7 The Asian Bond Bank

A good idea for credit enhancement

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The rate of interest paid by borrowers is dependent upon the structure of the loan and the creditworthiness of the borrower. The structure of the loan is often determined endogenously, whereas the credit rating tends to be determined exogenously. Several methods of enhancing credit ratings exist. This chapter discusses one of the most frequently overlooked methods, the bond bank.

Municipal bond banks first appeared in Canada in 1956 and in the United States in 1970 for the express purpose of lowering the cost of debt for municipalities. Since that time, municipal bond banks have been offering a unique and advantageous way for small communities to finance municipal projects. It is argued that a similar model could be applied to enhance credit ratings and reduce borrowing costs for Asian governments.

In the United States and Canada, many small municipalities lack knowledge about financial markets and need to borrow relatively small amounts of capital. The process of hiring an investment bank and floating a small amount of what will be an illiquid, and possibly unrated debt issue, can significantly increase the cost of borrowing for the municipality. Historical, structural and current financial problems have contributed to low credit ratings in many Asian countries. The enhancement of credit ratings results in lower borrowing costs, thus improving growth and wealth. In the United States and Canada, small or poorly rated municipalities face similar borrowing problems. One improvement available to many municipalities is the municipal bond bank. Municipal bond banks operate as credit enhancing organisations by 'pooling' multiple municipalities' borrowing needs into a single bond bank debt issuance, thereby modifying two important characteristics of the municipalities' debt.

Table 7.1 Sovereign credit rating

	Local currency	Foreign currency
China	-	BBB
Hong Kong SAR	AA-	A+
India	BB+	BBB
Indonesia	BB+	B
Korea	A+	A
Malaysia	A+	BBB+
Mongolia	B	B
Philippines	BBB	BB
Singapore	AAA	AAA
Chinese Taipei	AA-	AA
Thailand	A-	BBB
Vietnam	BB	BB

Source: Standard & Poors', June 2003.

First, the credit rating associated with the debt is changed. Municipal bond banks must have strong credit ratings if they are to fulfill the purpose for which they are intended. Bond banks operate by re-lending the funds obtained with their higher credit rating to the municipalities with lower credit ratings. This process is called 'credit-rating arbitrage', and is considered useful for East Asian economies (Table 7.1).

The second characteristic modified by municipal bond bank debt issuance is the size of the issue. By pooling the borrowing needs of multiple municipalities, municipal bond banks are able to offer larger debt issues, which typically make the primary market offering more competitive. With more competition in the primary market, one expects the price of the bond to rise and the municipality's debt servicing cost to fall. Savings are also realised through a reduction in the transaction costs associated with the economies of scale in the underwriting process. Savings from the anticipation of increased liquidity in the secondary market, due to the increased size of the offering, may also occur. Municipal bond banks typically offer professional management and minimal administrative costs to their members. Increased size and liquidity may benefit the smaller Asian economies or economies which infrequently or irregularly issue debt.

At least three empirical studies have attempted to quantify the impact municipal bond banks have had on US municipalities' borrowing costs (Cole and Millar 1982, Katzman 1980, Kidwell and Rogowski 1983). These studies have indicated that municipalities with credit ratings below that of the

regional municipal bond bank realised savings from both an improvement in their credit rating and the economies of scale associated with the underwriting process. Municipalities with credit ratings equivalent to the municipal bond bank typically realised no savings from credit rating arbitrage, but did save in the underwriting process. Municipalities with credit ratings higher than the municipal bond bank realised no benefits from bond bank participation.

