Fiscal Distress Indicators:
An assessment of current Michigan law and development of a new "early-warning" scale for Michigan localities

Submitted to the Michigan Department of Treasury
September 30, 2002

Institute for Public Policy and Social Research
at Michigan State University

Robert Kleine
Philip Kloha
Carol S. Weissert

MICHIGAN STATE
UNIVERSITY

Institute for Public Policy and Social Research • (517) 355-6672

TABLE OF CONTENTS

Appendices:

ABSTRACT

The Michigan Department of Treasury (MDT) contracted with the Institute for Public Policy and Social Research (IPPSR) at Michigan State University to evaluate indicators for identifying local fiscal distress in current Michigan law and to identify possible changes to improve the process currently in place in the state. In January 2002, IPPSR submitted its initial report to the state, delineating measures used in Michigan and in other states, offering a preliminary evaluation of their potential ability to serve as indicators of fiscal distress. This report builds on that initial work by systemically applying a set of criteria to possible indicators and analyzing those indicators using a sample of Michigan local governmental units over 10 years. We develop a 10-point scale made up of the "best" indicators which will provide the State an "early warning" of fiscal distress. We then apply that scale to the sample of Michigan localities over the decade. The scale seems to provide the "early warning" warning desired by the State and includes variables that are now collected or easily collected by the state. Also recommended is public disclosure of the information annually so that citizens, interest groups, the press, and others can also monitor local fiscal well-being.

Introduction

The Michigan Department of Treasury (MDT) asked Michigan State University's Institute for Public Policy and Social Research to evaluate Michigan's current indicators for identifying local government fiscal distress. These indicators are incorporated into two legal statutes, Public Act 72 of 1990 and Public Act 34 of 2001. If the research found that Michigan's current indicators were not providing adequate "early warning" of fiscal distress, then a second set of indicators was to be identified by examining the practices of other states and reviewing the relevant academic and practical literature. A report was delivered to the MDT in January 2002 which contained an initial evaluation of both sets of indicators and outlined a research design for empirically analyzing indicators which could provide early warning of a local unit heading for fiscal distress.

This paper reports the results of our data collection and empirical analysis. In the first two sections, we revisit theoretical perspectives on fiscal distress and outline desirable characteristics for indicators. In the third section we evaluate Michigan's current indicators using these characteristics. Finding Michigan's current indicators deficient, we turn to possible new indicators. Data collection methods are also described in this section. The fifth section introduces a structure for a 10-point scale of fiscal distress. The ability of the 10-point scale to give an "early warning" of fiscal distress is demonstrated in section six by applying it to historical data for a sample of Michigan local governments. This report is concluded with a brief summary and recommendations section. We are in the process of conducting a 50-state survey of other states' laws and procedures in

identifying and responding to local financial emergencies. We will report this information to MDT in a separate report later this Fall.

I. Theoretical Perspectives on Local Government Fiscal Distress

What is Fiscal Distress?

At the outset, it must be clear what is meant by "local government fiscal distress," as there are numerous possible definitions. Fiscal distress could be defined to focus on *short-term* considerations such as a local government's ability to meet its payroll and generally make payments in a timely manner. A *long-term* view of fiscal distress may instead deal with trends in a unit's tax base relative to its expenditures. Alternatively one could define fiscal distress in terms of whether a government unit is sufficiently meeting the *needs* of its community. This definition of distress is difficult to implement, however, because there are widely varying estimates of what a community "needs."

Our definition of fiscal distress does not precisely coincide with any of the definitions given above. Instead our definition of fiscal distress contains elements of the first two definitions since it includes both *long-* and *short-term* considerations. At a very practical level, our definition of fiscal distress roughly coincides with the tables titled "Distressed Local Units and ELB Units" from the annual reports of the Local Audit and Finance Division of the MDT. This list is chiefly comprised of units which have relatively large fund deficits and have required particular State attention in eliminating these deficits.

What Causes Fiscal Distress?

As mentioned in our first report, there are generally four groups of variables that compose models thought to cause fiscal distress. They are population and job market shifts, governmental growth, interest group demands, and poor management (Rubin 1982, Pammer 1990).

The **population and job market shift** explanation focuses on the dynamics of a government unit's tax base. As communities expand in population and taxable value, governments naturally increase their provision of public services. There is little budgetary stress because revenues increase with the expansion of the tax base. If a tax base decreases, however, this can lead to budgetary problems and fiscal distress, especially if the decrease is dramatic. Even slow declines in a unit's tax base are troublesome in that they can be difficult to detect. This is because revenues from a shrinking tax base may appear to still be growing due to inflation. It is only when inflation is considered and the revenues are viewed in real terms that the decline is apparent.

The **governmental growth** explanation characterizes fiscal distress as caused by a public sector too large for its tax base. Also known as the "bureaucratic growth" model, this line of thought was developed by the "public choice" school which focuses on the absence of market signals in the public sector.

The **interest group demands**, or the "political vulnerability" model, suggests that overspending results if the mayor and other local elected officials are vulnerable to special interest groups. Vulnerability exists if the mayor or local elected officials do not have a sufficient coalition to aid in re-election efforts, and therefore spending is increased to win the support of various groups.

Finally, the "**bad" or internal management** model focuses on the decisions of officials and the tools used by them in making these decisions. This approach faults poor accounting methods, inaccurate estimation procedures, poor budgeting practices, and/or inept managers for fiscal crisis.

It is clear that these models are not mutually exclusive. One can easily imagine a unit with a declining tax base and poor management which fails to adjust expenditures to a more appropriate level, leaving the unit with a public sector that is larger than its tax base can support.

II. Developing Indicators of Fiscal Distress

In this section we discuss some desirable criteria for indicator construction. Eleven conditions or criteria will be outlined. These criteria will then be used to evaluate Michigan's current indicators.

What Makes a Good Indicator of Fiscal Distress?

When examining potential indicators of fiscal distress to be used by a state government, several conditions should be considered. First, one wants the indicators to have **theoretical validity** so they operationalize concepts from the models described above. In other words, the better the indicators capture the theoretical concepts previously outlined, the more likely they are suitable measures of fiscal distress. Second, one wants the indicators to **predict fiscal distress before it occurs** rather than merely reporting that fiscal distress has already occurred. Basically, we want indicators to predict rather than define fiscal distress. If the indicators only point out fiscal distress after it has already occurred, then it is too late to recommend preventive action, and the focus shifts to more elaborate remedial measures such as state takeover of local finances. Third, given that the State would be using these indicators, they should capture concepts **relevant to the State's interest**. While the "political vulnerability" model described above may be interesting, it is probably not in the State's interest to collect data on constituency characteristics of all local governments to determine which officials are "vulnerable."

Fourth, it is helpful if the data used to construct the indicators are already **publicly available**. This saves both the state and local governments the time and monetary costs associated with identifying and collecting a new data set. The data for constructing the indicators should also be **uniformly collected** and somewhat **frequent in its collection**. The uniformity of collection basically ensures that the state is comparing "apples with apples" if it is going to evaluate all local units in relation to the same standard. Frequent collection is also necessary so that changes in indicators can detect the onset of distress

signals. If the time lag is too great, a unit could already be in fiscal distress before a measure can recognize it.

A seventh condition for a good indicator is that it gives some sense of **proportion**. The path to fiscal distress is often not precipitous with a unit doing well one year and then facing disaster the next. Rather, there is often a perceptible onset of distress, and an indicator system ought to be able to discern these progressing levels of distress.

An eighth condition is **parsimony**. While very complex indicators may also be constructed to detect the onset of fiscal distress, there is much to be said for simplicity. More straightforward indicators make mistakes in implementation less likely and require little technical training by those administering it. They also are more easily understood by local government officials who will be evaluated by them. Finally, simpler measures are more accessible for the voters who can most directly hold local governments accountable.

While simplicity is a desirable goal, it is necessary to recognize a ninth condition, that the indicators be **resistant to manipulation or "gaming."** If an indicator system were implemented by which local government officials are judged, these officials may change their behavior so that they score well on the indicators while creating problems in other areas not subject to the measure. If a system of indicators were created which worked well historically, it is important to assess the possible changes in behavior that may come in response to the shift in the incentive structure faced by local officials.

