

Bank Negara Report 2007: A Layman's Guide to Numbers about the Economy (Part 2)

May 2008
Volume 10, Issue 5

PP14554/4/2009



In This Issue

Bank Negara Report 2007: A Layman's Guide to Numbers about the Economy (Part 2)	1
New Strategies Towards Integrated Solid Waste Management in Penang	7
International Headlines	16

Socio-economic & Environmental Research Institute

10 Brown Road,
10350 Penang, Malaysia
Phone: 604-2283306
Fax: 604-2267042
Email: seripg@tm.net.my
Website: <http://www.seril.com.my>

Monetary and fiscal policy

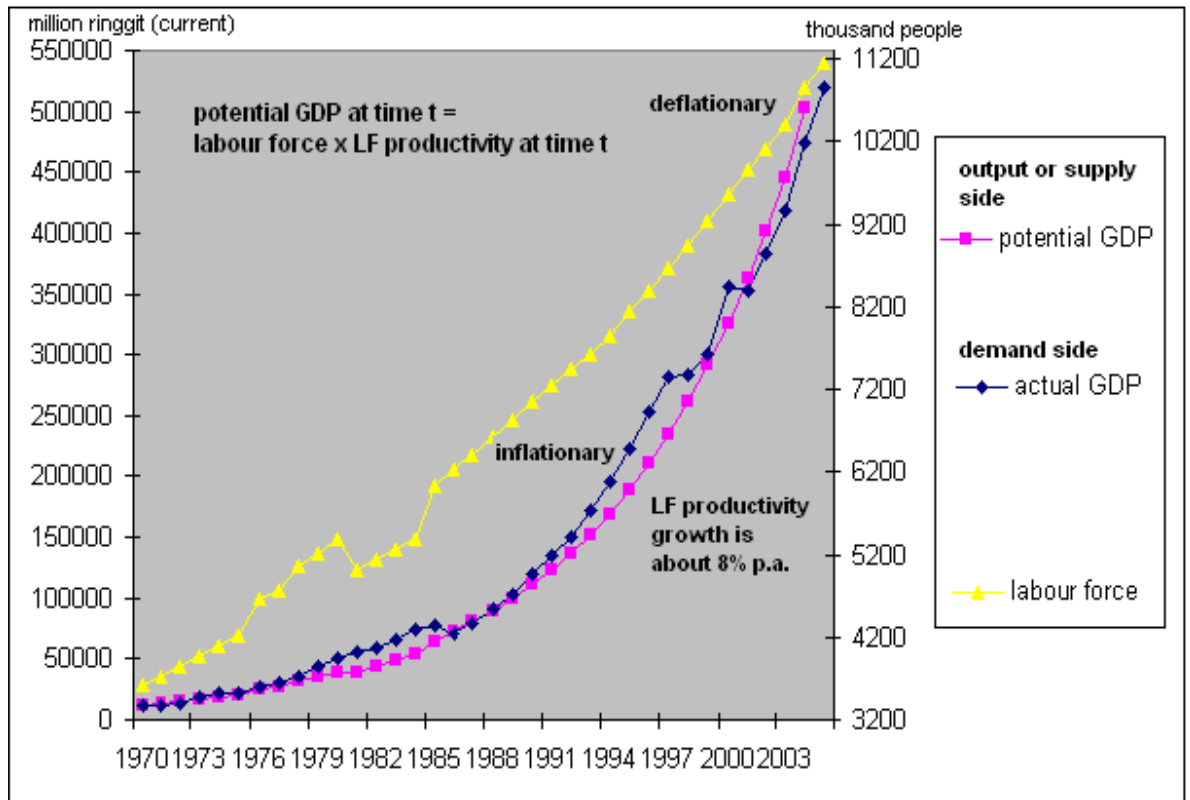
We now know from Figure 1 (in Part 1 of the article), how much money has flowed in the course of 2007 across the five components: flows within Malaysia's economy as well as flows to and from abroad. We also have a clearer picture how the various amounts of money form part of the overall national income of RM627.8 billion. One often debated point is to what extent the economy should be left to spin according to its own momentum, whether fast or slow, and if the government should intervene to moderate this speed.

The point of contention is the dual role of households (as well as the other components) functioning as both producers and consumers. When they are producers, their output is steady, and is theoretically dependent on how many people are working and how much output each person can produce in the year. Here, economists estimate the potential gross domestic product which is a function of population and productivity. The actual GDP that is officially reported is, on the other hand, based on the expenditure side, that is when households (and the other components) become consumers and investors. Here, the path is no longer steady, because issues like business and market confidence, local and foreign circumstance – what is usually referred to as sentiments begin to affect the decisions made. The result is observed as business cycles and when this is plotted over the potential GDP estimates, a snake-like oscillating pattern can be observed (See Figure 2), the actual GDP sometimes higher and other times lower than the potential or projected GDP. The difference is either inflationary (when demand is higher than output) or recessionary (when demand underperforms relative to output).

If the economy is left to its own device, the economic peaks and troughs are usually self-correcting over time. The only thing is business cycles may be prolonged and departures between output and sentiments can have painful effects: people losing their jobs (during downturns) or inflationary prices making things unaffordable (during upturns). This is why the government, feeling for the people's plight, often elect to undertake what is often called *countercyclical* policies aimed at moving sentiment levels much closer to, if not coinciding with the potential GDP levels.

The two main instruments available to the government are *monetary* and *fiscal* policies. The goals are to simultaneously achieve *stability* and *growth* in the economy. One without the other is not useful because a stable economy that does not grow only means decreasing levels of welfare over time as the population increases but output remains at a standstill. An unstable but growing economy is also not good because it is unsustainable over the long term. A crash brings devastation as previous economic crises have shown.

