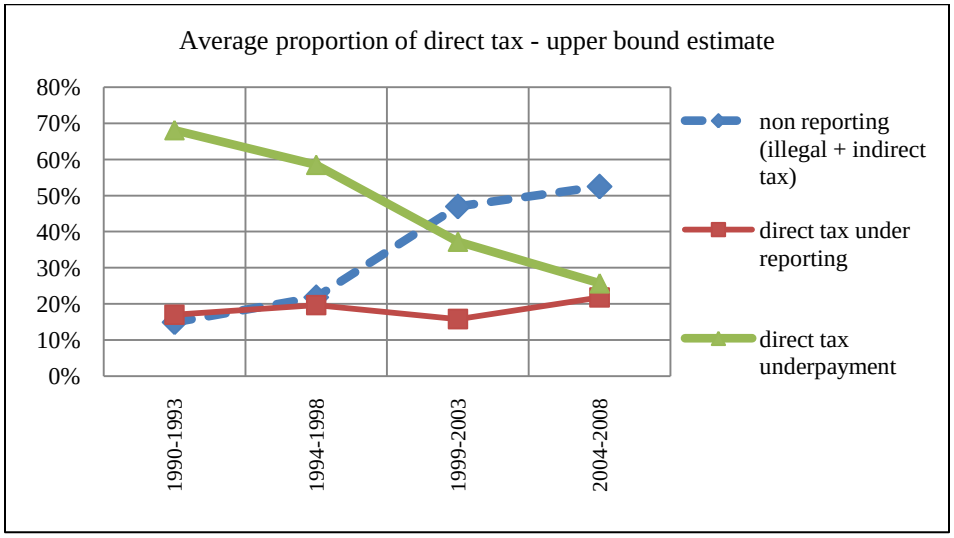

Figure 6.10: UE in upper series estimates – by direct tax gap mix

6.9 Direct tax loss

Direct tax loss is estimated based on the product of size UE (estimates in three level series) and tax rates (at three probable tax rates at 10%, 22% and 27%).

It is not possible to ascertain tax rate by the "aggregate of unreported income". So, the reason for employing three tax rates is to encounter for the effect of tax calculation in a progressive tax rates that differs across income level. Three different tax rates are employed to estimate a probable tax loss. The rates employed range from as low as 10% (effective tax rate based on the ratio of income assessed to tax) to 22% (average tax rate of tax evaders based on the average tax rate of audit cases) 27% (the marginal or maximum tax rate). A range of tax loss is obtained by multiplying UE in three level series estimates with; effective tax rate ($UE_{low, moderate, upper} \times 10\%$); average enforcement tax rate ($UE_{low, moderate, upper} \times 22\%$); and marginal progressive tax rate ($UE_{low, moderate, up} \times 27\%$).

The size of tax loss is then presented in relative to the components of federal account; tax revenue, federal revenue and federal deficit. To compare the extent of tax loss between prior and post 1997-98 economic crises, the size of tax loss is computed in two decade periods, (1990-1999 and 2000 -2009).

For the period 1990-1999, the size of direct tax loss was between; 6.61% and 33.68% of direct tax revenue; 2.85% and 14.49% of federal revenue and; 60.38% and 307.28% of federal deficit, (Table 6.14).

In absolute term, the amount of tax loss for 1990-1999 period was in the range of RM 13.79 to 25.99 billion (at 10%), RM 30.33 to 57.17 billion (at 22%) and RM37.22 to 70.16 billion (at 27%).