A tenth condition for effective fiscal indicators is that there be a measure of **hope** for those in distress and **forgiveness** for those units that are doing well generally. Indicators could be constructed so that a community that has been in distress has little chance of coming out of the distressed state any time soon. This could occur if a very long time lag is used to judge a community that had declined considerably. A long lag would identify a major decline, but it may also miss recent consistent improvement. Somewhat similarly, an indicator could be constructed which declares a unit fiscally distressed even though the unit experienced only one bad year and is generally doing well. This could occur if the indicators focus too much on very short-term changes and is not desirable.

A final condition for indicators is that they **distinguish well** among the units they evaluate. Some time will be spent on this condition as it has important practical implications for which units are "flagged" and which are not. Ideally a system of indicators exactly identifies the set of units which ought to be and does not identify units which should not be. It is difficult for a system of indicators to perfectly meet this goal, however, and the reason for this is the inherent tension between type I and type II errors. Type I and type II errors are best understood in relation to a null hypothesis. Given that the vast majority of local units are not in fiscal distress, a reasonable null hypothesis would be the following: *The local unit is not heading for fiscal distress.* If one were to reject this null hypothesis (based on information from an indicator, perhaps), then one accepts this alternative hypothesis: The local unit *is* heading for fiscal distress. Therefore,

> A **type I error** occurs when one rejects a null hypothesis that should not have been rejected. A **type II error** occurs when one maintains a null hypothesis that should have been rejected.

A type I error occurs with our null hypothesis when the State declares a unit to be heading for fiscal distress, but in fact the unit is not heading for fiscal distress. One could describe this error as a "false positive."

A type II error occurs when the state fails to declare a unit to be heading for fiscal distress, when in fact the unit is heading for fiscal distress. Type II errors can be thought of as missed opportunities or as errors of conservatism (in that the status quo was not changed).

Any adoption of an indicator system by the State will therefore create the potential for its local units to be classified into four categories. The State may operate correctly by "flagging" units which ought to be, and not "flagging" those units which should not be. The state may also commit the type I and type II errors in which the state inappropriately flags or misses the opportunity to flag. These four possible categories are summarized in Table 1.

Table 1		**The Proper Course of Action is for the State to Declare:**	
		Unit heading for distress	Unit not heading for distress
The State Actually Declares that the unit is:	Heading for Distress	*Correct Decision*	Type I Error
	Not Heading for Distress	Type II Error	*Correct Decision*

Null Hypothesis: The unit is not heading for fiscal distress.

The frequency of a particular error depends upon the system of indicators used. The State could adopt a system of indicators where it is very difficult to "flag" a unit. Adopting this system would likely avoid almost any type I errors, but the tradeoff is an increase in the number of type II errors. If the State were instead to implement an indicator system where it was very easy for a unit to be "flagged," then this would lead to many type I errors (false positives), but very few type II errors. The basic question is this: how wide a net does the State want to cast to identify distressed units? If the net is cast broadly, the State will successfully identify those units which are headed for fiscal distress, but it may also identify several units which are not (type I errors). If the net is cast narrowly, then there will be fewer false positives, but there is a better chance that a unit headed for distress will not be identified (a type II error). This is the inherent tension between type I and type II errors; gains in avoiding one come at the expense of a greater likelihood of committing the other.

To summarize this final condition for an indicator, we can say that to **distinguish well**, it will perform relatively well in avoiding both type I and type II errors. Ideally the indicators sort units into only the top left and bottom right boxes of Table 1. Some indicators make this distinction better than others, doing better at avoiding both type I and type II errors. It should be recognized, though, that it is difficult to find a set of indicators that will completely eliminate both errors simultaneously.

III. Evaluating Michigan's Current Indicators of Fiscal Distress

Michigan currently has two statutes with several conditions that are thought to give some indication of fiscal distress. This section evaluates the ability of these statutes to provide an "early warning" of fiscal distress. This evaluation will be done by comparing the 30 triggers in the laws with the desirable indicator attributes presented above.

Public Act 72 of 1990 and Public Act 34 of 2001 contain a total of 30 conditions which serve as indicators of fiscal distress. In almost all cases, these triggers appear deficient in providing an "early warning" of fiscal distress. The most prominent drawbacks are the following:

- **Data Availability, Uniformity, and Frequency:** Frequent, publicly available, and uniformly collected data do not appear to exist for many of the triggers. There is no database indicating a unit's compliance with each of the 30 triggers. Further, the resources required to collect this data would be immense given the type of review that some triggers require. For example one trigger of PA 72 requires a determination of whether a local government has violated "the municipal finance act, or any other law governing the issuance of bonds." Another trigger requires an apparently comprehensive monitoring of applications or statements about municipal securities to assess whether or not it is "materially false or incorrect."
- **Theoretical Validity:** Most of Michigan's triggers focus on technical violations or requests for review. These classes of indicators are not among those suggested by the most commonly used literature. While these indicators may reflect some concepts

from the "bad" management model, there are almost no triggers that tap the population and job market shift model or the government growth model.

- **Proportion:** There is no degree of proportion reflected by the 30 triggers in the two acts. If a unit is violating just one of these conditions (by perhaps being a month late in delivering a financial report) then it appears to be as technically "fiscally distressed" as a unit which is in violation of several and more serious triggers. Current law provides only the two categories of being in compliance with the two acts or not being in compliance. This provides little ability for early warning since there is no sense of gradation in the level of distress that a unit is experiencing.
- **Distinguishing Well:** An indicator or set of triggers that is not proportionate to actual fiscal distress is more likely to incur both type I and type II errors and thus not "distinguish well." As there are only two categories in Michigan law, compliance and non-compliance, these triggers register a violation for any single violation of the acts. Therefore an otherwise fiscally healthy unit which is a month or two delinquent in delivering a financial report is in as much legal violation as a unit which is incapable of paying its employees. If the State attempts to make distinctions amongst the triggers in which some are taken "more seriously" than others, it opens itself up to the charge of arbitrary application of the law, as the law provides no such distinction. In terms of "early warning," Michigan's indicators do not appear reliable from either a type I or type II standpoint. False positives could abound, and units headed for trouble could abide by these acts even as they are headed for a fiscal emergency.
- **Predict Fiscal Distress:** Several, if not most, of Michigan's indicators are more suited to defining rather than predicting fiscal distress. By the time these triggers are

violated, the unit is already in a difficult fiscal situation. If a jurisdiction cannot pay its employees, is in default on paying debt, is ordered by a court to levy a tax, or is seeking to issue bonds under the Emergency Municipal Loan Act, then the fiscal distress has typically already occurred. Ideally, indicators ought to predict these types of events so that they can be avoided. Nearly all of the triggers based on request fit this profile as well. By the time officials or constituents are requesting a possible intervention by the State, it is likely that fiscal distress has already occurred.

In summary, the statutory triggers have substantial practical and theoretical limitations which impede their ability to give an early warning of fiscal distress. It would therefore be beneficial to construct a set of improved indicators which possess the ability to better predict fiscal distress before it occurs.

IV. Identifying Improved Indicators

This section identifies our data sources, provides a general description of the data collected, and identifies several new indicators.

Data Sources

One of the deficiencies in Michigan's current indicator system is that there is little systematic data collected for the triggers. One goal of this project was to evaluate potential triggers from data that are already publicly available. Our data set covers the years 1991-2001 for cities and villages and 1994-2001 for most townships. Data were collected from the following sources:

- Comprehensive annual financial reports (F-65s): These reports were generally only available from the MDT for the most recent years, typically from 1998 through 2001.
- Audits: As with the annual financial reports, it is generally only very recent years that Treasury has on location. Audits going back to 1995 or perhaps 1994 were examined at the State Record Center. Almost no audits exist for earlier than 1994.
- Michigan Municipal League Records: The Michigan Municipal League (MML) has collected some data from annual financial reports for several years. Their data were used to supplement our collection.
- Michigan State University Records: The Institute for Public Policy and Social Research (IPPSR) at Michigan State University collected annual financial report data through 1993. This is the source for most of our data from 1991 through 1993.
- Treasury Department Records: Data on taxable value and millage rates were obtained in electronic format from the MDT.
- U.S. Census Bureau: Data on population estimates were collected from the U.S. Census Bureau website.
- U.S. Department of Labor: Data on inflation were collected from the Bureau of Labor Statistics website.