Figure 2: Potential and actual GDP, Malaysia 1970-2010



Source: based on data from Bank Negara Monthly Statistics (Various Issues)

In Figure 1, the reservoir (if we leave out the rest of the world for the time being) of money that can bear on both stability and growth is depicted by the capital market box. When this box is flushed with money, there is a lot of potential energy in the spinning wheel, as if by opening a valve the money is let loose and the economy spins very quickly. People may then say there is too much liquidity. Interest rate falls, people can borrow easily, the economy is upbeat and sentiments are high – all the makings of a booming but potentially inflationary economy. At other times, the capital market box appears to have insufficient funds such that even when the valve is fully open, not much money flows out from the capital box into the conduits. Interest rate goes up, borrowings become difficult, the economy becomes lackluster and signs of recession are looming.

Monetary policy is the government's influence on this box. Potentially, Bank Negara can print money to fill this capital market box when there are insufficient funds. It can also take money out of the box and destroy the money just as easily as how it was printed if the decision is to reduce liquidity during a *mopping-up* exercise. Doing either would effect changes in the liquidity levels of the capital market, influencing interest rates which in turn affect market sentiments that define how upbeat the economy will be. It does take quite a long time for modified liquidity levels in the capital box to bear upon flows along the conduits, an effect that can influence the behaviour of the various components so that the economy goes up or down. Thus government, despite knowing what to do, is often uncertain as to the (time) duration and the extent that countercyclical policies should be implemented. Thus, in practice, the monetary policy is seldom as effective as the theoretical model explained in textbooks.

Printing money, however, is not a straightforward solution, because anything that happens there will affect the standing of the local economy with the rest of the world. Changing interest rates at home relative to economies abroad, i.e. the *interest-rate parity*, will affect money moving in or out of the economy. This is why capital controls are often introduced since cross border money movements affect exchange rates, and volatile exchange rates affect trade in goods and services that in turn affect the economy. In other words, the monetary instruments are easy to implement but the side effects and further ramifications can have dire economic consequence.

The link between Malaysia's economy and the rest of the world is in its *Balance of Payments* numbers found in Table A.9 of the annex. The trade balance or exports less imports is RM129.1 billion, as discussed above for both goods and services. There was a net loss of *factor incomes* (wages, profits, interest and rent) abroad, which was also discussed, amounting to RM13.7 billion. What has not been discussed, however, are net *transfers* abroad amounting to a further RM16.1 billion. Transfers abroad are payments made that have nothing to do with the local economy, for example, when parents pay pocket money to their children studying abroad, or when Malaysians working and living abroad send money home to their parents in Malaysia. If we are to subtract these net payments abroad from the trade surplus, we get RM129.1 billion less RM13.7 billion less RM16.1 billion, which is RM99.3 billion. This is the *current account* that comprised 15.8% of the GNI in 2007.



According to textbook definitions, the *balance of payments* has to be zero. When the current account is in surplus, then this has to have an offsetting *capital account* deficit (money going out) to achieve a zero *balance of payments* between the current and capital accounts. The external accounts for Malaysia in 2007 may be summarized as shown in Table 2. The wrinkle in Bank Negara's 2007 report compared to previous years is there is now an entry of RM95 million outflows under the capital account. During past years there was no entry for the capital account, presumably because the entries for both the capital account and the financial account used to be lumped together.

The source of the confusion is the difference in definition for the term *capital account* used in IMF's national accounting literature and by economists in general. The broader definition used in economics is that financial accounts and capital accounts are one and the same thing, that is, net foreign direct investments (i.e., increase in foreign ownership of domestic assets less increase in domestic ownership of foreign assets) plus portfolio investments plus other investments. This is the definition used in previous Bank Negara reports. The IMF has since introduced the notion called *capital account* (which is different from the traditional economic definition) to capture data on international flows of transfer payments relating to capital items (fixed assets such as factories and machineries to and from abroad). What economists traditionally refer to as capital account is instead given the term *financial account* by the IMF and this is reflected in Table A.9 of the *Bank Negara Report* as well as in Table 2 below.⁵

What Table 2 is supposed to do is to show how goods and services flows achieve a balance of payment of zero against the corresponding capital (or financial) flows in Malaysia in 2007. From our system of national accounts, we know that the goods and services flow (i.e., current account) was RM99.3 billion. On the other hand, the corresponding capital (financial) flows going out of the country was RM37.1 billion. After adjusting for errors and omissions, the capital outflow was only RM54 billion – still far short of the RM99.3 billion by a difference of RM45.3 billion.

Looking further, the foreign reserves grew from US\$82.5 billion to US\$101.3 billion from 2006 to 2007. In ringgit terms this amount was RM29 billion and RM33.6 billion for 2006 and 2007 respectively.

⁵See *Balance of Payments Manual* 5th Edn., International Monetary Fund, Washington D.C., 1993.

Subtracting one from the other, we realize that the capital outflow from increasing the reserve level (since reserves cannot be kept in ringgit) was RM45.295. Therefore if we were to include money flowing out to increase Malaysia's foreign reserves (say when Bank Negara buys U.S. Treasury Bills) as part of the other capital flows out of the country in the capital and financial accounts, the required balance of payment of zero is achieved.

Table 2: Goods and Capital Flows (Balance of Payments) Malaysia 2007
(RM million)

A. CURRENT ACCOUNT		99336
B. CAPITAL ACCOUNT		-95
C. FINANCIAL ACCOUNT		
Outward direct Investment (from Malaysia)		-37874
Inward (FDI) investments		29082
Portfolio (shorter term) investments		18356
Other investments		-46600
Net capital Flows (B+C)		-37131
Errors and omissions (adjustments)		-16910
D. CAPITAL&FINANCE (B+C+adjustments)		-54041
E. OVERALL BALANCE (A+D) should be zero by definition		45295
F. FOREIGN RESERVES	2006	2007
Expressed in U.S. dollars	82451	101338
Ringgit equivalent	290399	335695
Months of retained imports	7.8	8.4
Capital outflow in 2007 in the form		
of increased reserves (RM335695 m. – RM 290399 m.)		-45296
G. OVERALL BALANCE OF PAYMENTS (E+F) zero as defined		0

What has all this discussion about cross border capital movements got to do with the central bank printing or destroying money in the capital box? To answer this question, it is better to use monetary policy implemented by China and by America as an example because they are huge economies that impact on the rest of the world. During the days when the Chinese *renminbi* was pegged to the U.S. dollar, China was running sizable trade surpluses against America. When the trade bill was paid, China became richer, relatively, and if no monetary policy action were taken, the *renminbi* would strengthen against the dollar.

