Journal of Service Science and Management, 2020, 13, 261-280
https://www.scirp.org/journal/jssm
ISSN Online: 1940-9907
ISSN Print: 1940-9893

# Municipal Bonds as Leverage for Negotiation and Improving Operational Efficiency

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**How to cite this paper:** Cohen, S. S., & Yosef, R. (2020). Municipal Bonds as Leverage for Negotiation and Improving Operational Efficiency. *Journal of Service Science and Management, 13,* 261-280.
https://doi.org/10.4236/jssm.2020.132017

**Received:** March 6, 2020
**Accepted:** April 11, 2020
**Published:** April 14, 2020



## Abstract

This article examines how the use of bonds to finance municipal activities affects the efficiency of municipalities. We posit that the sale of municipal bonds affects cities directly by reducing their financing expenses and indirectly by improving their operational efficiency. To investigate this hypothesis, we use case studies of four municipalities in Israel. Our main results show that the introduction of bonds as an option for financing municipalities has a lasting effect on the cities' bargaining power with the banks, even if the issuance is not repeated again. Other municipalities that have not issued bonds also benefit from the leverage that this possibility offers them when negotiating with the banks. Furthermore, we find that the use of bonds improves the operational efficiency of municipalities significantly.

## Keywords

Bonds, Municipalities, Operational Efficiency, Finance

## 1. Introduction

The local authority is one of the most important groups in the public sector, one whose influence in production and economic activity has increased in recent years. This development is a result of urban growth and the rise in the operational and financial independence of local authorities at the expense of central governments (Heifetz, Shemer, & Rozenshain, 1996). Local authorities compete to attract new residents, enabling these residents to influence the services and finances that the local government supplies (Cebula & Avery, 1983). This competition brings with it pressure for improved efficiency, especially for smaller municipalities, where services are fewer and more expensive (BoruKhov, 2004). While local authorities have economic, social and political power that affects the level and quality of life of their residents, they also have implications for other important areas at the national level including education, social welfare and culture (Amrani, 2006).

For local municipalities in Western countries, bonds are the main instrument for raising money from sources other than banks. This method of fundraising is widely used, accepted and attractive. Despite the extensive variety of potential sources offering credit to local authorities, the trading in bonds from local authorities constitutes a large proportion of the trade in the monetary markets. The high level of competition allows the local authorities to obtain credit at relatively low rates (Zelekha, Landau, & Steinberg, 2006; Kapoor & Pati, 2017).

The American market is the largest and most developed municipal bond market in the world. This market includes bonds issued by the state, by local authorities, and by the industries they own, at an estimated value of 3.7 trillion dollars in 2011 (SEC, 2012). The ability of these authorities to issue bonds was a deciding factor in the development and expansion of the U.S., as they financed the growth and maintenance of infrastructures and provided capital for the operation of local authorities.

Most municipal bonds have little credit risk and are federally tax-free, providing an attractive area for investors (Biger & Float, 1997; Kapoor & Pati, 2017). In most cases bonds are paid off on time, and municipal financial disasters are rare and limited. In Europe, municipal bonds have been developing in recent years. As for central and eastern Europe, the authorities are rated similarly to their country's credit rating. It is interesting to note that in most countries, except for the U.S., the income from bonds cannot be used to cover current deficits (Heifetz et al., 1996).

The Balkan developing countries rarely use municipal bonds as an alternative source of financing municipal activity and effective money management. To ensure the successful issuance of bonds to support the local economy, they examined whether the municipality of Stip in the Republic of Macedonia is able to issue municipal bonds as an alternative way of financing its investment activities. Using classical SWOT analysis and statistical analysis, they examined and found that municipal bonds as an alternative source for financing municipal activities are justified, especially if the funds are related to a particular type of revenue-generating project (Gogova Samonikov, Veselinova, Gruevski, Fotov, & Binovski, 2017). Similarly, the government of India sought to provide and finance municipal infrastructure due to the rapid urbanization process. For this purpose, the issuance of municipal bonds as new financing mechanisms for long-term financing was examined. It described the problems like risks and consequences of this step, what initiatives it must take before bond issuance in order for this move to succeed (Chattopadhyay, 2006). Contrary to that, this study, that was conducted in Israel, examines the success several years after its issue, on the one hand as an effective external audited financial tool, and on the other as a tool for improving the management of the Authority. Moreover, this article examines whether improvement in behavior was maintained over the years.

In this paper, we use a case study of four municipalities in Israel that issued bonds as an alternative to credit from the banks in order to analyze the possible direct and indirect effects of this action. We argue that the issuance of municipal bonds has a direct effect on the efficiency of the local authority by reducing its financing costs. It also has a positive indirect effect by improving the authority's operational efficiency. Evidence suggests that local authorities are more strategic and discretionary when issuing bonds, they avoid deficits gimmicks to respond to creditors' scrutiny. Financial reports considered to be essential for citizens, regulators and researchers to monitor the municipality conduct (Beck, 2018). In the next sections, we present the case study, the methodology and data, our findings and finally the conclusions.[1]

### 1.1. Changes in the Local Authorities in Israel

As in many other countries, the local authorities in Israel are involved in rapidly changing processes with regard to their activities and their relationship with the central government. Public finance in Israel requires the involvement of both the national government and the local authority. The handling of financial affairs by the latter and urban corporations has a strong influence in this field.

The municipalities manage annual budgets of 50 billion NIS (new Israeli shekels, worth about 28 American cents each), which comprise about 10% of the gross national product of the state (based on annual averages). They also employ about 100,000 workers, in addition to thousands of contractual workers (Zilberstein, 2007). Most of the operational failures of the local municipalities result from their dependence on orders from the central government and its approval of their actions (Sarig, 2008).