An Overview of the Data

Geographic Distribution: The data set selected includes 97 cities and 53 townships selected at random from the state's cities and townships. The data set was augmented to include all jurisdictions identified as in fiscal distress by the State. The 2000 population of the 150 jurisdictions included in the data set is about 4.5 million, or nearly 45 percent

of the state's population.These jurisdictions cover 48 of Michigan's 83 counties. The 48 counties contain about 89 percent of the state's population. Only two counties with a population over 50,000 are not represented, Tuscola (58,266) and Barry (56,755). Thirty-six of the 150 jurisdictions in the data set are located in Oakland (21) and Wayne (15) counties, which contain about 33 percent of the state's population.

Population: The average 2000 population of the 50 townships included in the sample is 12,622; the average population of the 98 cities included is 39,026. The average growth rate of the townships from 1991 to 2000 was 17.8 percent while the average growth rate of the cities was only 2.3 percent. Statewide population increased 5.8 percent from 1991 to 2000.

There were seven townships in the sample that grew more than 30 percent. The fastest growing were Macomb (102.5percent), Zeeland Charter (66 percent) and Allendale (57.7 percent). There were only three townships that lost population: Kinross Charter (-14.5 percent), Buena Vista (-5.1 percent), and Flint (-1.1 percent). The large population loss in Kinross was due to the closure of a military base.

There were four cities that grew more than 30 percent: South Lyon (48.8 percent), Rochester (46.6 percent), Fennville (43.3 percent), and Novi (34.2 percent). There were 52 cities that lost population from 1991 to 2000. The cities suffering the largest declines were Highland Park (-16.8 percent), Munising (-12.7 percent), River Rouge (-12.6 percent), Marquette (-10.9 percent), Flint (-10.8 percent), and Saginaw (-10.3 percent).

Taxable Value: The average 2001 taxable value (TV) of the 50 townships covered in the study is $392.9 million while the average TV of the 98 cities covered is $875.8 million. The average annual growth rate of the townships from 1991 to 2001 is 6.9 percent (a total growth rate of 95.3 percent) while the average growth rate of the cities was only 4.7 percent (a total growth rate of 58.1 percent.) In comparison statewide TV increased at an annual rate of 5.5 percent (or a total of 71.2 percent). (Since the passage of Proposal A in 1994, local taxes have been levied on taxable (or capped) value rather than State Equalized Value as was the case prior to 1995).

There were four townships that recorded double-digit growth on an annual basis from 1991 to 2001. Three of these townships were in Oakland County- Macomb (15.8 percent), Bruce (11.1 percent), and Washington (11.1 percent). The fourth township was Zeeland (12.1 percent), located in Ottawa County. There were only six townships that recorded annual growth of less than 4 percent; Frenchtown (0.4 percent), Hampton (0.8 percent), Royal Oak (3.2 percent), Bridgeport (3.4 percent, Genesee (3.8 percent), and Buena Vista (3.8 percent). Adjusted for inflation, only Frenchtown and Hampton townships recorded an actual decline in TV. Royal Oak and Bridgeport townships recorded total real growth of less than 1 percent.

There were four cities that recorded double-digit growth on an annual basis from 1991 to 2001; Flat Rock (12.7 percent), South Lyon (10.8 percent), Rochester (10.5 percent), and Newaygo (10 percent). There were 26 cities that recorded annual growth of less than 4

percent. The slowest growing cities are Highland Park (-5.7 percent), Flint (-0.5 percent), Saginaw (2.3 percent), Midland (2.7 percent), Fremont (2.8 percent), and Farmington (2.9 percent). The TV value of Highland Park fell a total of 44.5 percent, however the entire decline occurred from 1991 to 1997. Since 1997 TV has increased 3.9 percent. The reason for the slow growth in Midland is that a large share of their tax base is personal property (machinery and equipment) which grows much slower than real property. (Unlike the other cities with slow growth in TV, Midland has a healthy, growing economy). Adjusted for inflation, there were five cities that recorded a decline in total TV from 1991 to 2001; Highland Park (-55.7 percent), Flint (-27.2 percent), Saginaw (-4.1 percent), River Rouge (-2.9 percent), and Midland (-0.6 percent).

Presentation of New Indicators

In the paper submitted to the MDT in January 2002, we noted nine categories of indicators that are either in use in Michigan or are suggested by the literature. They include the following:

- Technical or Legal Violations
- Request
- Debt
- Community Needs and Resources
- Operating Position
- Revenue
- Expenditure
- Unfunded Liabilities
- Capital Plant

Of Michigan's 30 indicators, 25 are based on either the request or technical or legal violations categories. Three others focus on debt. It is clear therefore that there are many fertile areas for MDT to explore in constructing indicators. In our January 2002 report to

MDT, we delineate in more detail information on the 30 indicators. Appendix 1 examines other possible indicators along with an explanation of why they are not presently included.

The indicators we constructed and will discuss here focus on the areas of operating position, debt, and community needs and resources. Below we describe how the indicators in these three categories were operationalized using the Michigan local governmental sample.

Indicators of Community Needs and Resources

- *Population Growth*: There appears to be a correlation between population loss and fiscal problems. Population loss is usually the result of a general weakening of a locality's economy or a loss of a major employer such as a military base. Local governments are often unable to reduce expenditures to match the slowing growth or actual decline of revenue. Data for this variable were collected from the U.S. Census website.

  Table 1 and Table 2 of Appendix 2 show the percentage growth for all units in our sample from 1991-2000 with troubled units listed in bold type. Troubled units are here defined as those listed at any time in the in the "Distressed Unit" section of the Local Audit and Finance Division's Annual Report. It is clear that many distressed units have experienced considerable population declines.

- *Real Taxable Value Growth*: Much as with population growth, there appears to be a relationship between declining taxable value of a unit and its fiscal health. Since many local governments rely heavily upon property taxes, it follows that decreases in taxable value will require major adjustments in expenditures. The deleterious impact of a drop in taxable value is exacerbated if that drop is relatively large. Inflation-adjusted figures are used so that real rather than inflationary growth is measured. It is often the case that local units do not realize that apparently increasing revenues are due mainly to inflation. Data for this variable were obtained from the MDT.

  Tables 3 and 4 of Appendix 2 list the percentage growth in real taxable value for each unit from 1991-2001. All nominal figures have been converted to 1991 dollars. As with the population variable, distressed units are listed in bold type, and it again appears that distressed units disproportionately are among those with the highest declines in taxable value.

The theoretical connection of these two indicators to the "population and job market shift" model is clear. Both of these indicators measure changes in the tax base that reflect both a diminished revenue capacity as well as a likely decrease in public services required within the unit.

- *General Fund Expenditures as a Percent of Taxable Value*: This indicator assesses the size of a unit's public sector relative to its ability to generate revenues. This variable bears a reasonable theoretical connection to the governmental growth model.

A unit that scores relatively high on this variable indicates a unit that has a large public sector relative to the size of its tax base. Units with high scores on this indicator may wish to decrease this ratio through cutting expenditures, providing more efficient delivery of services, and/or attracting new residents or businesses that will increase the tax base.

Tables 5 and 6 of Appendix 2 list the average value for units on this measure. Once again, troubled units are bolded. Taxable value data can be obtained from the MDT, and general fund expenditures are readily available from audits and annual financial reports. Nearly all distressed units score above average for this indicator.

Indicators of Operating Position

- *General Fund Operating Deficit*: A general fund operating deficit is detected when expenditures exceed revenues for a given year. An operating deficit in one year is considered a minor signal of fiscal distress. When a unit maintains operating deficits over several years, this is considered a sign of more serious distress, particularly if the size of the deficit is large for a single year or frequent and increasing in size. Distressed units are about two times more likely than non-distressed units to have a general fund operating deficit.
- *Fund Balances*: A nontrivial negative balance in any fund is considered a sign of fiscal distress. Obviously a large negative fund balance would more define rather than predict fiscal distress. Local government units will typically want to maintain a positive fund balance so that unanticipated expenditures or lower than anticipated

revenues do not cause the city to have a negative fund balance. Although MDT's distressed units comprise only 8 percent of our sample, they account for almost half of the negative fund balances.

An Indicator of Debt

- *General Long-term Debt*: If a local unit has acquired a relatively large debt load, then this raises concerns about whether they are relying upon debt to meet their short-term obligations and also their ability to eventually pay off the debt in the long-term. General long-term debt is a readily available measure from both audits and annual financial reports.

  Tables 7 and 8 of Appendix 2 list the average values for this variable. Distressed districts are listed in bold, and it does appear that distressed units tend to have relatively high levels of debt.