This makes Chinese goods more expensive to Americans, which then acts as an automatic correction device to mitigate China's trade surplus with America. But because of the peg, there was no correction. Instead, excess funds flowing into China from the trade bill went into China's foreign reserves. Since reserves cannot be in the form of *renminbi*, China then decides to send the money back to America in return for U.S. treasury bills that become China's foreign reserves. Meanwhile in America, the monetary policy was to increase interest rates partly to reduce the consumption appetite of Americans for Chinese goods. However, because China is buying huge amounts of U.S. treasury bills, competition drives prices up while interest rates are driven down.⁶ This is why it has been said that monetary policy in America is not made by the U.S. Federal Reserve but instead by Beijing. Whenever China's monetary authority decides to buy U.S. treasury bills, the purchase ultimately affects American interest rates. It is for this reason that Beijing came under pressure to release the *renminbi* from the peg, which it did in July 2005.



Returning to Figure 1, fiscal policy, on the other hand, acts like a co-consumer alongside households to help keep business cycle effects less noticeable. When consumers find it hard to spend during downturns, government spending takes over. In worse case scenarios when national circumstance is bad, the government can get foreign financial assistance when individuals are not even credit worthy with their local banks. This keeps up confidence levels since business opportunities remain open by selling to government. Business continues to hire people and in turn household sentiments return to an upbeat level and the economy recovers. When consumers overspend, the government can squeeze the buoyant market a bit by imposing higher taxes (not necessarily income taxes but there are other forms of indirect taxes that can be prescribed to make spending more difficult).

Conclusions

Figure 1 explains how the economy works in its entirety and there is really nothing more to learn, except to examine specific parts of the system in greater detail, a feat that would probably need the time and resources of a lifetime. In fact, how the system works was not properly understood until John Maynard Keynes published his *General Theory of Employment, Interest and Money* in 1936.⁷ Had he done this, say a decade before, the Great Depression might have been avoided because in the absence of guidance, the policy makers then had actually acted to worsen rather than improve the initial onset of economic collapse. Twenty years later, Milton Friedman from the Chicago School began to gather statistics to prove his thesis that between the two, it is monetary and not fiscal policy that has efficacy on the economy. Friedman received a gathering of many followers to research on so-called *monetarism* and later won the Nobel Prize in 1976.⁸

The relationship between the workings of the local and foreign capital markets came within the interest domain of many scholars. For one thing, even if exchange is left free to float without meddling by the government, it is not really possible for each currency to have a rate link with every other currency because this would make the foreign exchange counter at the banks unmanageable. The world therefore tends to focus only on a few anchor currencies like the U.S. *Greenback* or the Japanese yen or the euro. Local capital markets are important because without one, large or long-term borrowing has to depend on overseas financing.

⁶Treasury bills are sold through tenders in the money market. If a treasury bill with face value of \$100 is bought for \$95 and kept for a year before redemption, then \$5 or 5% is earned. But if competition drives prices up to \$98, then earnings fall to \$2 or only 2% rate of interest.

⁷Palgrave-MacMillan, London, 2007 reprint.

⁸Although Keynes' theories have had as much, if not a greater impact on how we understand the workings of the economy compared to Friedman, Keynes never received a Nobel Prize for it.

Firstly, when this happens, the exchange rate at the time money was borrowed may differ from rates when loans are paid. Secondly, domestic rate of returns would have to be used to make repayments using foreign interest rates. Differences in rates between the local and foreign economies add up to risks that are generally hard to predict.⁹

While textbooks tell us why the economy should not be tweaked by meddling hands, Dooley, Folkerts-Landau and Garber suggested that the hands-off approach is not usually practical.¹⁰ Statistics over the past twenty years show that policy makers in trading economies have tended to keep exchange rates stable against an anchor currency, usually the U.S. dollar. They have this prerogative because they register a trade surplus and as a result build up their foreign exchange reserves over the years as Malaysia has been doing. By definition, foreign reserves have to be in foreign currency (since local currency can simply be printed by the central bank). The U.S. treasury-bill is a popular form of keeping foreign reserves and when large amounts are bought by trade surplus nations abroad including mammoth economies like China, prices go up and interest rates fall.

For countries where capital rather than trade is deemed to be more important, statistics over the past twenty years also show that these countries do not experience much change in their foreign reserves. These countries, however, experienced sizable swings in their exchange rates because the policy is to allow the exchange rates to float freely. The hypothesis is simple. Suppose the local economy does well, thus enabling its citizens to become rich, especially when they manage to sell in international markets. The currency thus appreciates relative to foreign currencies and accordingly, the asset-value of these citizens is similarly reflected when international purchases are made. This has not been the case in Malaysia between 1998 and 2005 when the ringgit was pegged. Malaysians were doing well relative to their counterparts abroad and trade surpluses were recorded. But the asset-value of Malaysians was in the pegged ringgit and as such, when they attempted to make international purchases the ringgit could only be exchanged at an artificially fixed RM3.80 to the U.S. dollar (or equivalently, only 26 U.S. cents for every ringgit). If a freely floated ringgit could fetch a price of only RM3.00 to the dollar, Malaysians could have received 33 American cents for every ringgit traded. This is why if the asset-values of citizens are to become meaningful in terms of the ability to buy and sell assets internationally, then a freely floating regime is essential.