In recent decades the central government has increasingly shifted responsibility for many functions to the municipalities but has not provided them with the proper sources of funding to take on these roles (Razin, 2003). Indeed, the government often fails to abide by the agreements to finance national services (Sarig, 2008). Ben Bassat and Dahan (2009) claim that since 1992, when a law requiring the reduction of budgetary deficits at the central governmental level was passed, the authorities at the national level have been tempted to comply with the law by foisting their deficits on the local authorities in an effort to appear to have complied with the law. According to Derry and Schwartz (1991), clerks in the Treasury knowingly adopt a policy of under-budgeting the local authorities, on the assumption that in the end the municipalities will receive additional funding, based in large part on their dependence on governmental offices (Dery & Schwartz-Milner 1994). The situation is exacerbated by the fact that central governmental grants are not sufficiently transparent, the exact amount of these grants is usually unknown, even after the beginning of the new annual budget (Razin, 2003). As a result, the local authorities have to become magicians to ensure that they have enough money to run the municipalities (Sarig, 2008).

[1]This project is a part of a larger research about municipal financial management in Israel, which is my dissertation project at Ben Gurion University of the Negev in Israel.

Local financial crises are also the result of local managerial failures (Ben-Elia, 1999; Ben Bassat & Dahan, 2009). Responsibility for failure is always attributed to local municipality officers and elected officials (Bustin, 2008). Local municipal leaders have taken advantage of the hasty decentralization process and undertaken almost unlimited local projects, developed municipal business, increased the authorities' activities, and expanded the authorities' range of responsibility, volume of activity and monetary turnover (Ben-Elia, 1999). Objective needs and a sharp change in their position led local leaders to see the local authority as omnipotent. For them, the municipality became a miniature state, and they saw themselves as being responsible for local development and civic welfare. Today, local authorities are tempted to provide expensive services, beyond what local residents would be willing to pay for out of their own pockets (Ben Bassat & Dahan, 2009). In addition, elected officers in the municipalities tend to make decisions on a political basis, rather than on the strength of their managerial talents (Heifetz et al., 1996). The head of the municipality is also involved in carrying out these decisions, thus exposing politicians to additional pressures that increase the chances of financial crisis (Ben Bassat & Dahan, 2009). The municipal management may operate without integrity and proper managerial procedures, which can have disastrous effects for the services vital to the public (Kaleb, 2008). In fact, such occurrences are not unique to Israel. For example, in the beginning of the 1980s, Britain was in deep financial debt, which was the main motivation for reforms in local municipalities. However, there was no consideration as to whether they derived from the national government or were initiated by the local authorities themselves.

The local authorities have limited and weak control over their own functioning (Kalchheim, 1987), often engaging in actions for which they are unaccountable to the central government or even to the public (Razin, 2003). The dramatic turning point in the condition of the municipalities came toward the end of the 1980s. Over half of their budgets came from designated and undesignated funding (BoruKhov, 2004). In 1986 within the framework of the plan to stabilize the economy and curb inflation, the decision was made to drastically increase property taxes, which are collected by the local municipalities. By the end of the 1980s, property taxes actually rose by 90% (Hazan & Razin, 2006). Municipal incomes increased and governmental grants decreased, reducing their role in local budgets. These changes forced the local authorities to become more creative about finding new sources of income. Many of them looked to development to attract new residents. Such competition among the municipalities led to plans to develop real estate for businesses (BoruKhov, 2004).

These changes also brought about an increase in the budgetary gaps among the municipalities. The government began to initiate recovery plans for weak local authorities to help them out of debt and achieve a lasting budgetary balance. Tens of plans were introduced, but often the municipalities did not meet the plans' original goals, and the requirement to achieve a balanced budget to which they were obligated was deferred (BoruKhov, 2004). In 1997, seeing that the plans were not achieving their goals, the central governmental made a sharp change in policy. In a tough love approach, it cut off automatic assistance to municipalities in debt, driving them to the brink of bankruptcy (Ben-Elia, 1999). The policy of monetary grants to cover debts became stricter, so that balancing grants from the Ministry of the Interior became far fewer in number. For some municipalities, the smaller balancing grant was reduced by 90%, often during the same year. This adjustment was carried out despite the harsh difficulties that often befell the local government as a result of this one-sided financial decision (Ben-Elia, 1999).

During 2004, some of the municipalities were unable to pay the salaries of close to 20,000 employees for many months. In addition, the bank accounts of the municipalities in debt were foreclosed in favor of the major creditors, the banks themselves. As a solution, in 2004 the central government passed Amendment 31 to the budgetary foundations, known locally as “the law bypassing the banks.” This amendment cancelled the liens of the banks on the municipalities’ accounts and prevented the banks and creditors from touching these accounts for a period of six months, thus enabling the municipalities to postpone payments for a limited period of time without penalties. The results of this step had far-reaching consequences for the banking system and the relationship between the municipalities and the banks, despite the fact that the amendment was repealed after a short time. The loans given to the municipalities at the time by the banks were on the condition that the accounts would be the guarantee for the loans.

As a key player in the financial system, the banks were the only source of credit for the local authorities. As a result of the amendment, a serious credit crisis arose, which hurt the ability of the municipalities to obtain loans from the banking system, even at high costs (Zelekha et al., 2006).