Unlike most governmental organisations, municipal bond banks have helped municipalities without imposing a financial burden upon the taxpayer. Most municipal bond banks operate efficiently enough to reduce the municipality's cost of debt while simultaneously paying for their own operations. The bond bank of Alaska has produced excess returns to the state every year since 1977 for a cumulative US\$23.2 million (Alaska Bond Bank 2001). This sum is more than the state of Alaska's original investment of US\$18.6 million, and while this may seem a relatively poor rate of return on capital, it must be kept in mind that municipal bond banks are not run as for-profit operations, rather the bond bank's primary purpose is to pursue lower cost loans for the state's municipalities. The Alaska Bond Bank secured over half a billion dollars of funding for Alaskan communities and in the year 2001 alone, the bond bank issued US\$50 million in debt and saved the communities an estimated US\$4 million in reduced interest costs. The turning of a small profit, while reducing the cost of debt, only emphasises the magnitude of the efficiency gains that these organisations produce.

With the exception of the Municipal Finance Authority of British Columbia, bond banks in Canada are called municipal finance corporations. For the purposes of this paper, municipal finance corporations and the municipal bond banks of the United States will generically be referred to as municipal bond banks, though some differences exist between the Canadian and US institutions. A few of the significant differences are as follows. With the exception of the Municipal Finance Authority of British Columbia, senior Canadian government directly guarantees municipal finance corporation loans. Whereas in the US, senior 160 governmental guarantees are only available on debt issued through the Maine Municipal Bond Bank and the Vermont Municipal Bond Bank. In Canada, with the exception of a few large cities, municipalities located in municipal finance corporation jurisdictions are required to use this facility, whereas in the United States, it is entirely at the discretion of the municipality whether or not to issue debt through the regional bond bank. Some municipal finance corporations have issued debt in foreign currencies; whereas US bond banks have only issued debt in US dollars.

Because of the structure of the municipal finance corporations, in particular the senior governmental guarantee of debt and the requirement for municipality participation, this paper focuses on the US municipal bond bank model. It is believed that the Canadian practices obscure one of the more interesting accomplishments of bond banks: synergistic credit enhancement. If a municipal bond bank operates as an extension of the senior government, then its debt issues are senior governmental debt issues and a municipal bond bank debt issuance should directly result in an increase in the province's overall debt load and should marginally increase the province's cost of capital and could be viewed as an inter-governmental transfer rather than an improvement in efficiency. This model seems inappropriate for an Asian bond bank that lends its credit rating to sovereign governments. Rather than the unrealistic assumption that sovereign Asian governments would willingly assume the debt of other Asian nations, and the moral hazard problems associated with this, we believe the more interesting and important insights gained from the study of municipal bond banks are in the examination of their stand-alone efficiency enhancements, thought to be more distinguishable in the US municipal bond bank model.

Municipal bond banks are structured in a variety of different ways. Because individual bond banks are designed to exploit the cost-saving inefficiencies present in their particular region, bond banks try to organise themselves to focus on their region's greatest inefficiency. Typically, this means focusing the bank's operations to take advantage of either the potential for credit rating arbitrage or the size of the debt issue aspect. Therefore, two broad generalisations can be used to describe bond bank structures.

In one structure, the municipal bond bank issues revenue bonds¹ in the national bondmarket using its own name, and purchases the general 161 obligation bonds of the municipality.² When operated in this way, municipal bond banks pass the debt service costs through to the municipalities and the term structure of interest rates for the municipalities is equal to that of the municipal bond banks (Cole and Millar 1982). This allows the municipality to take advantage of the credit rating arbitrage process. In the second operating structure, the municipal bond bank ascertains the borrowing needs of the municipal applicants together and issues debt in one large pool, taking advantage of the increased size of the issue (Figures 7.1 and 7.2).

Figure 7.1 Bond bank focused on the credit rating effect

Note: 1. Initial bond offering by municipal bond bank based on municipal bond bank credit rating.

2. Proceeds from municipal bond bank are used to purchase bonds from municipalities.

3. Municipalities pay debt service back to municipal bond bank.

4. Municipal bond bank pays interest and principal to investors from funds repaid by municipalities.

Source: Shinn, P., 1988. 'Bond banks and revolving loan funds', *Government Finance Review*, June:36–37.