The economy has thus to be looked at from both the inside and the outside. Our one-year look at the Malaysian economy from the inside does tell us that it is stable judging from the consumption and savings rate. However, because of the huge current account surplus of 15.8% of gross national income, it becomes necessary to also take a careful look at the outside circumstance, since this surplus must translate into outward capital flows to achieve a zero balance of payment. Of the RM99 billion worth of surplus, Malaysia, however, only registered a net outward investment of about half this amount, leaving the other half in the form of yet another annual increase in the country's foreign reserves. The difference is this: outward investment should yield better returns compared to foreign reserves. But outward investment would require management effort, technological know-how and risk taking. Going up the value chain by acquiring these factors is a highly recommended option, as this has often been mentioned as a necessary measure to promote the growth and development of Malaysia's business and industry. **§ Dr Chan Huan Chiang**

⁹See for instance, Barry Eichengreen and Richard Hausmann (199), "Exchange rate and financial stability" NBER working paper No.7418, Cambridge Mass. ; Ronal McKinnon and Gunther Schnabi (2004), "The return to soft-dollar pegging in East Asia" International Finance

¹⁰Michael P Dooley, David Folkers-Landau and Peter Garber (2003) *An essay on the revised Bretton Woods System*. National Bureau of Economic Research Working Paper Series 9971, Cambridge Mass

NEW STRATEGIES TOWARDS INTEGRATED SOLID WASTE MANAGEMENT IN PENANG

The search for a viable and sustainable Integrated Solid Waste Management System (ISWM) that provides an environmentally and socially acceptable option to the people of Penang has led the Federal Government to commission a study on Structuring and Institutionalising Solid Waste Management in Penang in 2006. After considering all alternatives open to ISWM, the study team concluded that the most viable option is one that comprises resource recovery (through the 3Rs), composting and land filling although other options like refuse derived fuel (RDF) and incineration may continue to be utilized.



The conclusion of this study is that Penang has the elements for building an alternative means to SWM, based on a recycling-composting strategy that incurs the least cost, and complies with the policies adopted by the government on cost and waste hierarchy. The strategy developed in this study also concurs with the State Government's choice of resource recovery and composting versus incineration earlier mooted by the Federal Government.

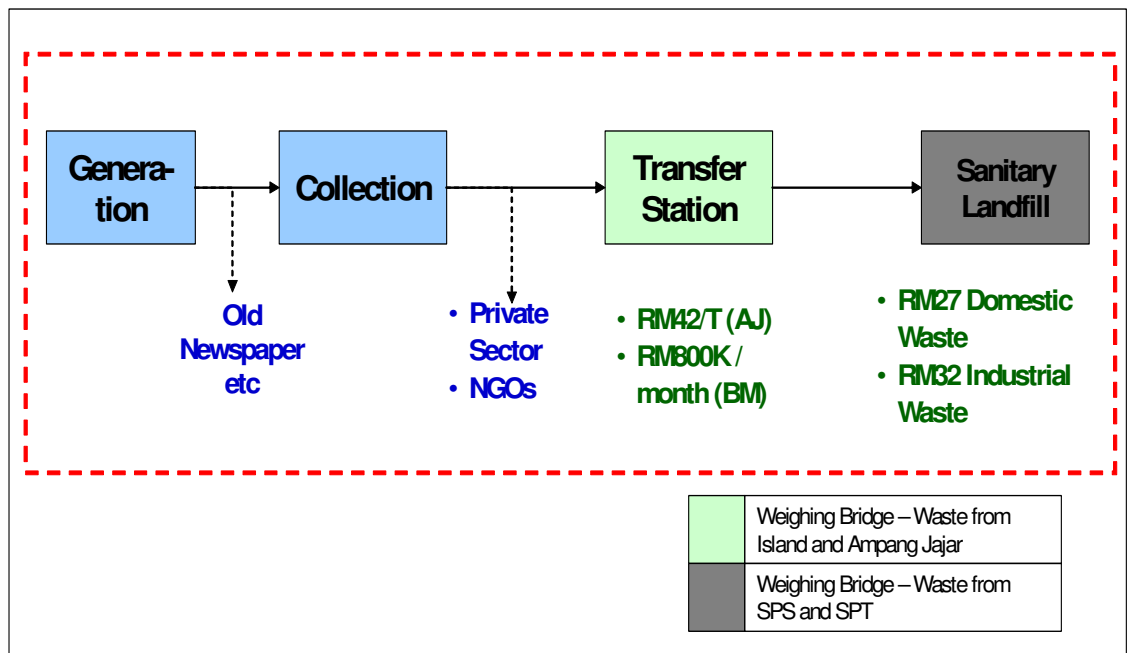
While the other states may not have a strong recycling network as that which is operating in Penang, it is important to note that the local and state governments have extremely important roles in terms of guiding and setting examples for the public to be involved in waste minimization and recycling.

In Penang, the situation seems different from the rest of the country. The recycling rates there are on the rise and this is attributed to the strength of its network of NGOs, communities, the private sector and local government, all actively participating and collaborating in recycling activities. This networking among the various stakeholders has been encouraged and developed since 2001 through the efforts of the Penang Environmental Working Group (PLGF) under the purview of the Penang Local Government Consultative Forum (PLGCF).

This article will discuss the present scenario of waste handling in Penang as well as the strong emphasis on resource recovery through the implementation of the 3Rs and a composting strategy in the State's waste management programme. This strategy will transform what was once considered as waste and discards into valuable resources that can be converted to cash.

The present mode of waste generation, collection, transfer and waste disposal is outlined in the chart below. Waste generated in Penang state is collected by both municipal councils through appointed contractors from the domestic, industrial, and commercial sectors and then transferred to the Pulau Burung Sanitary Landfill via transfer stations. The waste from Penang Island is loaded on to barges at the Batu Maung Waste Transfer Station before being shipped to Pulau Burung. The waste from the northern and central districts in Sebarang Perai is accumulated at the Ampang Jajar Waste Transfer Station before being transported by road to Pulau Burung.

The costs of waste collection, transfer and disposal are borne by the respective municipal councils. The UNDP study estimates this to be in the region of RM98 per tonne and RM129 per tonne of waste for MPPP and MPSP respectively. The long-term average cost is expected to rise to RM250 per tonne of waste.



Source: UNDP, 2007. *Institutionalising and Structuring SWM in Penang, Final Report*

Sources of Waste Generation

Table 3 shows that the residential areas are among the main sources of waste generation in Penang with 46% and 44% for MPPP (Penang Island Municipal Council) and MPSP (Seberang Perai Municipal Council) respectively.