Despite all of its efforts, the Ministry of the Interior was unable to wipe out or significantly reduce the debts of the local municipalities. Findings show that the actions taken during the years 2004-2007 were insufficient to bring about true reform to a large number of municipalities in crisis. The average annual debt between 1994 and 2005 stood at 1228 million NIS. In 2005 the incremental debt of the local municipalities rose to 7000 million NIS (CBS, 1995-2005). During the years 2001-2006 the situation of the local authorities worsened, and a good number were in economic crisis (Ben Bassat & Dahan, 2009). By 2006, 13 local authorities faced total systemic collapse. Many others had budgetary debts that led to managerial and functional difficulties, and forced a reduction in municipal services to residents (Zilbershein, 2007).

### 1.2. Municipal Bonds in Israel

The issuing of municipal bonds is widely accepted throughout the world (Amrani, 2006), but in Israel this is a new approach to funding. The sale of such bonds broke the traditional stranglehold that the banks had on the financing of municipalities, allowing Israel to join other developed markets where local municipalities issue various types of bonds.

One of the main reasons why the municipalities in Israel had not sold bonds before was the centralized control that the national treasury exerted over the local authorities. Until the mid-1980s this policy was executed by a de-facto nationalization of the capital market. However, changes in Israel's capital market, the implementation of reforms in the pension funds, and the government's exit from this market resulted in a significant reduction in the government's recruiting of funds, increasing the need for long-term investments. The Treasury encouraged the issuance of municipal bonds, thus ameliorating the municipalities' financial crisis, and encouraging their economic and managerial independence (Zelekha et al., 2006). Some scholars regard the bond issue as the natural development of growth in developing countries (Heifetz et al., 1996). Others, however, claim that the reason for developing a municipal bond market was to vary the sources of income available to the municipalities and raise the level of competition (Zelekha et al., 2006). By selling bonds, the local authorities wanted to find alternate sources of income and raise funds at a lower price than that offered by the banks. In other words, they sought long-term sources of credit at lower interest rates, which would reduce their financial expenses and loan payments. In this "exchange of expensive money for cheap money," the municipalities also wanted to reduce the extent of collateral necessary for bank loans (Amrani, 2006).

Despite the many advantages of selling bonds, this approach is unavailable to some of Israel's municipalities that do not meet the necessary minimal criteria. (Heifetz et al., 1996).

Municipal bonds were first issued in Israel in 2005. Among the many local authorities in Israel, only four cities dared to try this new initiative and issued municipal bonds: Ramla, Ra'anana, Yehud-Monson and Eilat. The first to issue municipal bonds, with the approval of the Ministry of the Interior and the Department of the Treasury, was Ramla in November 2005. This became the model, and its success spurred the interest of many local authorities that wanted to investigate this possibility (Amrani, 2006).

## 2. Methodology and Data

This study examined four municipalities in Israel-Ramla, Ra'anana, Yehud-Monson and Eilat–that issued municipal bonds between 2005 and 2007.

Ramla is a city in the center of the country with 86,000 residents. The city has a relatively low socio-economic level. The average income in less than the national average, and many of the city's residents are on welfare or have fixed-income pensions. The city of Ramla is rated at socio-economic level 4 (10 being the highest grade) and graded 100 out of 210 cities and municipalities in Israel (CBS, Central Bureau of Statistics).

Yehud-Monson, situated in the center of the country with 30,000 residents, enjoys relatively strong socio-economic levels. The average income for the city's residents is high, and unemployment is low. According to the CBS, the city of Yehud-Monson is rated at socio-economic level 7. In November 2003, as part of the process of unification of local authorities and the law creating "a program for the rehabilitation of Israel's economy" that recognized the advantages of size, the city of Yehud and the regional council of Neve Ephraim became one municipality. Despite the fact that the city has comparatively strong socio-economic characteristics and is situated in the center of the country, Yehud was in economic difficulties, which increased when the municipalities were joined. The financial situation before and after the unification made it impossible to pay wages to the municipality's workers for a period of eight months and delayed payments to other entities as well.

Ra'anana is a centrally located city with 81,000 residents. Ra'anana is one of the strongest local authorities in Israel, rated at level 1, and is among 15 - 20 stable and autonomous municipalities that do not rely on governmental grants. These municipalities enjoy high public regard and comprise the core of Israel's municipal sector. Local residents enjoy high incomes, low unemployment, and a thriving educational system, which receives an especially high budget. According to the CBS, the city of Ra'anana is graded at socio-economic level 8.

Eilat is a city with 60,000 residents located in the periphery of the country and geographically very distant from the center of the country, about 350 km. from Tel Aviv. It is the leading tourist city in Israel, with tourism being the main source of employment for the city. The city's economy is characterized as moderate, and its socio-economic grade is 5. It is rated 135 out of 210 municipalities and has a medium to low financial status (CBS).

This study examines the economic state of each of these cities from 2004 to 2009 using budget-dependent data including the amount of debt, maintenance of a balanced budget, economic independence, the burden of loans, salary costs and actuarial obligations. This examination reflects the municipality's economic policy and changes during these years. The time period we chose encompasses the two years prior to the bond issues, data indicating past monetary management and four years after the bond issue, data indicating whether the sale of the bonds brought about a change in the management of the municipality. We obtained the data from the annual financial statements audited by the Ministry of the Interior, local reports, annual follow-up reports by companies rating the municipalities, and other general rating reports.

A second comparison examined the trends in the issuing municipalities and their economic conduct relative to the average of other municipalities. The comparison was made based on changes in budgets, budget balances, self-initiated income, tax collection, and salary costs. Such comparisons can attest to the proper use of the money raised through the sale of the bonds and the intention to promote development in the municipality by the proper implementation of income from bonds.