How US municipal bond banks operate

In the United States, to be eligible for bond bank participation, municipalities must first fulfil their required jurisdictional obligations for issuing debt. This usually requires obtaining either the approval of the citizens or approval from the bond counsel. The municipality then submits an application to the municipal bond bank.

When making a decision as to whether to include a certain municipality's debt,³ municipal bond banks examine the same information as the credit ratings agencies. Issues such as the amount of the bond, if the issue was publicly voted on, what assets or taxes (in addition to property taxes) are being pledged, the project feasibility study, the intended sources and uses for the bond bank's funds, the municipality's current outstanding debt, any previous defaults by the municipality, the local economy, the largest employers, the population figures, property tax statistics and the current year's budget all effect the bond bank's decision. Once the bond bank decides to accept the municipality into the debt pool, the municipality pays the same

Figure 7.2 A bond bank focused on the size of debt issue

Notes: 1. Initial bond proceeds

2. Bond bank purchases bonds from municipalities

3. Municipalities repay loan to state

4. Bond bank pays debt service to investors from bonds received from municipalities

5. State general or moral obligation to repay reserve fund if bond bank cannot make payments.

Source: Shinn, P., 1988. 'Bond banks and revolving loan funds', *Government Finance Review*, June:36–37.

rate of interest on the borrowed funds as all the other municipalities involved in that debt issuance. That is, after being accepted, the municipality's credit rating ceases to be a distinguishing factor. For an Asian bond bank, adjustments could be made depending upon sovereign credit rating, an Asian credit-rating agency or using a system of tranches of bonds with different cash flow priorities (Rhee 2003).

When the municipal bond bank has accumulated a sufficient amount of debt or the regularly scheduled debt issuance date arrives, the bank floats the issue and in some cases, an additional 10 per cent designated for a reserve or sinking fund. This reserve fund helps lower the cost of debt by reducing the default risk faced by investors. The reserve fund is typically 162 equal to one year's worth of principal and interest payments and can be used in the event of slow pay or default by a municipality (Cole and Millar 1982). The reserve fund is invested in Treasury Securities (Katzman 1980) and 'the interest rate spread between the return on taxable government securities and the tax-exempt bond bank issues is an arbitrage profit for the bond bank' (Kidwell and Rogowski 1983:110).

In order of priority, the collateral behind the municipal bond bank's debt issues are the reserve fund, the full faith and credit of the municipality, a possible lien on state grants in aid to municipality or an 'intercept mechanism', and finally the moral obligation of the state to replenish the reserve fund in case of depletion. Because states typically offer only their moral obligation, municipal bond banks have generally received a credit rating one-notch below senior governmental authority (Katzman 1980).

Because the municipal bond bank is raising funds for the municipality to use in a municipal project, municipal bond bank issues are often free from federal and in many cases state and local taxes. This helps reduce the municipality's debt servicing costs but still attracts investors with equivalent after tax returns.

While requiring the municipality to pay back the principal and interest over the useful life of the asset, some municipal bond banks offer flexibility in their amortisation schedules. The Maine Municipal Bond Bank allows a municipality to 'structure the principal repayments however they would like as long as it coincides with the useful life of the asset being financed' (personal communication with Gregory D. Connors, Maine Municipal Bond Bank). The debt issued by the Municipal Finance Authority of British Columbia is in the form of 'bullets', debt that cannot be called and is due only at maturity.⁴ The Municipal Finance Authority of British Columbia and the Bond Bank of Vermont use a level debt service (equal principal and interest payments each year) (Appendix Table 7.1).