It is also interesting to note that industrial waste is much higher in MPSP (40%) compared to MPPP. This is probably due to the different nature of the industries on Penang island compared to those in Seberang Perai.

The Jelutong Landfill on Penang island also recorded a much higher amount of Construction and Demolition (C&D) waste.

Table 3: Proportion of Waste by Source in Penang

	MPPP	MPSP
Residential	46%	44%
Commercial	11%	8%
Industry	6%	40%
Institutional	8%	7%
C&D	29%	1%
Tons/day	1,344	1,370

Source: SWM Model 060902, Structuring and Institutionalizing Solid Waste Management in Penang, 2007

Waste Composition

Figures from waste characterization studies estimate 33% to 50% of the composition of waste to be largely organic in nature (Table 4). The organic component also fluctuates throughout the year, increasing especially on festive days and during the fruit seasons. The removal of organic waste from the main waste stream is a sensible and appropriate approach to reduce the total amount of waste sent to the landfill, thereby prolonging the landfill's lifespan. The next logical step is to compost the organic waste and turn it into fertilizer. However, the quality of fertilizers produced will be greatly influenced by the amount of heavy metals present in the commingled waste.

Table 4: Composition of MSW, MPPP and MPSP, 2003

	MPSP		MPPP	
	Tonnes	%	Tonnes	%
Food	605.84	50%	206.23	33%
Yard & Garden	148.99	12%	59.86	10%
Paper	54.12	5%	176.15	28%
Plastics	208.10	17%	89.89	15%
Textile/Rubber	38.48	3%	19.02	3%
Metal	43.36	4%	29.09	5%
Hazardous	2.69	0%	1.92	0%
Others	98.42	8%	37.74	6%
Total	1,200.00		619.90	



Source: Satang 2003

In order to create higher quality compost, other waste fractions such as household hazardous waste and e-waste have to be removed from the waste stream to prevent contamination of the organic waste.

This can only occur if there is enforcement of waste separation at the source or point of waste generation. Table 5 shows the other waste fractions that should be taken into consideration before embarking on composting programmes, be it at the household, community or municipal level.

Table 5: Estimation of Other Waste Fractions in Penang, 2005-2020 (tonnes/year)

Other Waste (TPY)	2005	2010	2015	2020
Used Tyres	24,670	33,382	45,173	61,127
Household Hazardous Wastes (HHW)	50,395	55,237	60,073	64,819
Used Computers ¹¹	4,321	11,207	22,539	44,977
Used Cellular Phones ¹²	26	59	75	93
Construction & Demolition Wastes (C&D)	949,990	1,041,271	1,132,434	1,221,912
Sludge	345,792	379,018	412,201	444,770

Source: Estimates by Study Team.

¹¹Personal Computers penetration rate per 100 population is 21.8 in 2005 and 40.0 in 2010.

¹²Cellular Phone Subscriptions penetration rate per 100 population is 74.1 in 2005 and 85.0 in 2010. Refer to Table 5.1, Ninth Malaysia Plan.

Waste Recycling Programmes in Penang

The solid waste management strategy of the State Government of Penang, Malaysia, revolves around Waste Recycling and Resource Recovery, a strategy which has been frequently outlined by Y.B. Dato' Dr. Teng Hock Nan, the former State Exco Member in charge of Local Government, Traffic Management, Information and Community Relations.

Waste Recycling in Penang and Malaysia dates back a long time – right from the days of the “ting-ting botol” man, who went from house to house to collect used bottles and metal containers.

When the Federal Ministry of Housing and Local Government, Malaysia, launched its first waste recycling campaign in 1993, the Penang State Government faithfully followed up with a kerb-side recycling programme in Hillside, a residential area of Tanjung Bungah.

In Penang, the Chief Minister of Penang launched the recycling programme in 1993 as pilot projects in two housing areas. The programme started off well but without being anchored to a proper Public Private Partnerships for the Urban Environment (PPPUE) approach. The programme is still surviving today but is hardly thriving in the true sense of the word. The parties involved in the programme are the residents of the immediate housing area, a recycling vendor and the Penang Municipal Council.

In 2000, the Federal Ministry implemented the 3-coloured bin system – brown for glass, blue for paper and orange for plastic and metal. The Penang State Government followed suit in 2001.

In 2002, the Federal Ministry provided funds to local governments to build waste recycling collection centres. Penang was lucky to receive these funds and has built several centres.

On 12th of October 2002, the Chief Minister of Penang launched the Community Recycling Programme, after a 2-year pilot project proved successful.

Today, Penang's waste recycling and safe disposal programme includes (1) waste recycling of inorganic general waste, (2) safe disposal of hazardous waste, (3) composting of organic waste and (4) recycling and safe disposal of e-waste (electrical and electronic waste).

Like in other parts of the country, recycling and safe disposal of chemical and healthcare waste is supervised by the Department of Environment (DOE).

Waste management in Penang has since come a long way, with recycling rates having risen from 0.06% in earlier years to a state average of 18% in 2007. Penang can now boast of having the highest recycling rate in the country (exceeding the Malaysian national average, which hovers around 5%).

Table 6 below shows the total waste generation and recycling rates from 2001 to 2007. A sharp rise in the recycling rate is noted between 2001 (0.06%) and 2007 (18.05%). There are several reasons behind this rise, such as the increased awareness of the people with regard to recycling efforts, promotion of the recycling concept through the mass media and the work of local advocacy groups like PEWOG and the Green Crusaders (Don & Mylene Theseira) who have been promoting recycling to communities, schools, institutions and NGOs.



A more systematic data capture and recording system has been implemented throughout the years to obtain voluntary data from recycling agents and stakeholders by both the local council authorities in Penang. The recycling figures are still not comprehensive enough as certain recycling agents feel that they are not obliged to provide their data to the local authorities. It is hoped that with the recent enactment of the SWM Act that requires mandatory registration of recycling, businesses' data capture will be improved to give a more accurate reflection of recycling rates.