## 3. Results

Did the sale of the bonds improve the economic and managerial condition of the municipality or did it exacerbate the city's problems? To answer that question, we used budget-dependent indexes and assessments of managerial efficiency.

### 3.1. Ramla

The city of Ramla issued general obligation municipal bonds backed by the income from property taxes. It sold 140 million NIS worth of bonds rated A+ ("S & P Maalot" rating company) at an annual interest rate of 5.9% for a period of 15 years with the principal and interest linked to the cost of living index. The bonds were issued to institutional investors in the stock market through a designated company, SPC. The purpose of the bond issue was to replace the city's bank debts, which, in September 2005, came to 92 million NIS. Despite Ramla's difficult financial situation, no accountant was appointed to help the city, and an efficiency program to cut expenses and use special government grants proved unsuccessful. Ramla had difficulty getting bank loans, so that at the height of the city's financial crisis, the Ministry of the Interior approved a bond issue in January 2005. As Table 1 indicates, since 2006, Ramla has shown significant improvement in its financial and logistical operation. However, it failed to maintain a budgetary balance and in 2018 returned to the similar scale of deficits and loans as in 2006 prior to the issue date and similar outstanding loan.

Since 2006, the budgetary deficit has become a surplus, and the accumulated debt has been reduced. The city has shown a moderate and balanced budgetary increase, retaining a budgetary surplus of 0.5% each year. This municipality's independence lies in its ability to conduct local functions based on internal sources of income rather than infusions of money from the central government. Since 2004, the city's income has risen from 174 million NIS in 2004, which was 55.41% of the budget, to 62% in 2009.

Ramla's debt load is comparatively low, at an average of 48% of the total operational income for 2009. Wage expenses are relatively high and therefore limit the operational flexibility of the municipality. The actuarial obligations of Ramla to its employees who have especially high budget pensions stand at 180% of the operational income, thereby reducing the financial flexibility of the city. Current pension outlays are about 7.5% of the city's budget, weighing down its ability to function. The repayment of credit debts and government loans comprised 8.28% of the budget in 2004. These outlays, beyond the city's budget, reduced its managerial and functional flexibility.

With the sale of the bonds, Ramla's financing expenses were significantly reduced. The debt service ratio in 2009 stood at 5.77%, as opposed to 2004, when it was 9.51%. This change came about because of the spreading out of the debt over a relatively long period at interest rates lower than those offered by the banking system in 2005.

**Table 1.** Ramla.

| City of Ramla (000's NIS) | Average 2004-2005 | Average 2006-2009 |
|---|---|---|
| Income | 321,677 | 309,809 |
| Budget | 345,929 | 308,087 |
| Budget Surplus/Deficit | −24,252 | 1722 |
| Running Budget Deficit | −7.27% | 0.56% |
| Independent Income | 213,793 | 196,958 |
| Independent Budgetary Income | 61.27% | 63.96% |
| Property Tax | 115,820 | 170,062 |
| Collection Rate of Property Tax | 85.05% | 82.34% |
| Budgetary Property Tax | 34.07% | 54.88% |
| Loan Repayments | 23,108 | 16,575 |
| Budgetary Loan Repayments | 6.81% | 5.38% |
| Financial Expenses | 4238 | 2825 |
| Budgetary Financial Expenses | 1.23% | 0.93% |
| Wage Expenses | 91,392 | 104,708 |
| Budgetary Wage Expenses | 26.55% | 33.98% |
| Pension Payments | 19,368 | 22,270 |
| Budgetary Pension Payments | 5.58% | 7.24% |
| **Accum. Surplus/Deficit Reg. Budget** | −83,846 | −54,007 |
| Accumulated Surplux/Deficit | −88,455 | −58,616 |
| Accum. Surplus/Deficit Budget | −26.21% | −19.15% |
| Loan Burden | 129,022 | 152,724 |
| Budgetary Loan Burden | 36.78% | 49.70% |

### 3.2. Yehud-Monson

In August of 2006, the Yehud-Monson municipality issued municipal bonds based on Ramla's model. Through SPC, Yehud-Monson sold 100 million NIS worth of bonds rated A+[2] ("S & P Maalot" rating company) at an annual interest rate of 5.8%. The purpose of the loan was to recycle bank loans and cover debts to suppliers and creditors. The city was unable to maintain the program of recuperation in 2004, and in May 2006 an additional program was constructed, based on the issuance of municipal bonds.

As Table 2 illustrates, after the sale of the bonds, the accumulated debt declined, the budget deficit was reduced, and by 2009 the city ended the year with a surplus of 0.32% of the budget. Although the municipality is maintaining a balanced budget, in recent years this has been a decrease in the budget prompted by the lack of growth in income and investments. This budget cut has also led to the lack of development of municipal services for residents. The city's ratio of

[2]In June 2010 the municipality's rating was raised to AA.