V. Introducing a 10-Point Scale of Fiscal Distress

A common refrain in the fiscal indicator literature is that no single indicator can paint the whole picture of a unit's fiscal position. This can readily be seen from the categories described above. It is clear that a decrease in population size or even taxable value is not a guarantee that a unit will experience fiscal distress. These declines may be viewed as warning signs about the tax base, but if expenditures are appropriately reduced, the unit can remain fiscally healthy. Neither do operating deficits alone mechanically dictate the certain onset of fiscal distress. It could be the case that an operating deficit was planned

to reduce a large fund balance. Similar illustrations and exceptions could be conceived in the case of other indicators. If, however, several of these indicators are "flagged" simultaneously, then this is probably a much more serious situation, one in which fiscal distress is likely to occur.

It is therefore our recommendation that a scale of fiscal distress be adopted which reports on several indicators simultaneously. We developed a 10-point scale of fiscal distress based upon the indicators presented in the prior section. **Using this scale all local units can be measured annually on a range from 0 to 10,** where10 indicates a high level of distress and 0 indicates no distress. Units can score any integer between 0 and 10 as well.

The 10-point scale generally works like this:

1. A specific variable is created that directly measures an indicator concept from section IV above.
2. A standard is set that distinguishes "good" from "bad" performance on the variable. Sometimes this is straightforward (a negative fund balance is bad), but in other cases it is more difficult to discern an appropriate standard (what is a bad level for general fund expenditures as a percent of taxable value?). In the latter case, standard deviations from average values are used to identify a small percentage which is performing relatively poorly.
3. If the local government unit scored a "good" on the variable, they receive 0 points. If, however, their performance rates a "bad," they receive 1 point (or possibly 2 points in the case of consecutive operating deficits).
4. Each unit's points are totaled for the year, resulting in a score ranging from 0 to 10.

Definitions for the 10-Point Scale Variables

Indicator #1: Population Growth: The U.S. Census estimates population changes annually for all cities, townships, and villages in Michigan, and a hard count exists for 2000. This first indicator measures population change over two-year periods, such as

from 1993 to 1995. If a unit lost population, then it scores a 1, otherwise it is assigned a 0. This seems a reasonable standard, especially in light of Michigan's overall statewide growth rate of approximately 7 percent over the last decade.

NEED:
[LocalUnits] **dbo_LocalUnits**
[Population].[Year] **dbo_Population**

DRAFT CODE
If [Year2] <[Year1] then
[Score1] = 1
Else: EndIf
If [Year2] >[Year1] then
[Score1] = 0
Else: EndIF
Me.Refresh

Indicator #2: Real Taxable Value Growth: With the data available from the MDT, two-year growth periods of real (inflation-adjusted) taxable value for each unit are computed. Just as was done in with the population definition, this would involve comparing years such as 1998 data with 1996 data. All real figures for this project have been adjusted to 1991 dollars. Local government units score a 1 if they demonstrate negative real growth, and they receive a 0 if they exhibit positive real growth.

NEED:
[LocalUnit]
[Year].**[RealTaxableValues]**

DRAFT CODE:
If [RealTaxableValueCurrent] < [RealTaxableValuePrevious] then
[Score2] = 1
Else: EndIF

If [RealTaxableValueCurrent] > [RealTaxableValuePrevious] then
[Score2] = 0
Else: EndIF

Indicator #3: Large Real Taxable Value Decrease: This indicator uses the same data and time lag as indicator #2. The only difference is that a different standard is used. For this indicator, units measuring less than –0.04 receive a 1 and others are marked 0. This is not mere redundancy of indicator #2, however. Local governments are especially hard hit when a relatively large taxpayer departs, and therefore units experiencing major decreases in taxable value should be more likely candidates for fiscal distress. Highland Park, for example, experienced drops in real taxable value of well over 25 percent. It makes sense that this type of decline is more heavily weighted than, say, Garden City's 1 or 2 percent drop in the early 1990s. Units that do score a 1 on Indicator 3 will also have scored a 1 on Indicator 2.

The level of –0.04 is chosen because it is approximately one standard deviation beneath the average two-year real growth rate for cities and villages. The average score on this variable for cities and villages is 0.0463 (a 4.63 percent increase) with a standard deviation of 0.092. The average score on this variable for townships is 0.0867 (8.67 percent increase) with a standard deviation of 0.085. The score –0.04 is approximately one-and-a-half standard deviations beneath the township average. The standard used is closer to the city and village standard deviation because very few townships experienced fiscal distress.

NEED:
Same as for two above

CODE:

```
If ( [RealTaxableValueCurrent] – [RealTaxableValuePrevious] /
[RealTaxableValueCurrent] < 0.04) Then
        [Score4] =1
        Else:  EndIF

If  ([RealTaxableValue Current] – [RealTaxableValuePrevious] /
[RealTaxableValueCurrent] > 0.04) Then
        [Score4]= 0
        Else:  End If
```

Indicator #4: General Fund Expenditures as a Percent of Taxable Value

General Fund Expenditures are drawn from either the annual financial report or the audit for the local unit. Taxable value is the same variable used for indicators 2 and 3. Whereas the first three indicators looked at current year values compared with those of two years earlier, this indicator has no time lag and deals solely with data from within the same year. To compute this variable, general fund expenditures are divided by taxable value for that year (note: no adjustment for inflation is necessary when computing percentages within the same year). The averages for this data appear in Tables 5 and 6. The average value for cities and villages is 0.0347 with a standard deviation of 0.0353. This means that on average, these units spend an amount equal to about 3.5 percent of their taxable value every year for their general fund. The average value for townships is 0.0065 with a standard deviation of 0.0039. A half standard deviation in the "wrong direction" gives a standard of 0.05 for cities and villages and 0.01 for townships. This is the only variable for which separate standards are used. Units with ratios above the standard receive a 1 since they indicate units with public sectors that are fairly large for the tax base that is supporting them. Units below the standard score a 0.

Indicator #5: General Fund Operating Deficit

The first four indicators generally fit the category of "community needs and resources." The next three assess operating position, beginning with general fund operating deficit. This variable is computed by subtracting general fund revenues from general fund expenditures for a **given year**. This figure is then divided by general fund revenue. If the number that results is less than –0.01, this indicates a unit has a nontrivial operating deficit, and this unit receives a score of 1. If the unit does not have a general fund operating deficit, or if this deficit is trivial (less than 1 percent of general fund revenue) then the unit is given a 0 for this indicator.

NEED:

[LocalUnit]
[Year]
[GeneralFundRevenues]
[GeneralFundExpenditures]

DRAFT CODE:
IF ([GeneralFundRevenues]-[GeneralFundExpenditures]/[GeneralFundRevenues] < -0.01 THEN
[Score5] = 1
Else: EndIF
IF ([GeneralFundRevenues]-[GeneralFundExpenditures]/[GeneralFundRevenues] > 1.0 THEN
[Score5] = 0
Else: EndIF

Indicator #6: Prior General Fund Operating Deficits

An operating deficit for a single year is considered a minor sign of fiscal distress. Operating deficits are a much more serious concern when they begin to accumulate over time, or are becoming larger. This indicator captures this type of concern by measuring

whether the unit had an operating deficit in the past **two years**. A score of 1 is assigned for each prior year in which an operating deficit had occurred. So if a unit had no operating deficit the prior year, but did have one two years ago, it would score a 1 on this indicator. If the unit had general fund operating deficits for both previous years, then it would receive a score of 2 for this indicator. Please note that 3 total points may be scored on the 10-point scale due to operating deficits. If a unit has a current operating deficitand had one the previous two years as well, then one point is scored for Indicator #5 and two points are scored for Indicator #6.

NEED:
Same as #5 above

DRAFT CODE:
If [GenFundDifference]/[GeneralFundRevenues] < 0.01 then
    [Score6] = 1
    Else: End If
If [GenFundDifference]/[GeneralFundRevenues] > 0.01 then
    [Score6] = 0

EndIF

Indicator #7: Size of General Fund Balance

Most units maintain a positive fund balance, and it is a sign of fiscal distress if the fund balance is negative. Units typically find it beneficial to keep the fund balance from declining too greatly as this inhibits their ability to cope with unexpected circumstances in either the revenue or expenditure stream. There is some debate as to how large a balance should be maintained and whether this level should only focus on the unreserved portion or include reserved funds as well. Our data reports combined reserved and

unreserved fund balances, and because there is no clear credit industry benchmark for a standard, we again adopt a standard deviation approach.