The Municipal Finance Authority of British Columbia also offers increased flexibility to its municipalities by allowing them to participate in interest rate swaps, in particular, forward-starting swaps. This flexibility gives the municipality the ability to lock in an affordable rate of interest before the Municipal Finance Authority of British Columbia makes its biannual debt issuance, thereby hedging against a potential rise in interest rates. In addition, access to the swaps market allows the municipality to lock in a fixed rate of interest for a longer or shorter term than the standard Municipal Finance Authority of British Columbia 10-year bond issue.⁵

An additional flexibility offered by municipal bond banks is the use of bond insurance. Municipal bond insurance which has been available since 1971⁶ and is a contractual guarantee by a company to pay the bondholder any principal and or interest due at maturity (Gilbert and Pike 1995). Obtaining such insurance usually requires that the municipality have investment grade bonds. Major insurers of bonds include The Ambac Financial Group, The Municipal Bond Insurance Association, Financial Guaranty Insurance Company and Financial Security Assurance Inc.⁷

Financial Security Assurance, the fourth-largest municipal bond insurer, charges premiums based on a number of factors including the type of obligation, the term and average life, rating quality, capital charge for that type of security, market spreads at the time, size of the transaction and Financial Security Assurance's available credit capacity. Premiums are charged as a percentage of total debt service on the bonds and the premium is payable in full, at the time the policy is issued. Premiums range from approximately 10 basis points for Aa/AA rated bonds to 200 basis points for highly structured Baa/BBB bonds (Personal email with Suzanne M. Finnegan, Financial Security Assurance Inc.).

In theory, municipal bond banks should choose to insure debt if the discounted savings from the reduced cost of debt is greater than the cost of the insurance. Such savings are highly dependent upon the credit rating spread between the municipal bond bank and the municipality at the time the debt is issued.

Who benefits the most from participation?

Because of the heterogeneous nature of various municipalities, municipal bond banks offer different benefits to their participants and some municipalities benefit more than do others from bond bank participation. The relative credit rating spread between the state and the stand-alone municipality, plays an important role in whether an municipal bond bank

can help a municipality reduce its borrowing cost. Studies indicate that smaller communities with poorer credit ratings benefit the most when issuing debt through municipal bond banks (Cole and Millar 1982, Katzman 1980, Kidwell and Rogowski 1983).

Some large communities, seeing little benefit from joining a municipal bond bank, choose to issue their own debt. A municipality might choose not to use the services of a municipal bond bank when they have concerns about implicitly reducing their own debt capacity, improving liquidity and name recognition for debt issued in their own name, as well as a desire to develop their own credit history. This may be a problem for an Asian bond bank. Better rated countries such as Singapore, Hong Kong SAR and Chinese Taipei may not see the benefit of joining such an organisation, seeing little benefit for themselves.

The two methods available for selling debt to an underwriter, or making an initial public offering, are the negotiated process and the competitive bid process. Empirical studies have found that the competitive bid process typically yields a lower cost of debt than does the negotiated process. However, municipalities with a poor credit rating and municipalities that only need to issue a small amount of debt may have no alternative but to issue debt in a negotiated process. Additionally, because of the composition and complexity of bond bank issues, and the presence of only a few underwriters who engage in bond bank sales, most bond banks sell their debt issues to underwriters in a negotiated process as well. This group includes the Maine and Vermont Municipal Bond Banks (Kidwell and Rogowski 1983).⁸

However, because a large municipality can choose how it will sell its bonds to the underwriter, a direct comparison between municipal issues and bond bank issues may not be appropriate. A municipality with a credit rating equal to the bond bank may have greater savings if it chooses to issue debt on its own in a competitively bid auction.

Kidwell and Rogowski's 1983 study of the Vermont and Maine Municipal Bond Banks showed that the only municipalities that did not benefit from municipal bond bank participation were those involved in competitively bid auctions with credit ratings of Aaa and issues over US\$5 million, and municipalities with Aa ratings and debt issues over US\$40 million. Savings for smaller and more poorly rated municipalities ranged up to 154 basis points. That is, it was only the large, competitively bid, bond issues from issuers with Aa ratings or better that did not benefit from bond bank participation.

With such large reductions in the cost of debt, one must ask whether there are hidden costs associated with municipal bond banks or can one attribute the entire reduction in the cost of debt to improvements in efficiency? Examination of this issue has focused on whether perceived increases in the debt load of the state might increase the overall cost of capital for the region. In the United States, municipal bond banks are separate legal entities and in most cases, the senior government is not financially liable for the bank's actions.