Table 2. Yehud.

| City of Yehud (000's NIS) | Average 2004-2005 | Average 2006-2009 |
|---|---|---|
| Income | 122,733 | 152,816 |
| Budget | 141,698 | 152,856 |
| Budget Surplus/Deficit | −18,965 | −40 |
| Running Budget Deficit | −13.38% | −0.02% |
| Independent Income | 89,824 | 121,792 |
| Independent Budgetary Income | 63.37% | 79.81% |
| Property Tax | 56,156 | 79,067 |
| Collection Rate of Property Tax | 75.26% | 83.81% |
| Budgetary Property Tax | 39.61% | 51.91% |
| Loan Repayments | 13,497 | 12,197 |
| Budgetary Loan Repayments | 9.53% | 8.00% |
| Financial Expenses | 9967 | 4484 |
| Budgetary Financial Expenses | 7.02% | 2.90% |
| Wage Expenses | 46,352 | 45,170 |
| Budgetary Wage Expenses | 32.72% | 29.64% |
| Pension Payments | 9716 | 11,753 |
| Budgetary Pension Payments | 6.86% | 7.72% |
| **Accum. Surplus/Deficit Reg. Budget** | −104,697 | −14,967 |
| Accumulated Surplux/Deficit | −119,728 | −24,134 |
| Accum. Surplus/Deficit Budget | −84.46% | −15.57% |
| Loan Burden | −64,353 | −128,539 |
| Budgetary Loan Burden | −45.46% | −84.12% |

independent income to its total budget grew significantly and points to the city's strong independence. In recent years, there has been a steady rise in income from municipal property taxes. This increase resulted from a property survey performed by the municipality and improvements in enforcement. The burden of the bond loans in 2004 was about 50% of the budget, and today stands at 121.6 million NIS, 85% of the city's budget.

Following the layoff of 110 people over a period of three years, the city of Yehud today employs about 240 workers. Wages account for a relatively small portion of the city's expenses, allowing more flexibility in municipal logistics. Actuarial commitments to employees with budget pensions are especially high, amounting to 269% of the municipal income for 2009. In 2004, pension expenses stood at 6.91% of the budget. Over the years they have risen and in 2009 were 9.06%. The repayment of bonds in 2004 ran to 10.12%. After the bond issue, it declined to 6.69% in 2006, but grew again to 9.27% of the city's budget. This high rate limits the flexibility of management. Over the years, the municipality's financing expenses dropped considerably, and in 2009 were down to 1.09%. The issuance of bonds strengthened the financial structure of the city, allowing it to come to a financial compromise with its creditors and rescuing the city from a serious financial crisis. Yehud is now in a better position to move in the direction of recovery, growth, and financial stability

For the past four years, the municipality has shown improved budgetary performance based on responsible financial management, relatively higher socio-economic status, and proper financial liquidity. However, the municipality still carries high financial and other obligations, which account for 91.5% of its budget, despite the reduction of the nominal debt since 2006. From August 2003 until August 2008, the municipality operated under a financial manager, who left after the city's financial situation improved. Yehud-Monsson maintains a balanced budget without deficits and with a very low outstanding loan.

### 3.3. Ra'anana

In July 2006, the city of Ra'anana issued municipal bonds rated AA ("S & P Maalot" rating company)[3] for the sum of 150 million NIS at an annual interest rate of 5% with both the principal and interest linked to the cost of living index. Half of this loan was intended to repay existing bank loans. The other half was earmarked for new investments in non-recurring budgetary programs for improvements in infrastructure and municipal functions.

As Table 3 shows, since 2004 the city's budget has risen. These budgets reflect the ongoing rise in the city's income and investments. During these years, Ra'anana stayed within its budget and even had a surplus. The ratio of independent income to the city's budget points to a strongly independent municipality. Over the years, the mix of income from property taxes changed. Money from industry and commerce grew, while residential income dropped. Taxes on water and property were very high, above 90%. Ra'anana's loan burden is relatively high. Actuarial obligations to Ra'anana's employees with budget-based pensions were estimated at 250 million NIS for the end of December 2004, a budgetary expense of 2% - 2.3%. Credit payments were lower, and the city's financing expenses also declined. According to the Maalot rating, Ra'anana profits from a wide array of businesses and has a mixed income stream from private taxpayers and businesses. The city's budgetary execution during the years 2006-2009 was good, with a suitable operational surplus. The city is very successful in collecting property taxes, and the income from this source is quite stable. Property taxes comprise 40% of its operating income, with additional independent sources of income also at 40%. This broad base of independent income reduces the city's dependence on infusions of money from the central government and strengthens the financial profile of the municipality. At the end of 2009, the city's burden of debt as well as its financial obligations was at 37.2%, which is relatively low. The Municipality of Raanana has maintained a balanced budget until 2017.

[3]In 2009 the rating was raised to AA+, and in 2010 Standard & Poor's Maalot raised the rating to AAA, because the city's economic and managerial risks were very low compared to other Israeli municipalities.

**Table 3.** Ra'anana.

| City of Ra'anana (000's NIS) | Average 2004-2005 | Average 2006-2009 |
|---|---|---|
| Income | 429,594 | 521,600 |
| Budget | 428,329 | 520,994 |
| Budget Surplus/Deficit | 1265 | 606 |
| Running Budget Deficit | 0.30% | 0.11% |
| Independent Income | 349,764 | 414,334 |
| Independent Budgetary Income | 81.60% | 79.56% |
| Property Tax | 188,413 | 213,593 |
| Collection Rate of Property Tax | 92.63% | 95.26% |
| Budgetary Property Tax | 44.02% | 40.95% |
| Loan Repayments | 34,029 | 29,426 |
| Budgetary Loan Repayments | 7.85% | 5.63% |
| Financial Expenses | 2019 | 2313 |
| Budgetary Financial Expenses | 0.48% | 0.45% |
| Wage Expenses | 187,859 | 222,336 |
| Budgetary Wage Expenses | 43.97% | 42.68% |
| Pension Payments | 9585 | 11,481 |
| Budgetary Pension Payments | 2.24% | 2.20% |
| **Accum. Surplus/Deficit Reg. Budget** | 1265 | 606 |
| Accumulated Surplux/Deficit | −23,898 | 13,468 |
| Accum. Surplus/Deficit Budget | −4.91% | 2.42% |
| Loan Burden | −162,512 | −203,325 |
| Budgetary Loan Burden | −38.15% | −39.06% |

## 3.4. Eilat

Based on the Ramla model, in October 2006, the city of Eilat issued municipal bonds rated at AA3 ("Midroog" rating company) in the sum of 80 million NIS at an annual interest rate of 5.7%, through SPC. The purpose of the bond issue was to renew bank loans and to cover debts to suppliers and creditors.