The actual variable constructed for this indicator is the general fund balance as a proportion of general fund revenues. On average, cities and villages maintain a general fund balance that is 29.9 percent of general fund revenue, and the standard deviation for this distribution is 0.342. Using a half standard deviation in the "wrong direction" as a benchmark, the resulting indicator theshold is about 0.13. Therefore if a unit maintains a general fund balance less than 13 percent of its general fund revenue, it scores a 1. Conversely a general fund balance above the 0.13 level scores a 0.

NEED:

[GeneralFundBalance]
[GeneralFundRevenue]

DRAFT CODE:

```
If ( [GeneralFundRevenue]/[GeneralFundBalance] < 0.13 Then
        [Score7] = 1
        Else:    EndIF
If ([GeneralFundRevenue]/[GeneralFundBalance] > 0.13 Then
        [Score7] = 0
        EndIF
```

Indicator #8: Fund Deficits in Current or Previous Year

Fund deficits are indicators of fiscal distress, particularly if those deficits are large and increasing. This variable taps this concept by penalizing a unit if it has produced a negative fund balance in the current or previous year. Fund balances measured for this variable are restricted to general, special, capital, and debt service. If a unit had a negative fund balance in any of these four funds in the current or prior year, it receives a

score of 1. If no deficits in these funds existed for the current or prior year, then the unit scores a 0.

An alternative data source that could be used for this indicator is item #2 on the auditing procedures report which indicates if there are any fund deficits "in one or more of the unit's unreserved fund balances." This measure has the deficiency of reporting deficits of very small amounts for minor funds, and it does not appear to be consistently reported based upon our observation.

NEED:

[GeneralFundBalance]
[SpecialFundBalance]
[CapitalFundBalance]
[DebtServiceFundBalance]
[Year]

Indicator #9: General Long-term Debt as a Percent of Taxable Value

Large debt levels relative to the ability of the unit to generate revenue are a clear sign of fiscal distress. This variable is constructed by taking general long-term debt and dividing it by the taxable value of the unit. A credit industry benchmark exists that recommends a unit's debt not exceed 10 percent of its assessed value, but we set a standard somewhat lower since prediction rather than after-the-fact definition of distress is the objective. The average value for cities and villages on this variable was 2.47 percent with a standard deviation of 0.035. Using a one standard deviation in the "wrong direction" gives us a

standard of about 6 percent. Therefore any unit with a debt to taxable value ratio above 6 percent is coded as a 1 and those beneath a 0.

NEED:

[GeneralLongTermDebt]
[TaxableValue]

DRAFT CODE:
If [GeneralLongTermDebt]/[TaxableValue] >0.06 Then
[Score9] = 1
Else: EndIf
If [GeneralLongTermDebt]/[TaxableValue] <0.06 Then
[Score9] = 0
EndIF

The nine indicators are summarized in table 2. Under "Standard Used," units which do not meet the indicator threshold score 0 by default.

Table 2	**Indicator**	**Description**	**Standard Used**
Indicator #1	Population Growth	2 year growth	If < 0, then 1
Indicator #2	Real Taxable Value Growth	2 year growth	If < 0, then 1
Indicator #3	Large Decrease in Real Taxable Value	Looks for large drop over a 2 year period	If < -0.04, then 1
Indicator #4	General Fund Expenditures as a Percent of Taxable Value	Current GF Expenses divided by current taxable value	Townships: If >0.01, then 1 Cities: If > 0.05, then 1
Indicator #5	General Fund Operating Deficit	Current GF Expenditures subtracted from current GF Revenues, divided by GF Revenues	If < -0.01, then 1
Indicator #6	Prior General Fund	Checks indicator 5 for	A unit is assigned a

	Operating Deficits	two years previous to current year	point for each year that an operating deficit is found. Score may range from 0 to 2
Indicator #7	Size of General Fund Balance	General Fund Balance as a percent of general fund revenues	If < 0.13, then 1
Indicator #8	Fund Deficits in Current or Previous Year	Current or previous year deficit in major fund	If fund deficit is found, then unit scores a 1
Indicator #9	General Long-term Debt as a Percent of Taxable Value	Current GLT Debt is divided by current taxable value	If > 0.06, then 1

VI. A Historical Application of the 10-Point Scale of Fiscal Distress

Using the indicators and standards established in the prior section, we are able to score governmental units historically. The results are presented in Table 3 showing all units in the sample that scored a 4 or above. Several points will aid the interpretation of these tables:

- The first year that could be reported is 1993. This is due to the variable definitions that require observations over two year time periods and the fact that our data extends back only to 1991.
- Many townships could not be assigned scores for 1993 and 1994 due to unavailable data. Nearly all townships are assigned scores from 1995 through their most recent reporting, ususally 2001.
- Missing data should be recognized as potentially leading to artificially low scores. Units for which we were unable to obtain data for the time period are noted at the bottom of the table. Please note that many of those for whom data are missing are

those who have experienced fiscal distress. This indicates that a unit with missing data could in many cases have scored much higher in the year that the data was first missing. Given that some indicators examine data from as much as two years prior to the current year, missing data may also affect the scale as much as two years later. For example, Flint's financial reporting data are missing in 1998. While the 1998 score is likely lower due to this absence, it is also quite possible that their score for 1999 and 2000 is also too low due to the 1998 missing data. Since missing data could be a key ingredient, it is reported at the bottom of current as well as future years which could have been impacted.

- The data used for any given year are treated as though they were reported in that year in a timely manner. If the data for any of our variables were reported very late, our collection method did not explicitly account for this.

Table 3

1993 Scores		1994 Scores		1995 Scores	
9	**Detroit city, Wayne County**	**7**	**Detroit city, Wayne County**	**7**	**Saginaw city, Saginaw County**
9	**Pontiac city, Oakland County**	**7**	**Pontiac city, Oakland County**	**6**	**Detroit city, Wayne County**
7	**Flint City, Genesee County**	**6**	**Flint City, Genesee County**	**6**	**Gladstone city, Delta County**
6	**Benton Harbor city, Berrien County**	**6**	**Highland Park city, Wayne County**	**6**	**Hamtramck city, Wayne County**
5	**Ecorse city, Wayne County**	**6**	**Ionia city, Ionia County**	**6**	**Pontiac city, Oakland County**
5	**Saginaw city, Saginaw County**	**6**	**Saginaw city, Saginaw County**	**5**	**Benton Harbor city, Berrien County**
4	Bay City city, Bay County	**5**	**Buena Vista township, Saginaw County**	**5**	**Ecorse city, Wayne County**
4	Buena Vista township, Saginaw County	**5**	**Ecorse city, Wayne County**	**5**	**Flint City, Genesee County**
4	Dearborn Heights city, Wayne County	**5**	**Manistique city, Schoolcraft County**	**5**	**Highland Park city, Wayne County**
4	Greenville city, Montcalm County	**5**	**Mount Clemens city, Macomb County**	**5**	**Lansing city, Ingham County**
4	Jackson city, Jackson County	**5**	**Roosevelt Park city, Muskegon County**	**5**	**Manistique city, Schoolcraft County**
4	Lansing city, Ingham County	**5**	**Royal Oak township, Oakland County**	**5**	**Mount Clemens city, Macomb County**
4	Manistique city, Schoolcraft County	**5**	**Taylor city, Wayne County**	**5**	**Royal Oak township, Oakland County**
4	Mount Clemens city, Macomb County	4	Adrian city, Lenawee County	4	Adrian city, Lenawee County
4	Roosevelt Park city, Muskegon County	4	Gladstone city, Delta County	4	Bay City city, Bay County
4	Taylor city, Wayne County	4	Hamtramck city, Wayne County	4	Buena Vista township, Saginaw County
4	Troy city, Oakland County	4	Hazel Park city, Oakland County	4	Clio city, Genesee County
4	Williamston city, Ingham County	4	Jackson city, Jackson County	4	Coleman city, Midland County
		4	River Rouge city, Wayne County	4	Dearborn Heights city, Wayne County
		4	Troy city, Oakland County	4	Garden City city, Wayne County
		4	Williamston city, Ingham County	4	Gaylord city, Otsego County
				4	Grayling city, Crawford County
				4	Hazel Park city, Oakland County
				4	Ionia city, Ionia County
				4	Jackson city, Jackson County
				4	Melvindale city, Wayne County
				4	River Rouge city, Wayne County
				4	Roosevelt Park city, Muskegon County
				4	Taylor city, Wayne County
Data missing for: Most Townships		**Data missing for:**		**Data missing for:**	
1991-94 Highland Park		1991-94 Highland Park		1991-94 Highland Park	
1992 Hamtramck		1992 Hamtramck		1995 River Rouge	
1991 Ecorse		1992-96 Clio		1992-96 Clio	
1992-96 Clio		1993 Algonac		1993 Algonac	
1993 Algonac		Most townships		Some Townships	