However, such a situation may exist if the bondmarket participants mistakenly assume that the municipal bond bank's debt is an implicit obligation of the state. In theory, this could adversely affect the cost of borrowing for the state and indirectly penalise municipalities who are not using the municipal bond bank. This could occur if investors required an increased premium in compensation for the perceived increase in the state's debt load. Empirical evidence is far from definitive in this matter.

In the United States, municipal bond banks are legal entities separate from the state in which they operate. Typically, the full faith and credit of the bank is pledged to the payments of principal, redemption premium and interest, but this is not a 'legally enforceable obligation upon the State' (Maine Municipal Bond Bank 2000:3) though the state often pledges its moral obligation to the maintenance of a debt service reserve for all of the bond bank's bonds (Alaska Bond Bank 1999).⁹

While municipalities rarely default, problems have arisen. In particular is the case of Leukerbad, Switzerland in 1998. Leukerbad, a small ski and tourist town, unwisely borrowed to the point where it could no longer make its interest payments and defaulted. The Swiss government, under no legal obligation to help, stayed away from the situation. Several factors make this less likely to happen when a bond bank is involved. First, bond banks examine the ability of the municipality to repay its borrowings. If the bond bank believes the community cannot repay its debt, the bond bank will refuse to issue bonds and the community will need seek alternative methods of raising capital or forgo their intended project. Secondly, the bond bank is a separate entity from the state of government. Should a community fail to repay its debt, and the bond bank also default, the chain of liability stops with the bond bank and the state need not step in and make the interest and principal repayments for the bondholders, thereby limiting the liability of the state.

Cooperative borrowing in Europe

Although European countries typically have special banks or agencies that lend to municipalities, cooperative borrowing agencies also exist. Two major cooperative borrowers in Europe are Kommunivest, in Sweden, and Bank Nederlandse Gemeenten in the Netherlands.

Kommunivest began its cooperative program in 1986. Currently there are 111 Swedish municipalities and three county councils that are members. Like their Canadian counterparts, Kommunivest diversifies its operations to include borrowings from foreign capital markets and in foreign currencies;¹⁰ however, such borrowings do not enjoy the tax-free status received by US issues. Kommunivest borrowings are divided among Swedish, other European and Japanese capital markets. The bank does all the documentation, swaps and hedging required for the debt. Moody's current credit rating for Kommunivest is Aa1, the same as that for the Kingdom of Sweden.

Issues of assimilation between better credit rated municipalities and more poorly rated municipalities have arisen in Sweden. The two largest cities in Sweden, Stockholm and Gothenburg, have Aa1 ratings (the same as Kommunivest) and both have refused to join the cooperative, believing that economically stronger regions have little, or nothing to gain by joining. Rather these larger, better credit rated communities believe they are subsidising the borrowing of weaker municipalities. The issue of wanting to establish their own credit history and the desire to develop liquidity and name recognition for their own debt may further deter municipalities from joining the cooperative. Problems have arisen in Germany as well. Though written into the German constitution that various *länder*, or regions, shall be mutually supportive, economically stronger regions are fighting to avoid lending their stronger credit ratings to the economically weaker regions, in particular the newer regions in eastern Germany. These examples demonstrate the difficulties in enticing bigger, and better-rated, regions to join in cooperative borrowing arrangements.

Potential applications to Asia

International credit rating agencies have given many Asian governments relatively low credit ratings. One of the basic ideas of diversification is that whenever the returns of individual securities are not perfectly correlated, the risk of a portfolio of those same securities can be reduced. This same idea can be applied to the pooling and reselling of bonds from multiple countries. Because the economies of Asian economies are quite different,

the risk of the overall portfolio of bonds from Asian countries should have a better risk–return tradeoff and therefore a lower cost of capital for the bond banks bonds. This saving could be passed on to the borrowing countries.