As Table 4 indicates, the city's budget rose over the years, although not in a stable manner. The tendency to reduce the running deficit, which began in 2003, reached its peak in 2007, when the municipality ended the year with an excess in the budget of 1.2 million NIS. However, this achievement did not last, and the debt rose again to 3.68% by 2009. The accumulated deficit has been reduced, the rate of independent income has grown, and the collection of property taxes has risen. The increase in tax collection can be explained by the increase in enforcement. The municipality itself began collecting the taxes. It hired sub-contractors to deal with foreclosures, investigations, and legal functions. The city also conducted a comprehensive survey of properties to update property assessments

Table 4. Eilat.

| City of Eilat (000's NIS) | Average 2004-2005 | Average 2006-2009 |
|---|---|---|
| Income | 358,292 | 412,741 |
| Budget | 362,148 | 420,751 |
| Budget Surplus/Deficit | −3856 | −8010 |
| Running Budget Deficit | −0.91% | −1.99% |
| Independent Income | 262,347 | 318,163 |
| Independent Budgetary Income | 70.24% | 75.36% |
| Property Tax | 156,013 | 206,063 |
| Collection Rate of Property Tax | 79.59% | 88.03% |
| Budgetary Property Tax | 41.78% | 49.58% |
| Loan Repayments | 23,134 | 26,559 |
| Budgetary Loan Repayments | 6.21% | 6.45% |
| Financial Expenses | 6376 | 5982 |
| Budgetary Financial Expenses | 1.71% | 1.43% |
| Wage Expenses | 132,304 | 140,854 |
| Budgetary Wage Expenses | 35.45% | 33.78% |
| Pension Payments | 23,499 | 23,755 |
| Budgetary Pension Payments | 6.51% | 5.68% |
| **Accum. Surplus/Deficit Reg. Budget** | −138,620 | −57,258 |
| Accumulated Surplux/Deficit | −160,606 | −67,630 |
| Accum. Surplus/Deficit Budget | −44.66% | −15.91% |
| Loan Burden | −188,506 | −231,515 |
| Budgetary Loan Burden | −52.20% | −55.34% |

resulting from additions to buildings and changes in classification such as residential areas to business zones. Property taxes climbed from 40% to 61% of the budget.

The burden of the bond issue and long-term loans stood at 187 million NIS in 2005, and increased to 240 million NIS by 2009. Wage expenses were not especially high. Payments for budgetary pensions came to 23.5 million NIS in 2009, which were about 6% of the city's budget. This expense was a heavy burden and reduced the city's ability to be flexible in its management or make improvements in it. The ratio of debt service stood at 12% in 2008 and 9.94% in 2009, the highest rate since the bond issue (7.1% at the end of 2005). Despite the increased long-term loans and lower interest rates that came about after the sale of the bonds, the financial situation did not improve. The irregular budgets over the years led to a budget deficit of 22 million NIS, and the city ended 2009 with an accumulated debt of 24.4 million NIS. The findings in the Ministry of the Interior's report for 2007 showed many managerial failings, a fact that increased managerial and functional risks. For example, the report noted that the city's development budget was not utilized properly for the purpose for which it was intended. The collateral bases for the bond issue are the city's strong residential neighborhoods and institutions that provide strong and steady property taxes, coming to an average of 92% over the years. There is an advantage to the power of bonds as a safety measure, but they can also weaken the municipality's income security, because they are the city's steady income. The Municipality of Eilat failed to maintain a budgetary balance and in 2018 returned to the similar scale of deficits and loans as in 2006 prior to the issue date and similar loans.

### 3.5. Changes Resulting from the Bond Sales Comparison of the Municipalities

Table 5 compares the four cities with regard to several financial indicators, illustrating the changes that took place in the cities before and after the sale of the bonds.

As Table 5 shows, all of the municipalities issuing bonds had an average growth in their budgets of 4% per year during the period of the bond issues. The budgets increased more gradually than the norm but remained balanced. Ra'anana's tax base grew, and the budget increased by 34.5% from 2004 through 2009. In contrast, Eilat was unable to maintain a balanced budget during these years but increased its budget despite its deficits.

Table 5. Changes resulting from the bond sales, comparison of the municipalities.

| | Average of All Local Municipalities | | |
|---|---|---|---|
| | 2004-2005 before the issuance | 2006-2009 after the issuance | Rate of change |
| Income | 41,255,842 | 47,837,845 | 15.95% |
| Budget | 41,761,174 | 48,030,954 | 15.01% |
| Surplus/Deficit Budget | −505,332 | −193,109 | −61.79% |
| Running Debt Budget | −1.24% | −0.38% | −69.11% |
| Independent Income | 22,277,686 | 26,018,014 | 16.79% |
| Independent Income Budget | 53.33% | 54.16% | 1.56% |
| Property Tax | 13,080,002 | 15,719,338 | 20.18% |
| Property Tax Budget | 31.32% | 32.70% | 4.41% |
| Loans Repayment | 2,756,214 | 2,790,401 | 1.24% |
| Loans Repayment Budget | 6.61% | 5.83% | −11.84% |
| Finance Expenses | 371,550 | 436,297 | 17.43% |
| Finance Exp. Budget | 0.89% | 0.90% | 1.74% |
| Wage Expenses | 13,086,226 | 14,008,106 | 7.04% |
| Wage Expense Budget | 31.35% | 29.18% | −6.93% |
| Accum. Surplus Deficit | −7,459,408 | −5,073,997 | −31.98% |

### 3.6. Comparison of Profitability of Bond Issues as Opposed to Bank Loans

In order to compare the costs of the option of issuing bonds to the option of bank loans, we conducted a simulation. Note that such a simulation was feasible because the bond issues included a special condition that permitted early redemption.