Table 3 (continued)

1996 Scores	1997 Scores	1998 Scores
7 River Rouge city, Wayne County	**7 River Rouge city, Wayne County**	**9 Highland Park city, Wayne County**
5 Benton Harbor city, Berrien County	**6 Benton Harbor city, Berrien County**	**7 Buena Vista township, Saginaw County**
5 Ecorse city, Wayne County	**6 Buena Vista Charter, Saginaw County**	**7 Ecorse city, Wayne County**
5 Gladstone city, Delta County	**6 Highland Park city, Wayne County**	**6 Benton Harbor city, Berrien County**
5 Saginaw city, Saginaw County	**5 Ecorse city, Wayne County**	**5 Hampton township, Bay County**
4 Buena Vista township, Saginaw County	**5 Jackson city, Jackson County**	**5 Hamtramck city, Wayne County**
4 Clio city, Genesee County	**5 Royal Oak township, Oakland County**	**5 Jackson city, Jackson County**
4 Detroit city, Wayne County	4 Coloma city, Berrien County	**5 River Rouge city, Wayne County**
4 Flint City, Genesee County	4 Fennville city, Allegan County	**5 Royal Oak township, Oakland County**
4 Highland Park city, Wayne County	4 Flint City, Genesee County	4 Grand Rapids city, Kent County
4 Lansing city, Ingham County	4 Hampton township, Bay County	4 Pontiac city, Oakland County
4 Manistique city, Schoolcraft County	4 Newaygo City, Newaygo County	
4 Mount Clemens city, Macomb County	4 Norway city, Dickinson County	
4 Muskegon city, Muskegon County	4 Pontiac city, Oakland County	
	4 Saginaw city, Saginaw County	
Data missing for:	**Data missing for:**	**Data missing for:**
1995 River Rouge	1995 River Rouge	1998 Flint
1991-94 Highland Park	1992-96 Clio	1992-96 Clio
1992-96 Clio		
Some Townships		

Table 3 (continued)

1999 Scores		2000 Scores		2001 Scores	
10	**Highland Park city, Wayne County**	**8**	**Flint City, Genesee County**	**9**	**Flint City, Genesee County**
7	**Hamtramck city, Wayne County**	**7**	**Benton Harbor city, Berrien County**	**7**	**Benton Harbor city, Berrien County**
6	**River Rouge city, Wayne County**	**6**	**Ecorse city, Wayne County**	**7**	**Ecorse city, Wayne County**
5	**Benton Harbor city, Berrien County**	**6**	**Kinross township, Chippewa County**	**6**	**Munising city, Alger County**
5	**Buena Vista township, Saginaw County**	**5**	**Hamtramck city, Wayne County**	**6**	**Plainwell city, Allegan County**
5	**Ecorse city, Wayne County**	**5**	**Highland Park city, Wayne County**	**5**	**Detroit city, Wayne County**
5	**Flint City, Genesee County**	**5**	**Newaygo City, Newaygo County**	**5**	**Kinross township, Chippewa County**
5	**Jackson city, Jackson County**	**5**	**River Rouge city, Wayne County**	**5**	**Newaygo City, Newaygo County**
5	**Kalamazoo city, Kalamazoo County**	4	Clare city, Clare County	**5**	**Norway city, Dickinson County**
5	**Pontiac city, Oakland County**	4	Detroit city, Wayne County	**5**	**Pontiac city, Oakland County**
4	Detroit city, Wayne County	4	Lansing city, Ingham County	**5**	**Reading city, Hillsdale County**
4	Frenchtown township, Monroe County	4	Manistique city, Schoolcraft County	4	Garden City city, Wayne County
4	Grand Haven city, Ottawa County	4	Melvindale city, Wayne County	4	Gaylord city, Otsego County
4	Hampton township, Bay County	4	Munising city, Alger County	4	Manistique city, Schoolcraft County
4	Manistique city, Schoolcraft County	4	Norway city, Dickinson County	4	Otsego city, Allegan County
4	Newaygo City, Newaygo County	4	Pontiac city, Oakland County	4	Rogers City city, Presque Isle County
4	Norway city, Dickinson County	4	Rogers City city, Presque Isle County	4	Roosevelt Park city, Muskegon County
4	Owosso township, Shiawasee County	4	Wayne city, Wayne County	4	Saginaw city, Saginaw County
4	Royal Oak township, Oakland County			4	Wayne city, Wayne County
4	Wayne city, Wayne County				
Data missing for:		**Data missing for:**		**Data missing for:**	
1998 Flint		1998 Flint		2000-01 Highland Park	
		2000-01 Highland Park		2001 Hamtramck	
				2001 Melvindale	
				2001 Perry	
				2001 Kalamazoo	

- This table is not comprehensive of all cities, villages, and townships in Michigan. While our sample does include all units identified as "distressed," it is possible that several more units could fill in the lower part (scores of 4 or 5 points) of this table.

Analysis of 10-Point Scale

For all units in the sample evaluated on the 10-point scale, the average score is approximately 1.5. The 10-point scale appears to perform fairly well in identifying the units which have previously been identified as distressed.

Highland Park

Highland Park initially had a review team established in 1996. The 10-point scale identifies Highland Park as early as 1994 at a score of 6, and this relatively high score is achieved even without potentially damaging financial reports from that unit from 1991-1994. Although the scores for the next two years are likely too low given the absence of prior audits and reports, Highland Park still scores a 5 in 1995 and a 4 in 1996. The worsening fiscal status of Highland Park is observed as it increases to a 6 in 1997, a 9 in 1998, and a 10 in 1999. Although Highland Park's review team was dissolved in 1999, the scale suggests the city was still in serious fiscal trouble. A review team was again appointed in 2000. The data for Highland Park in 2000 and 2001 were unavailable, and this accounts for its low scores in these years. Even with the missing data, Highland Park scores a 5 in 2000 and a 3 in 2001, and these scores are artificially low.

Hamtramck

Although its fiscal troubles were not as severe as Highland Park's, the 10-point scale identifies Hamtramck as a unit likely to experience fiscal distress. Hamtramck's scores are relatively high beginning with a 3 in 1993, a 4 in 1994, and a 6 in 1995. Conditions appear to have improved in 1996 and 1997 with scores decreasing to 2 and 3 respectively. In 1998, however, there is an increase to 5 followed by an additional rise to 7 in 1999. The State established a review team in 2000, a year in which the unit scored a 5. Financial data were not available for Hamtramck for 2001, but the unit still scored a 3 for that year.

Flint

The 10-point scale offers a picture of Flint as a city that has been likely to experience fiscal distress for nearly the entire period examined. Conditions appear to have improved some in the mid-90s, but have worsened considerably recently. The scale measures Flint as follows:

Year:	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**00**	**01**
Score:	7	6	5	4	4	NA	5	8	9

It should be noted that no financial data were available for Flint in 1998, and this absence quite likely depressed the scores for 1999 and 2000 as well. Only Highland Park in 1999 with a score of 10 has exceeded the 9 which Flint scored in the most recent year of reporting. Although a detailed examination of financial records is still the best way to determine when State intervention is appropriate, it is interesting to note that only Flint and Highland Park score above an eight in consecutive years.

Other Units

Several other units which have been identified as distressed appear on the 10-point scale as well. While many of these have not scored as high as Highland Park or Flint, there is good reason to carefully examine a unit like Ecorse, whose scores over the three most recent years have increased from 5 to 6 to 7. Although Benton Harbor has exhibited improvement on some of the individual indicators, their recent scores on the 10-point scale are still relatively high.

Judging the Performance of the 10-point Scale

Section II listed several criteria that were desirable for a good system of indicators. Using these same criteria, it is now possible to evaluate the 10-point scale we are proposing.