Table 6.14: Direct tax loss over a period of 1990-1999

Federal deficit: MYR 22,834 Federal revenue: MYR 484,317 Direct tax revenue: MYR 208,495 (million)	Size of UE series	Direct tax loss			
		Amount (MYR million)	Federal deficit*	Federal revenue	Direct tax revenue
10% (effective tax rate)	Low	13,787	60.38%	2.85%	6.61%
	Moderate	22,587	98.92%	4.66%	10.83%
	Upper	25,987	113.81%	5.37%	12.46%
22% (average tax rate)	Low	30,331	132.83%	6.26%	14.55%
	Moderate	49,692	217.62%	10.26%	23.83%
	Upper	57,171	250.37%	11.80%	27.42%
27% (marginal tax rate)	Low	37,224	163.02%	7.69%	17.85%
	Moderate	60,986	267.08%	12.59%	29.25%
	Upper	70,164	307.28%	14.49%	33.65%

*Higher % due to small federal deficit

For the period 2000-2009, the size of direct tax loss was between; 4.79% and 26.29% of direct tax revenue; 2.53% and 13.85% of federal revenue and; 6.18% and 33.88% of federal deficit, as summarized in Table 6.15.

The amount of tax loss for 2000-2009 period was in the range of RM 27.96 to 56.77 billion (at 10%), RM 61.51 to 124.88 billion (at 22%) and RM75.49 to 153.26 billion (at 27%).

The size range of tax loss relative to; direct tax revenue and federal revenue, between these two periods is about the same, but differ in relative to federal deficit. The difference is likely due to a faster UE growth and a lower federal deficit in the 1990-99 compared to 2000-2009.

*

Table 6.15: Direct tax loss over a period of 2000-2009

Federal deficit: MYR 452,397 Federal revenue: MYR 1,106,504 Direct tax revenue: MYR 583,070 (million):	Size of UE series	Direct tax loss			
		Amount (MYR million)	Federal deficit*	Federal revenue	Direct tax revenue
10% (effective tax rate)	Low	27,957	6.18%	2.53%	4.79%
	Moderate	51,191	11.32%	4.63%	8.78%
	Upper	56,765	12.55%	5.13%	9.74%
22% (average tax rate)	Low	61,506	13.60%	5.56%	10.55%
	Moderate	112,620	24.89%	10.18%	19.32%
	Upper	124,882	27.60%	11.29%	21.42%
27% (marginal tax rate)	Low	75,485	16.69%	6.82%	12.95%
	Moderate	138,216	30.55%	12.49%	23.70%
	Upper	153,264	33.88%	13.85%	26.29%

* *Lower % due to large federal deficit

The substantial amount of tax loss could erode federal revenue together with the increasing federal expenditure as discussed in paragraph 4.4 of Chapter 4 explains for the long run federal deficit in the 2000 decade (the post 1997-98 crises).

A common consequence of a prolonged federal deficit is deprivation of citizen's benefit which are incentives for a further UE. This vicious circle phenomenon would incline further evasion.

When federal account is under deficit, government would either increase federal revenue or reduce federal expenditure. Fiscal policy measures often include taxes (e.g increase tax rates, impose new taxes, widening the tax base, reduce tax deductions and limit tax incentives and withdrawing subsidies on goods and services. Others turn to taking loans or sales of bonds

6.10 Indirect tax loss

Different goods have different tax rates that range from fire crackers, cigarettes, liquor, textiles, discs, electrical goods to vehicles. The tax rate of these goods is between a range of 10% and 300%. Hence the amount of indirect tax loss would not only depend on value of goods smuggled but also the extreme differences in tax rate. To facilitate extrapolation, indirect tax loss is obtained by dividing the aggregate worth value of items captured by amount of tax raised of the entire smuggled enforcement data. The average tax rate is at 97.28%. Estimate of indirect tax loss is based on the product of 97.28% and UE estimate as inferred by indirect tax non compliance ratio.

Table 6.16 summarises the estimates of indirect tax loss. In absolute term, the amount of tax loss in the 2000 decade is between MYR 138,090 and 276,181 million.

Table 6-16: Indirect tax gap

MYR million	Value of commodity tax		Amount of indirect tax loss at average tax rate of 97.28%		Indirect tax revenue	Indirect tax gap %
	Size of UE					
	Low	Upper	Low	Upper		
1990-94	9,942	19,885	9,838	19,676	68,948	28.54
1995-99	35,665	71,329	35,290	70,580	97,008	72.56
2000-04	70,284	140,569	69,546	139,093	106,130	131
2005-09	69,271	138,542	68,544	137,088	140,768	97.48
Total	185,163	370,325	183,218	366,437		

Table 6.17 summarises the estimates in relative to federal account. The size of indirect tax loss is between 55.93% and 111.86% of indirect tax revenue (or indirect tax gap); 12.48% and 24.96% of federal revenue; or 30.52% and 61.05% of federal deficit.