#### 3.6.1. Ramla's Bond Issue

The city of Ramla borrowed 140 million NIS at an annual linked interest rate of 5.9%. The loan was spread over a period of 15 years, with fixed quarterly returns of 3.5 million NIS. Total interest payments on the loan came to 70 million NIS. The loan also entailed additional expenses. A designated company was set up, and advisors and professional people were hired. There were also early repayment charges that the municipality paid to the banks to repay their loans before their due date. These charges came to 2.6 million NIS. Thus, in the wake of the sale of the bonds, the total cost for the loans was 72.8 million NIS.

In calculating the internal rate of return on the bonds, the interest rate on the date of issue was actually 6.2029%, a higher rate than the bond issue rate. A comparison of the bond issue alternative as opposed to a bank loan reveals that after the first year, the cost of the bond option was 64.8 million NIS. In making this comparison, we considered the option of a bank loan for 14 years based on 56 payments[4] at an interest rate of 5.3%[5]. Total interest on the loan came to 56.6 million NIS. The difference between the two alternatives after one year came to 8,225,026 NIS. In the same manner, the differences between the alternatives, after two, three, and four years, based on the same assumptions, revealed clear results. After two years, there was a difference of 7,509,000 NIS, after three years 22,400,000 NIS, and after four years 17,316,000 NIS. Given this analysis, we can conclude that during the period we investigated, the sale of the bonds was more expensive than the alternative of a bank loan. Therefore, the bond issue was actually not profitable for Ramla. It would be advisable for Ramla to choose an early redemption of the bonds.

#### 3.6.2. Yehud's Bond Issue

The city of Yehud borrowed 100 million NIS at an annual index-linked interest rate of 5.8%. This loan was spread over 15 years, with fixed quarterly payments amounting to 2.5 million NIS per quarter. Total interest paid on the loan was 49.2 million NIS. Additional costs for the loan came to 51 million NIS. A calculation of the rate of internal yield from the bonds finds that the real interest rate was 6.0916%.

A comparison of the bond issue alternative as opposed to a bank loan reveals that after the first year, the cost of the bond option was 48 million NIS. The op-

[4]The loan is paid quarterly with effective quarterly interest in order to compare the timing of payments over different periods of time.

[5]The interest for calculating the loan was 5.3%, the accepted bank rate based on the prime interest rate, which is significantly higher than bond interest rates.

tion of a bank loan for 14 years with 56 payments at 5% interest would have cost 37.9 million NIS. The calculated difference between the two alternatives, after one year, came to 10,165,000 NIS.

Similarly, the differences between the two options after two years would be 10,762,000 NIS, after three years 17,700,000 NIS, and after four years, the difference would come to 12,982,000 NIS. The bond issue was more costly every year than a bank loan. Here again, as with Ramla, there was no economic advantage for Yehud to issue bonds.

#### 3.6.3. Ra'anana's Bond Issue

The city of Ra'anana borrowed 150 million NIS at an annual index-linked interest rate of 5.00%. The loan was spread over 15 years with quarterly repayments of 3.5 million NIS. Total interest on the loan came to 62.8 million NIS, and additional costs were 662,000 NIS. The total cost of the bond issue came to 63.48 million NIS. In calculating the internal yield of the bonds, interest at the time of issue was 5.0692%. A comparison of the bond issue alternative as opposed to a bank loan reveals that after the first year, the cost of the bond option was 56.2 million NIS. The bank loan option of 14 years with 56 payments at interest rate of 4.65% would have cost 52.38 million NIS. The calculated difference between the two alternatives after one year comes to 3,865,000 NIS, after two years 15,556,000 NIS, after three years 13,505,000 NIS, and after four years 10,600,000 NIS. When weighing the alternatives, the bond issue was more costly annually for the years examined than a bank loan. Therefore, as with Ramla, it was apparently preferable to redeem the bonds each year.

#### 3.6.4. Eilat's Bond Issue

The city of Eilat borrowed 80 million NIS at an annual index-linked interest rate of 5.7%. The loan was spread over a period of 15 years with quarterly repayments of 2 million NIS. Total interest paid came to 38.6 million NIS. Additional costs were 815,000 NIS. The total cost of the bond issue came to 39.4 million NIS. Calculation of the internal yield of the bond issue brings the interest rate on the day of issue to 5.864%.

A comparison of the bond issue alternative as opposed to a bank loan reveals that after the first year, the cost of the bond option was 35 million NIS. For the bank option, at 14 years, 56 payments, and an interest rate of 4.9%, the interest on the loan would have come to 29.6 million NIS. After one year, the difference between the two options comes to 5,400,000 NIS. In the same manner, after two years the calculated difference would be 12,750,000 NIS, and after three years 9,682,000 NIS. Based on calculated alternatives, the bond issue was more costly for every year examined, as compared with a bank loan. Therefore, it was apparently preferable to redeem the bonds each year.