The scale clearly has **theoretical validity**. The connections between the indicators used to construct the scale and the theories of fiscal distress are intuitively obvious and much more clear than those triggers currently established in state law.

A major objective accomplished by the scale is that it appears to **predict fiscal distress before it occurs**. In the cases noted above the scale consistently identifies units before their review teams were appointed. There are also some units identified which are current candidates for a fiscal distress designation.

The indicators which comprise the scale are **relevant to the State's interest,** and the data for these indicators are **publicly available, uniform in its collection,** and **collected frequently**.

The scale offers the advantage of demonstrating a sense of **proportion**. There are certainly gradations of distress, and this scale captures some of these differences. Highland Park and Flint both score extremely high, and the gradual movements to these high scores are detectable. Flint's condition, for example, now appears to be somewhat worse than it was in 1996 and 1997. Ecorse is a unit whose scores are becoming progressively worse recently. Each of these descriptions gives a sense of the relative change in fiscal distress, something which is not possible with the unscaled categories of "compliance" and "non-compliance" currently in Michigan law.

Parsimony is achieved by the scale. A 10-point scale has strong intuitive appeal, and each of the indicators within the scale is reasonably accessible to State administrators, local officials, and voters.

While the scale is fairly straightforward, it is still broad enough to make it **resistant to manipulation**. Some variables such as population and taxable value growth would be nearly impossible to manipulate, and the State is already observing local units on some of the other indicators such as fund balances and debt levels. It may be that our scale is not sufficiently broad, and that additional or different indicators could be added to the scale. However, the approach we support here—of establishing an index—can easily be

adjusted by adding indicators without harming its effectiveness. (For an example of additional indicators, see Appendix 1.)

The scale does offer some **hope** and **forgiveness**. Units that do score relatively high do not necessarily stay there. For example Ionia scored a 6 in 1994, but then gradually decreased its score (6, 4, 3, 2, 3, 1, 2, 0) so that it currently is graded at a 0. For generally healthy units, the scale is forgiving in that it only ”flags” units which perform badly on several indicators simultaneously. The average local government unit scores a 1.5 on the scale, a score that merits little attention from the state.

Finally is the issue of **distinguishing well**. As mentioned earlier this is closely related to the issue of avoiding both type I and type II errors. Let us first note that overall, the scale does appear to distinguish well. The cities on the list with scores of 4 points and above do seem to be those that are heading for trouble. Likewise, the scale does not appear to be giving high scores to those units which are actually very healthy. That being said, performance of the scale in distinguishing well depends to some extent on the benchmark that is used to demarcate “good” versus “bad” performance. In the tables presented earlier, all units with a 4 or higher were listed. With this fairly low threshold, this may result in several type I errors, in which units not headed for distress are mistakenly identified as heading for distress. To diminish these type I errors, one could employ a much higher threshold. If, however, the standard chosen is too high (like a 9), then several units heading for distress would not be identified (type II errors) until they were already in severe fiscal trouble.

The difficulty arises in the attempt to grade a unit as either "fiscally healthy" or "fiscally distressed" when experience indicates that there are matters of degree involved. One possible way to distinguish well and guard against the errors arising from attempts to classify in one of the two aforementioned categories is to grade the categories of fiscal health proportionately to the 10-point scale. In this way, the virtue of proportionality provides a means by which the scale can also distinguish well. One possibility is to divide the categories relative to the 10-point scale as follows:

Points from Scale	**Category**	**State Action**
0-4 points	Fiscally Healthy	No action
5 points	Fiscal Watch	Local government notified of relatively high score
6-7 points	Fiscal Warning	Local government notified and placed on published list for current and following year
8-10 points	Fiscal Emergency	Local government notified, placed on published list for current and following year, automatic consideration of review team

In 2001, only one jurisdiction would be classified as in a Fiscal Emergency; four would be in Fiscal Warning; six in Fiscal Watch. Once a unit has entered a watch, warning, or emergency category, the State could decide to have the unit maintain that status or higher for the following year as well. These categories are suggestive, but illustrate a possible graded scheme for allowing different levels of intervention. A careful evaluation of the point classification would be necessary. When evaluating the list included with this study, one should recall that our data collection for Michigan was not comprehensive.

While it is unlikely that there would be several more units scoring above 6 points, it is quite possible that several more unincluded units could score 4 and perhaps 5 points.

The time period of this study occurred over relatively good economic times, and therefore many more units could qualify for the distress categories should there be a significant economic downturn. These economic circumstances are impoortant to consider when establishing categories of distress. If a fairly low threshold is chosen for the initial category of distress (4 or 5 perhaps), these categories may swell in size in more difficult times. This could result in significant adminstrative cost increases, depending on the remedial consequence the State chooses for units in each category.

VII. Summary and Recommendations

Our evaluation of Michigan's current triggers as embodied in statute has uncovered several important limitations on their effectiveness in predicting fiscal distress of local government units. Data on each of the triggers are often unavailable, the triggers are not clearly connected to public finance theory, little sense of proportion emerges using these triggers, they do not appear to distinguish well, and most of the triggers are more suited to defining rather than giving an "early warning" of fiscal distress. Given these weaknesses we explored other possible indicators of fiscal distress which better met the desired criteria. Several individual indicators were identified and combined to form a 10-point scale of fiscal distress. The 10-point scale of fiscal distress appears to perform considerably better than the current system of triggers and importantly provides an "early

warning" of potential fiscal difficulties before they become obvious and more difficult to ameliorate.

Recommendations

1. The State should consider implementing the 10-point scale of fiscal distress described here. This consideration should include a systematic evaluation of the costs and benefits of its adoption.. While the scale does appear to perform relatively well in identifying units heading for fiscal distress, this research has not specifically addressed the issue of the net benefit of implementing such a system. The benefits of such a scale include possible aversion of serious fiscal distress by local entities and enhanced accountability of local officials to their constituencies. The costs required for implementing such a system are less than they otherwise might be as the data used are already publicly available. However, the State would bear administrative costs to assemble the data, apply the relevant formulas to create the scale, and publish the results with attendant remedial action.
2. The State should move to a system of electronic reporting and publishing of financial data. Several states have adopted a system in which local entities are able to electronically submit financial data to their monitoring agencies. Such a method of obtaining the data also facilitates the State's ability to publish local unit performance for the benefit of voters. Some states publish a report card for all local units that reports on indicators similar to those presented in this report. The disclosure of information serves to inform local officials, media and citizens on the healthy status of most local jurisdictions and to raise "red flags" for others.

Appendix I

Evaluation of Other Potential Indicators

This paper presents a 10-point scale for measuring fiscal distress using nine different indicators. The nine indicators included in this scale are certainly not exhaustive but appear to perform well individually and collectively in identifying units headed for fiscal distress. Other indicators could be developed which could be added to or substituted into the scale presented in this report. This appendix presents some examples of other possible indicators including millage rates, revenues per capita, expenditures per capita, and debt service expenditure.

Local Unit Millage Rates

A variable which is readily available but not included in our 10-point scale is local millage rates. Below are listed the 15 highest average millage rate jurisdictions included in our data set.

Name of Local Unit	Average Mill Rate (1991-2001)
Detroit city, Wayne County	**33.89**
Melvindale city, Wayne County	32.97
Ecorse city, Wayne County	**32.74**
Highland Park city, Wayne County	**30.75**
Hamtramck city, Wayne County	**29.32**
Pontiac city, Oakland County	**28.96**
Benton Harbor city, Berrien County	**27.27**
River Rouge city, Wayne County	**26.06**
Kalamazoo city, Kalamazoo County	25.03
Bay City city, Bay County	24.27
Hazel Park city, Oakland County	23.79
Taylor city, Wayne County	23.02
Mount Clemens city, Macomb County	22.92
Manistique city, Schoolcraft County	**21.17**
Coleman city, Midland County	20.15

Distressed units are again bolded, and it appears that there is a strong correlation between high millage rates and fiscal distress. The average mill rate for our sample is 16.5 for cities and villages with a standard deviation of 5.5. One standard deviation in the "wrong direction" would result in a benchmark of 22 mills, with units above this level receiving a 1 and units below receiving a 0.