While Asian sovereign issuers are larger than small US municipalities, small corporate issuers could eventually be allowed to issue bonds through the bond bank. Such involvement with the bond bank's bonds could significantly increase the secondary market liquidity of the corporation's debt and reduce borrowing costs.

Finally, bond banks have another practical advantage; that is, the extent to which the borrower is liable for the debt of other borrowers. It seems unlikely that any country would be freely willing guarantee the debt of another. Bond bank bonds are the bond bank's responsibility to repay, not the government of the borrowing country, although it is possible that the country might lose its initial investment in the bond bank.

Conclusion

Municipal bond banks first appeared in Canada in 1956 and in the United States in 1970. Since that time, municipal bond banks have been offering a unique and advantageous way for communities to finance municipal projects. Municipal bond banks operate as credit enhancing organisations that pool multiple municipalities' borrowing needs into a single issue.

Municipal bond banks are efficiency enhancing organisations, which are often able to significantly reduce the cost of debt for small, unrated or poorly rated municipalities. The savings of the municipality are highly dependent upon its borrowing needs and the relative credit rating spread between the state and municipality at the time the debt is issued.

Bond banks are heterogeneous in structure and operation, offering varying degrees of flexibility in their amortisation schedules and the use of swaps. Municipal bond banks are able to improve the borrowing costs for the municipalities primarily through credit rating arbitrage, that is, lending funds obtained using their better credit rating to more poorly rated municipalities, although municipal bond banks also lower the cost of debt through the economies of scale in the underwriting process and knowledge of capital markets.

Many Asian countries have poorly rated government debt and this increases their cost of debt. A credit enhancing program modelled along the lines of a bond bank could help Asian countries and firms reduce their cost of capital. Because pooled Asian bonds are essentially a portfolio of bonds, and the price movements of various Asian economy bonds are less than

perfectly correlated, bond bank bonds could produce a lower risk portfolio and result in a lower cost of capital for the bond bank which could be passed along to the borrowing countries.

Notes

- ¹ Municipal bond bank's bonds are revenue bonds because of the source of their principal and interest payments are the cash flows generated by the municipalities.
- ² Investigation into the proceeds generated by revenue bonds versus the proceeds generated by general obligation bonds (general obligation bonds tend to enjoy a lower interest rate than comparable revenue bonds) have found that the savings from bond bank participation have surpassed the losses of issuing revenue bonds instead of general obligation bonds. Additionally, a municipal bond bank will often incorporate a municipality's revenue bonds in its debt offering.
- ³ In the United States, municipal bond banks typically have the authority to exclude a municipality if it is felt such a municipality would significantly detract from the marketability of its bonds. An example where a municipal bond bank might not want to include a certain municipality's debt is if the municipality's borrowing needs were very large, swamping the municipal bond bank's credit capacity and thereby damaging its ability to serve other municipalities.
- ⁴ If the Municipal Finance Authority of British Columbia issued callable debt, investors would require, at a minimum an equal, but more commonly, a higher rate of return. This difference between callable and non-callable debt is referred to as the 'option adjusted spread'.
- ⁵ An 'extension swap' is a special type of forward swap. It allows the municipality to lock in a fixed rate of interest beyond the original tenor of the swap.
- ⁶ The first use of municipal bond insurance was in 1971. The Greater Juneau (Alaska) Borough Medical Arts Building General Obligation Bonds were insured for a par value of \$650,000.
- ⁷ In 1986, Financial Security Assurance Inc. was the first bond insurer to guarantee an international security.
- ⁸ In recent years, more than 80 per cent of the dollar volume of municipal initial public offerings has been sold through negotiated bond sales (Chang 2000).
- ⁹ The Alaska Bond Bank's Annual Report notes that, although it pledges its moral support, the state 'is not obligated to pay principal or interest thereon. Nor does the State pledge its taxing power to the bonds' (Alaska Bond Bank 1999).
- ¹⁰ It is believed that the future currency payments are swapped back to home currency to reduce the exchange rate risk.