In a discussion about the bond issue, the assistant director general of one bank noted: "The city of Ra'anana is sought after, it being one of the strong municipalities, this market segment being strongly competitive among the banks, which strive to offer credit at excellent prices, bring down financing rates below the capital market." He ascribed Ra'anana's bond issue not to its price as opposed to the capital market, but rather to other reasons, suggesting political pressure as the reason behind the bond issue. A well-known figure in Tel Aviv strengthened this idea, saying, "… the decision to issue bonds resulted from considerations which were not at all financial. The city of Ra'anana is in a position to bargain with the banks, so that it is possible that there was no true financial justification." The assistant director general of the bank added, "In the second group of municipalities, those which several years ago were unable to raise capital from banks due to their financial situation, the heavy burden of loans made it impossible to grant them additional credit, even though the allocations for bad debts were at their lowest. Municipalities such as Ramla and Yehud should have found more creative ways to raise capital and thus avoid the issue of bonds, which became inevitable. This opinion can support claims by the treasurers of municipalities issuing bonds, that at that time they were unsuccessful in raising funds from the banks, and had no option other than the bond issue, leaving the financial cost aside. The question of early repayment did not arise, and none of the municipalities is considering this, despite the fact that early redemption of the bonds, as per the special conditions at the time of issuance, can enable municipalities to reduce their financial costs."

In order to clarify the above conclusions, we ran an additional simulation for each of the municipalities to examine the option of repaying the bonds in May 2009 and replacing them with a bank loan instead. The main reason for the higher cost of the bonds each year has been the steady decline in interest rates in the past years. Interest rates are based on the prime interest rate so lower rates lead to lower levels of funding. Assuming that interest ranges between 3% and 3.5%, based on the stability and functioning of the municipality, exchanging the bonds for a bank loan at 3.5% interest would have saved the city of Ramla about 21.65 million NIS. In 2016, the Municipality of Ramla repaid 50% of the debt value in early repayment contrary to a loan from a lower-interest investment house. Using the same assumption of a 3.5% interest rate, the city of Yehud would have saved 16.35 million NIS. Assuming an interest rate of 3.0%, Ra'anana would have saved 18.6 million NIS. In 2016, the Municipality of Raanana repaid 50% of the debt value in early repayment contrary to a loan from a lower-interest investment house. For the city of Eilat, a bank loan at 3.5% would have saved the city 12.75 million NIS. In July 2017, the Municipality of Eilat purchased bonds from a bond holder worth NIS 20 million contrary to the bank loan and reduced its debt. From the results of the simulation, we can conclude that it would have been worthwhile to call the bonds early, exchanging them for bank loans at the prime rates listed above, even if the municipalities had to pay a fine for early repayment of the bond issue.

## 4. Conclusion

This article sought to examine the effectiveness of municipal bond sales and their influence on the financial and operational functions of the local municipalities issuing such bonds. Such sales have a direct impact on the financial expenses of the municipalities, but also have an indirect effect on their operational efficiency.

The bond issue enabled the reduction of loan repayments and a better spread of the municipalities' long-term debt, resulting in a drop in their financial expenses. The municipalities were able to measurably increase their budgets while maintaining a balanced budget and saw a significant improvement in their financial performance. The bond issue provided an impetus for improving financial management and performance. Each municipality had its own reasons for deciding to seek funding by issuing bonds. For Ramla and Yehud, the bond issue was a means of salvation, because neither city could get a bank loan or repay its current loans. Both Ra'anana and Eilat had the possible alternative of a bank loan, despite the fact that Ra'anana was offered better terms, while Eilat faced great difficulties.

Interestingly enough, from a purely economic viewpoint, the bond issue was not profitable for the municipalities. The costs involved outweighed the financial benefits. The decision to issue bonds costs the municipalities a great deal of money. However, we should not ignore the fact that if interest rates were trending higher rather than lower, the conclusions of this study would have been different.

Nevertheless, based on our analysis of the municipalities' performance and considering the change in the financial balance of power in the Israeli stock market, the sale of municipal bonds seems worthwhile as an efficient financing tool. It increased competition in the market, improving the bargaining power of the municipalities vis-à-vis money lenders. Before the bond issues, they negotiated with the bank from an inferior position because both knew that there were no other options. However, immediately following the bond issues, the banks were more approachable, and interest rates dropped to a realistic price. Indeed, the sale of the bonds even benefitted those municipalities that did not issue bonds themselves, because the threat to the banks that they might do so reduced the interest rates on their bank loans.

This article has shown that the main advantage of a bond issue is the long-term improvement in the managerial and financial conduct of the municipalities. These improvements were evident in the long term for Yehud, but for a shorter period for Eilat and Ramla. The municipalities issuing bonds must also be more transparent about how they use their money because of the regulatory requirement to provide reports to the capital market. Such transparency is particularly important with regard to the awarding of tenders and contracts to providers of services. These reports safeguard the city's residents against failures caused by the deterioration in human resources in the municipality, resulting in leaders and directors who lack the necessary management and political skills (Mellahi & Wilkinson, 2004).

Nevertheless, the bond issues in the four municipalities did not become a fruitful municipal bond market as had been predicted, and the centralizing function of the banking system remained as it had been. It may be that in order to create a fruitful market, the bonds should be negotiable and be made available to the general investing public, rather than remaining with institutional investors. The public, especially during these tumultuous days, seeks long-term, low-risk investments, the type of investments that have governmental rather than corporate backing.

This study is the first to examine four cases of the sale of municipal bonds in Israel, a country that is undergoing major changes in its financial markets. These changes are the result of relationships between the local authority and the central authority, and between the local authorities and the banks. The rapid pace of these changes makes drawing conclusions difficult at this point. Future research into this area should help clarify the situation.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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