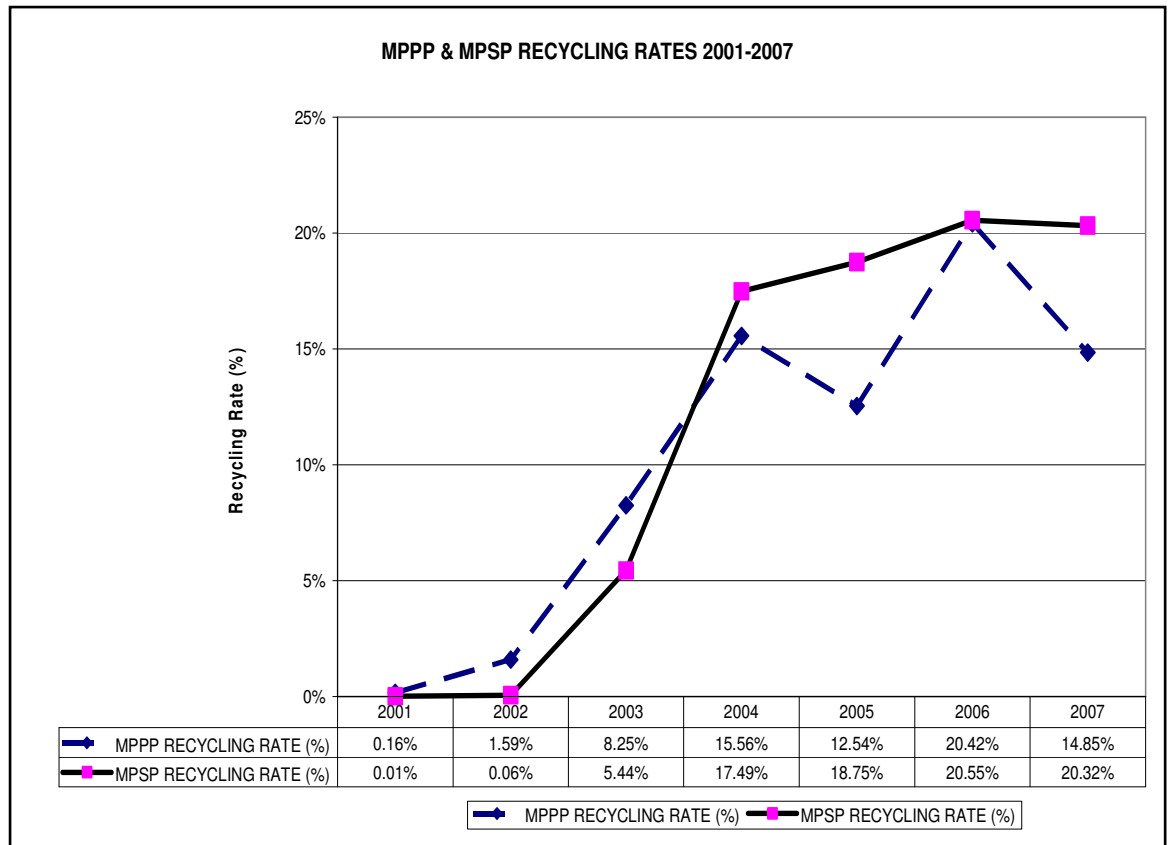
Table 6: Total Waste Generation & Recycling Rate For State Of Penang (2001-2007)

YEAR	Total Waste Generated MPPP (Metric Tonnes)	Total Waste Generated MPSP (Metric Tonnes)	TOTAL IN PENANG (Metric Tonnes)	Recycling MPPP (Metric Tonnes)	Recycling MPSP (Metric Tonnes)	TOTAL RECYCLING IN PENANG (Metric Tonnes)	PENANG RECYCLING RATE (%)
2001	200,198	395,008	595,206	319.63	20	339.63	0.06%
2002	241,828	468,177	710,005	3,844.74	260	4,104.74	0.58%
2003	274,884	456,729	731,613	22,669.29	24,858	47,527.29	6.50%
2004	283,335	536,283	819,618	44,093.17	93,777	137,870.17	16.82%
2005	320,699	512,286	832,985	40,209.93	96,032	136,241.93	16.36%
2006	360,909	583,714	944,623	73,693.00	119,964	193,657.00	20.50%
2007	438,964	617,575	1,056,539	65,195.00	125,504	190,699.00	18.05%



Source: SERI, 2008 (Adapted from MPPP & MPSP Data)

The following chart shows that MPSP posted a higher recycling rate in 2007 as compared to MPPP. However, this is only an indicative figure as MPPP reported that several recycling agents have stopped providing their collection data.



A major concern that continues to haunt the recycling efforts in Penang is the rise in daily per capita waste generation. Table 7 provides a good indication of this phenomenon.

Table 7: Per Capita Waste Generation Per Day (2004-2007)

Year	Waste Generation per day (kg)	Waste Generation per capita per day (kg)	Population
2004	819,618.17	0.57	1,442,800
2005	832,984.98	0.57	1,468,800
2006	2,588,007.97	1.70	1,492,400
2007	2,894,627.40	1.91	1,518,500

For the year 2007, the daily per capita generation of waste was estimated to be 1.91kg, having risen in tandem with population increase compared to 0.57 kg in 2005. This figure does not also take into account waste generated by tourists.

The average waste generation on Penang Island is estimated at 1.72 kg / capita per day whilst that in Seberang Perai is 0.93 kg / capita per day.

Using the estimated costs for collection, transfer and disposal of RM 98 per tonne and RM129 per tonne for MPPP and MPSP respectively, the savings that recycling activities would provide will amount to around RM22.6 million per year (Table 8). This is indeed a substantial amount saved that could be utilised for other development projects in Penang.

Costs savings from waste diversion to the Pulau Burung Sanitary Landfill may be ploughed back as incentives to further stimulate the actively recycling communities.