Appendix Table 7.1 Example of a payment structure of the Municipal Finance Authority of British Columbia

20 year term, 5 %Capitalisation rate, Principal: 1,000,000.00, Interest rate: 5 per cent, S/F factor: 0.030242587

	Principal payment	Interest payment	Total payment	Acturial	Reducing balance
Yr 1 Semi-annual		25,000.00	25,000.00		1,000,000.00
Yr 1 Annual	30,242.59	25,000.00	55,242.59		969,757.41
Yr 2 Semi-annual		25,000.00	25,000.00		969,757.41
Yr 2 Annual	30,242.59	25,000.00	55,242.59	1,512.13	938,002.70
Yr 3 Semi-annual		25,000.00	25,000.00		938,002.70
Yr 3 Annual	30,242.59	25,000.00	55,242.59	3,099.87	904,660.24
Yr 4 Semi-annual		25,000.00	25,000.00		904,660.24
Yr 4 Annual	30,242.59	25,000.00	55,242.59	4,766.99	869,650.67
Yr 5 Semi-annual		25,000.00	25,000.00		869,650.67
Yr 5 Annual	30,242.59	25,000.00	55,242.59	6,517.47	832,890.62
Yr 6 Semi-annual		25,000.00	25,000.00		832,890.62
Yr 6 Annual	30,242.59	25,000.00	55,242.59	8,355.47	794,292.56
Yr 7 Semi-annual		25,000.00	25,000.00		794,292.56
Yr 7 Annual	30,242.59	25,000.00	55,242.59	10,285.37	753,764.60
Yr 8 Semi-annual		25,000.00	25,000.00		753,764.60
Yr 8 Annual	30,242.59	25,000.00	55,242.59	12,311.77	711,210.24
Yr 9 Semi-annual		25,000.00	25,000.00		711,210.24
Yr 9 Annual	30,242.59	25,000.00	55,242.59	14,439.49	666,528.17
Yr 10 Semi-annual		25,000.00	25,000.00		666,528.17
Yr 10 Annual	30,242.59	25,000.00	55,242.59	16,673.59	619,611.99
Yr 11 Semi-annual		25,000.00	25,000.00		619,611.99
Yr 11 Annual	30,242.59	25,000.00	55,242.59	19,019.40	570,350.00

Yr 12 Semi-annual		25,000.00	25,000.00		570,350.00
Yr 12 Annual	30,242.59	25,000.00	55,242.59	21,482.50	518,624.91
Yr 13 Semi-annual		25,000.00	25,000.00		518,624.91
Yr 13 Annual	30,242.59	25,000.00	55,242.59	24,068.75	464,313.57
Yr 14 Semi-annual		25,000.00	25,000.00		464,313.57
Yr 14 Annual	30,242.59	25,000.00	55,242.59	26,784.32	407,286.66
Yr 15 Semi-annual		25,000.00	25,000.00		407,286.66
Yr 15 Annual	30,242.59	25,000.00	55,242.59	29,635.67	347,408.41
Yr 16 Semi-annual		25,000.00	25,000.00		347,408.41
Yr 16 Annual	30,242.59	25,000.00	55,242.59	32,629.58	284,536.24
Yr 17 Semi-annual		25,000.00	25,000.00		284,536.24
Yr 17 Annual	30,242.59	25,000.00	55,242.59	35,773.19	218,520.47
Yr 18 Semi-annual		25,000.00	25,000.00		218,520.47
Yr 18 Annual	30,242.59	25,000.00	55,242.59	39,073.98	149,203.90
Yr 19 Semi-annual		25,000.00	25,000.00		149,203.90
Yr 19 Annual	30,242.59	25,000.00	55,242.59	42,539.80	76,421.51
Yr 20 Semi-annual		25,000.00	25,000.00		76,421.51
Yr 20 Annual	30,242.59	25,000.00	55,242.59	46,178.92	(0.00)
Total	604,851.74	1,000,000.00	1,604,851.74	395,148.26	