Table 6.17: Indirect tax loss relative to federal account - (2000-2009

Federal deficit: RM 452,397 Federal revenue: RM 1,106,504 Indirect tax revenue: RM 246,898 (RM million):	Size of UE series	Indirect tax loss as a % of			
		Amount (RM)	Federal deficit	Federal revenue	Indirect tax revenue
97.28% (average tax rate)	Low	138,090	30.52%	12.48%	55.93%
	Upper	276,182	61.05%	24.96%	111.86%

6.11 Black wealth

The value of property seized by drug law enforcement is used to infer the size of black wealth. Over the period of 1991-2009, out of a total of 28,207 of drug cases, the value of assets seized worth of MYR 435,126,849. Based on drug investigation records, about 14.02% of assets seized were stripped and charged as black wealth. The remaining of about 14.68% was withdrawn and 71.30% pending for the decision of court.

Assuming that number of cases and amount associate proportionately, the finalised ratio of 14.02% (charged) : 14.68% (not charged), implies that about half of the assets seized would be stripped and charges as black wealth. Therefore, the total black wealth from drug operation over the 30 year period is about

MYR435,126,849/2 = MYR217,013,425. This approximate MYR200 million of black wealth is only a conservative estimate because the assets seized (property, cash and savings) excludes assets held under proxies (highly likely to avoid being traced) or assets that are charged under other law. On the other hand, it may also include wealth of income earned legally.

This support the contention that income of UE boost wealth and consumption, which may redeployed into the official economy or spent on luxury items. The spendthrift consumerist culture is often said as an indicator of a flourishing UE.

Summary

The size of UE based on; proportion of non filing of income tax forms; proportion of unreported income; correlation coefficient between unreported and reported income and tax non compliance ratio of income of legal and illicit activities, generate estimates in a range between 20% and 50% in normal time. Over 1980-2009, based on income of legal and illegal activities, UE that escape taxes fluctuates between 8.69% and 26.94% of GDP size over, low in good time and high in bad time.

UE growth is in the opposite direction of GDP growth that differs largely during recession and booming years. This complementary association implies that UE is a transitional economy to stabilize an economic downturn, and subsides as the official economy recovers.

In terms of economic components, UE consists of 80% of irregular economy and 20% of illegal economy. In bad time the proportion of illegal economy could be

as large as 40% displacing the irregular economy to 60%. UE composition mix suggests that the irregular economy is larger than the illegal economy in about 6 folds, 4 folds and 1.5 folds in good, normal and bad time respectively.

With regards to non-compliance activities, tax non compliance mix is positively influenced by tax revenue mix and tax reform. Proportion of direct tax non compliance is larger with larger proportion of direct tax revenue. This supports the contention of direct taxes are incentives of UE. Over 1970-2009, about 50% of direct tax gap has been displaced by indirect tax gap that increased in about 33%. The gradual displacement that began in the 1990 is partly due to a lower direct tax burden and higher indirect tax burden reform. As direct tax gap remains a larger portion of irregular economy (66%) compared to indirect tax non compliance (about 44%), lowering of direct tax burden would not reduce UE much further.

As for illegal economy, income of illicit activities is largely on breach of trust/ swindle/cheating constitute the most (78%) followed by drug offences (19%) and bribery (3%) respectively. The wealth seized from drug traffickers is an evidence of black money. Tax gap mix exhibited a downward trend of unpaid tax but an upward trend of tax evasion, implying a rising potential tax loss. A substantial direct tax loss of about 13.85% and 24.96% of indirect tax loss of federal revenue is of no doubt a sizeable budgetary implication.