Table 8 : Savings from Waste Diversion From the Pulau Burung Sanitary Landfill

YEAR	SAVINGS MPPP @RM98/tonne (assuming current prices)	SAVINGS MPSP @RM129/tonne (assuming current prices)	TOTAL (RM)
2001	31323.74	2,580.00	33,904
2002	376,784.52	33,540.00	410,325
2003	2,221,590.42	3,206,682.00	5,428,272
2004	4,321,130.50	12,097,233.00	16,418,364
2005	3,940,572.94	12,388,128.00	16,328,701
2006	7,221,914.00	15,475,356.00	22,697,270
2007	6,389,110.00	16,190,016.00	22,579,126

Source: SERI, 2008



Composting

The State Government through PEWOG and SERI has started implementing awareness campaigns at household level as early as 2003, beginning with the pilot project at Kg Seronok and publication of the Household Composting Manual in collaboration with the UNDP Public Private Partnerships for Urban Environment (PPPUE).

A Household Composting Talk was held at the Pulau Tikus Market in July 2004, sponsored by the Pulau Tikus State Assemblyman. Copies of the Household Composting Manual and individual composting bins were also distributed.

Another milestone achieved was the flagship project on community composting at Taman Duku, Bukit Mertajam which was implemented by SERI with financial support from the Southeast Asia Urban Environmental Management Applications (SEA-UEMA) Project, which is a partnership programme between the Canadian International Development Agency (CIDA) and the Asian Institute of Technology (AIT) in 2005. Under this project, the Taman Duku Community in Juru was chosen as a demonstration showcase for Community Composting. This project was successfully implemented and a Technical Manual on Community Composting was published. It raised awareness and provided a model for other neighbouring communities and encouraged these communities to segregate their waste at source and send the separated organic waste to a centralized facility for composting. The project was further replicated to other communities and schools.

The list of participating bodies for the community composting project is as follows:

Communities

- JKKK Kg Seronok, 2003
- RT Taman Duku, Juru 2005
- RT Taman Semarak, Bukit Mertajam, 2006
- RT Taman Pandan Butterworth, 2006
- Bandar Tasik Mutiara, Seberang Perai Selatan, 2007
- Valdor Wet Market, Seberang Perai Selatan, 2007
- RT Bukit Bendera, Penang, 2007

Schools

Sg Ara Secondary School, Penang, 2005

Methodist Girls School, Penang, 2007

St George's Girls Schools, Penang, 2008

Bukit Mertajam High School, Bukit Mertajam, 2007

In order for an effective strategy to be implemented, composting must be promoted at an even larger scale than the household or community level. This means that the municipal councils or the new Solid Waste Management Department must play a part in arranging the proper mechanism and providing the necessary infrastructure



The UNDP Study proposed that the targets are to introduce the composting system to treat about 20% of the organic waste generated by the year 2010 and to increase the rate of composting by 10% every five years to attain the composting rate of 80% by 2025. In order to achieve these targets, three types of composting process, namely home/backyard, community and centralised composting, are to be promoted. In the first target year, it is proposed that only centralised composting will be implemented for the following reasons:

- (i) home composting of food waste without careful housekeeping throughout all stages of the operation could give rise to health risks as the organic residues may serve as strong attractants for flies and rodents;
- (ii) there is shortage of land in urban areas for community composting; and time is required for promoting public education on composting processes.

There will be one centralised composting plant each on the island and Seberang Perai. In the year 2015, public awareness on composting will be raised to such a level that home and community composting can be implemented in Seberang Perai. To reduce associated health risks, only yard and garden trimmings, the so-called 'green waste', will be home composted. In view of the shortage of land on the island where 80% of the residential units are flats, apartments and condominiums, it is proposed that only centralised composting be implemented. Table 9 shows the strategy for the percentages of organic waste to be home, community and centralised composted in Penang for the years 2010, 2015, 2020 and 2025. It can be seen that the role of home composting in the overall composting strategy to solve the solid waste problem is relatively limited. However, the benefits of increased residential interest in and dedication to recycling efforts and a greater sense of personal responsibility towards promoting a sustainable waste management regimen cannot be overemphasised.

Table 9: Percentages of Home, Community and Centralised Composted Organic Waste for the Years 2010, 2015, 2020 and 2025

Target year	Amount of organic waste generated (tonnes/day)	Home composted (%)	Community Composted (%)	Centralised composted (%)	Organic waste composted (%)
2010	610	-	-	20	20
2015	664	1	9	30	40
2020	716	1	9	50	60
2025	779	1	9	70	80

Conclusion

Like the rest of Malaysia, Penang is experiencing a solid waste problem that requires substantial financial resources as well as dedicated participation from its citizens and stakeholders to manage and resolve. It is estimated that currently about 1,800 tonnes of waste per day is generated in the state, with 700 tonnes coming from the island sector. The UNDP study has also estimated the cost of SWM and concomitantly, the fiscal gap required to meet the requirements. The gap is estimated at RM2 billion over the next 15 years. Both local governments have reported recycling rates of between 14% and 20%, and these are above the national average of 5% for Malaysia. The UNDP-Penang project on Institutionalising and Structuring SWM in Penang has examined the baseline situation in Penang, both for Penang Island and Seberang Perai, and has formulated a strategy and plan to tackle this problem using an alternative approach that is based on the extensive recycling networks supported by the active involvement of local and state governments.



The study examined how to implement the recycling-composting strategy within the context of the recently approved SWM bill. A bottom-up, as opposed to a top-down federal perspective is vital for Penang to revamp its ISWM.

The primary responsibility will be on the local government to implement the ISWM strategies by putting in place the appropriate mechanism and infrastructure. This will provide a conducive environment for the various stakeholders to play active roles in the resource recovery process (via the 3Rs) as well as participate in the household, community and municipal composting programmes.

The state government is envisaged to play an important role in promoting the separation of waste at source, especially into organic and non-organic factions. Recyclable items can then be easily recovered from the non-organic component and organic waste transported to composting plants either at the community or municipal level for processing. The action plan for composting starts with programmes on the “low hanging fruits” (stakeholders such as schools, wet markets, hotels and hospitals, where waste is concentrated and where the participants are willing and ready to adopt recycling strategies). After learning from this, the programme will move on to other “potential adopters” and eventually target even the “hard core” and difficult stakeholders. **§ Khor Hung Teik**

Sources:

- UNDP, 2007. Institutionalising and Structuring SWM in Penang, Final Report.
- SERI, 2007. Final Report Consumer Survey & Sensitization on Waste Separation At Source In Penang. Asian Institute of Technology, Joint Application Research.
- SERI, 2007. Final Report Community Composting For Taman Duku Residential Area, Juru, Malaysia. Southeast Asia Urban Environmental Management Applications (SEA-UEMA).

International Headlines

Europe price surge persuades politicians to back ECB

Source: Bloomberg.com, 5th May 2008, (excerpt of article by Ben Sills and Gabi Thesing)

The European Central Bank is winning Europe's political leaders over to its policy of focusing on fighting inflation even as economic growth slows. Politicians from France, Belgium and Luxembourg, who previously complained that the ECB paid too little attention to economic growth, have signaled increasing concern that inflation is eating away at voters' incomes.

The ECB has refused to follow the U.S. Federal Reserve and Bank of England in lowering interest rates after inflation surged since August, to reach a 16-year high of 3.6 percent in March. The bank argues that rising prices are a bigger threat to economic growth than the increase in credit costs resulting from the collapse of U.S. subprime mortgages. The Frankfurt-based central bank is expected to leave the benchmark refinancing rate at a six-year high of 4 percent when policy makers meet in Athens on May 8, according to all 53 economists surveyed by Bloomberg News. The same day the Bank of England will probably leave its key rate at 5 percent after three cuts since December, a separate survey shows.

United Nations figures showed food was 57 percent more expensive globally in March than a year ago as economic growth in emerging markets such as China, India and Russia pushed up demand for commodities. The price of rice has doubled in the past year and wheat has climbed 65 percent. The price of crude oil has increased 78 percent.

Belgian Finance Minister Didier Reynders, who told Les Echos in October that the ECB should consider lowering rates if economic growth slows, suggested inflation concerns are now more pressing. "We have a concern about inflation due to oil prices, also food prices," he said April 3. "It is important for monetary policy to do something."

The world's biggest financial companies have posted at least \$319 billion in writedowns and credit losses since the start of last year as the market for mortgages aimed at people with poor credit histories collapsed. The cooling U.S. economy and the stronger euro are starting to take their toll on Europe. Manufacturing growth slowed for a third month in April and confidence in the economy dropped to the lowest level since August 2005.

Pricey food knocks down import barriers

Source: excerpt from Business Times online, 19th April 2008

WASHINGTON: The surge in world food prices is accomplishing what seven years of trade talks haven't — knocking down import barriers. The Doha round of global trade negotiations has been stalled since 2001 because developing nations have refused to lower import tariffs that protect their farmers and rich countries won't give up farm-price supports. Now, import duties are being slashed from Brazil to Burkina Faso in response to prices that the World Bank says have risen 83 per cent in the past three years; subsidies in the US and Europe are falling.

"Food prices have done for import liberalisation what Doha wouldn't have been able to achieve for a very long time," says Arvind Subramanian, a trade expert at the Peterson Institute for International Economics in Washington.

Since early 2007, when cereal prices began rising, developing nations have taken a raft of measures to increase imports. India removed a 36 per cent import tariff on wheat flour, and Indonesia eliminated duties on wheat and soyabeans. Peru jettisoned tariffs on wheat and corn. Turkey cut import taxes on wheat to eight per cent from 130 per cent and on barley to zero from 100 per cent. Mongolia scrapped its value-added tax on imported wheat and flour. Burkina Faso suspended import taxes on four food staples in February after riots in the West African nation over price increases. And Brazil may remove its 10 per cent tax on wheat imports. In all, at least 24 nations have reduced duties and value-added taxes, according to an April 9 World Bank report.

In the US, farm subsidies are expected to fall below US\$8 billion (US\$1 = RM3.15) this year, down from US\$13 billion in 2005, says David Orden, a senior research fellow at the International Food Policy Research Institute. European Union support of farmers fell by e10 billion (e1 = RM5) from 2004 to 2006, according to the Organisation for Economic Cooperation and Development in Paris.



US, ASEAN trade ministers to discuss market opening efforts

Source: Channel News Asia, 29th April 2008

WASHINGTON : US Trade Representative Susan Schwab said on Monday she would meet Southeast Asian counterparts to review progress of a trade and investment initiative and the Doha Round of global trade talks.

The meeting on the US-Association of Southeast Asian Nations (ASEAN) Trade and Investment Framework Arrangement (TIFA) will be held in Bali, Indonesia, from May 1 to 4 as a follow up to talks held in November, Schwab's office said in a statement.

The United States inked the TIFA in August 2006 with the 10-member ASEAN in a deal seen as a precursor to a full free-trade agreement. Under the TIFA, the United States and ASEAN would have a formal ministerial dialogue aimed at expanding trade and investment. ASEAN was the fifth largest export market for the United States in 2007, with US exports totalling US\$61 billion, according to the statement.

In addition, US foreign direct investment in ASEAN countries reached US\$99 billion in 2006, up 13 percent from the previous year, according to latest available US data.

SERI RESEARCH TEAM



YBhg Dato' Dr. Toh Kin Woon	Executive Chairman
Dr. Chan Huan Chiang	Economic Advisory Panel
Dr. Goh Ban Lee	Economic Advisory Panel
Professor Muhamad Jantan	Economic Advisory Panel
Professor Cheah Kooi Guan	Economic Advisory Panel
Professor Suresh Narayanan	Economic Advisory Panel
Professor Lai Yew Wah	Economic Advisory Panel
Mr. Khor Hung Teik	Acting Head, Environmental Section
Mr. Lim Wei Seong	Head, Economic Section
Cik Fatimah Hassan	Senior Programme Coordinator
En. Baharulnizam bin Baharum	Senior Programme Coordinator
Mr. Richard Ho Weng Keong	Research Analyst
Mr. Parthiban Gopal	Research Analyst
Mr. Ooi Ying Chieh	Research Officer
Mr. Ng Kar Boon	Research Officer
Cik Athirah Azhar	Research Officer

Printed, Published
and Distributed by
Socio-Economic &
Environmental
Research Institute
(SERI), No.10,
Brown Road, 10350
Penang