There would likely be much debate about what this apparent connection means. Some are likely to see this result as causal, where businesses and individuals make decisions about location to avoid relatively high taxation. Indeed, the tax rates for distressed districts are in some cases more than double the average rate. This means that a $100,000 house in Detroit would pay about $800 more each year in property taxes than a $100,000 home in a local unit with an average mill rate. So some will regard high millage rates as the *cause* of fiscal distress in that it discourages new growth in the tax base and gives the incentive for residents and businesses to relocate to relatively lower tax areas. It should also be noted that several of these units with high property tax rates also have city income taxes (Detroit had a 3percent which is being reduced to 2percent, Highland Park is 2percent, Hamtramck is percent, and Pontiac is 1percent).Including this tax even further strengthens the connection between high taxation and fiscal distress.

Others will see the high millage rates mainly as the *effect* of fiscal distress. City officials reacting to revenue shortfalls may raise millage rates to increase revenues so that

financial obligations can still be met. It is also possible that certain types of local public services may be in greater demand in cities which are experiencing fiscal distress.

High millage rates may interact dynamically as both a cause and an effect of fiscal distress. In either case, high millage rates do appear to be an indicator of fiscal distress. There is a statistically significant correlation between high property taxes and two of the variables included in the 10-point scale, population growth and real taxable value growth. If one examines the relationship between a unit's millage rate in 1995 and that same unit's population growth for 1991-2000, one finds a correlation of –0.447. (Since millage rates remained very similar over the time period of our study, the relationship remains essentially the same if one uses a different year or an average value. The 1995 rate was chosen as representative.) This negative relationship means that the higher the millage rate, the lower the population growth. This relationship is statistically significant at the 0.01 level. As mentioned earlier, this result is strengthened if the city income tax is included.

Real taxable value growth is also related to millage rates. There is a –0.321 correlation between a unit's mill rate in 1995 and its real taxable value growth over the period 1991-2001. This result is also statistically significant at the 0.01 level. As with population, this negative relationship indicates that high millage rates are likely to be associated with low or declining real taxable value.

Our data allow some insight on whether this relationship is causal or effectual. By excluding the "troubled" units, this should diminish the correlation if the high millage rates are indeed the effect of fiscal distress since only relatively healthy units are examined. The results of this examination are very similar to those above. The relationship between mill rate in 1995 and population growth from 1991-2000 drops only slightly to –0.446. The correlation of millage rate with real taxable value growth decreases to -0.308, and both correlations remain significant at the 0.01 level. It appears that this provides some evidence for the causal influences of property taxes on population and taxable value growth.

Some have argued that local units in Michigan will continue to experience fiscal distress as long as the State retains limits on the revenue raising ability of these units. They presume that if local units were free to raise their taxation rates, then they would be more able to meet their financial needs. This line of argument is not supported by the data presented here. All units that have been taken over by the State have had abnormally large taxation rates, especially when city income taxes are included. Highland Park's real tax base decreased by nearly 56percent from 1991 to 2001. Flint's real tax base declined by nearly 27percent over this same period. Long-term solutions for these units require a restoration and growth in the tax base or a large reduction in their public sectors. Allowing local units to increase their taxes will likely exacerbate the situation, causing already unattractive locations to become even more so from a tax perspective.

To summarize this millage rate discussion, the relationship between high millage rates and fiscal distress is substantively and statistically significant. Millage rates could be included as a possible indicator. It is not the case that the impact of this variable is entirely absent from the 10-point scale, however. This variable has strong correlations with both population growth and real taxable value growth. The millage rate may simply be a more foundational indicator for both of these variables.

Revenues Per Capita and Expenditures Per Capita

Other potential indicators include revenues per capita and expenditures per capita. Our data collection allows us to calculate these variables, but they do not distinguish well among units. While it may be useful for a unit to examine its own trend on these variables, it is not as useful when comparing across units in the State. The chief difficulty is that very well-off units are among those with the highest scores on these variables. For example, while Detroit, Highland Park, Hamtramck, Ecorse, and River Rouge all scored very high on general fund per capita expenditures, it is also true that Bloomfield Hills had the second highest score on this variable. Indicator #4 is superior to these measures in that it examines the size of expenditures (which will almost always closely track revenues) relative to the size of the tax base. This eliminates the problem.

Debt Service Expenditures

Credit industry benchmarks do exist for this variable, and Michigan does collect some data on this variable. The chief difficulty is that it is not uniformly reported across units or even within units from year to year.

Indicators Not Calculated Due to Insufficient Data

Several other variables were not calculated due to insufficient or unavailable data. They include: restricted revenues, elastic tax revenues, one-time revenues, uncollected property taxes, revenue shortfalls, employees per capita, fixed costs, fringe benefits, liquidity, overlapping debt, unfunded pension liability, pension assets, accumulated employee leave, maintenance effort, capital outlay, depreciation expense, median age, personal income per capita, poverty households, residential development, vacancy rates, employment base, and business activity. To form these indicators, the State would have to identify appropriate data sources or begin collection efforts for them. While these may or may not be indicators of fiscal distress, it is worth noting that the indicators used to develop our 10-point scale have the virtue of examining "big-picture" variables, and they are based on readily available data.

APPENDIX II

Table 1: Percent Population Growth for Cities and Villages, 1991-2000

Highland Park city, Wayne County	**-0.168**	**Average: 0.023**
Munising city, Alger County	-0.127	**Std. Deviation: 0.058**
River Rouge city, Wayne County	**-0.126**	
Marquette city, Marquette County	-0.109	
Flint City, Genesee County	**-0.108**	
Saginaw city, Saginaw County	-0.103	
Benton Harbor city, Berrien County	**-0.092**	
Rogers City city, Presque Isle County	-0.092	
Bloomfield Hills city, Oakland County	-0.092	
Taylor city, Wayne County	-0.081	
Royal Oak city, Oakland County	-0.079	
Grand Haven city, Ottawa County	-0.078	
East Lansing city, Ingham County	-0.077	
Houghton city, Houghton County	-0.076	
Ecorse city, Wayne County	**-0.075**	
St. Clair Shores city, Macomb County	-0.070	
Detroit city, Wayne County	**-0.069**	
Hazel Park city, Oakland County	-0.064	
Clio city, Genesee County	**-0.063**	
Lansing city, Ingham County	**-0.063**	
Pontiac city, Oakland County	**-0.061**	
Mount Clemens city, Macomb County	-0.059	
Wayne city, Wayne County	-0.057	
Garden City city, Wayne County	-0.055	
Portland city, Ionia County	-0.054	
Perry city, Shiawassee County	-0.052	
Melvindale city, Wayne County	-0.046	
Warren city, Macomb County	-0.043	
Greenville city, Montcalm County	-0.042	
Bay City city, Bay County	-0.040	
Coloma city, Berrien County	-0.040	
Port Huron city, Saint Clair County	-0.038	
Huntington Woods city, Oakland County	-0.038	
Traverse City city, Grand Traverse County	-0.037	
Dearborn Heights city, Wayne County	-0.035	
Otsego city, Allegan County	-0.033	
Kalamazoo city, Kalamazoo County	-0.032	
Jackson city, Jackson County	-0.032	
Ludington city, Mason County	-0.029	
Flushing city, Genesee County	-0.022	
Adrian city, Lenawee County	-0.018	
Norway city, Dickinson County	-0.014	
Grayling city, Crawford County	-0.013	
Muskegon city, Muskegon County	-0.009	
Battle Creek city, Calhoun County	-0.009	

Watervliet city, Berrien County	-0.005
Roosevelt Park city, Muskegon County	-0.004
Clare city, Clare County	-0.004
Plainwell city, Allegan County	-0.003
Livonia city, Wayne County	-0.003
Reading city, Hillsdale County	-0.003
Algonac city, Saint Clair County	-0.002
Reed City city, Osceola County	-0.001
Westland city, Wayne County	0.009
North Muskegon city, Muskegon County	0.011
Ann Arbor city, Washtenaw County	0.024
Holly village, Oakland County	0.025
Farmington city, Oakland County	0.026
Coleman city, Midland County	0.031
Ferrysburg city, Ottawa County	0.032
Southfield city, Oakland County	0.032
Grand Rapids city, Kent County	0.043
Ionia city, Ionia County	0.045
Montague city, Muskegon County	0.047
Sterling Heights city, Macomb County	0.048
Woodhaven city, Wayne County	0.051
Gaylord city, Otsego County	0.053
Fremont city, Newaygo County	0.054
Manistique city, Schoolcraft County	**0.056**
Newaygo City, Newaygo County	0.059
Midland city, Midland County	0.060
Walled Lake city, Oakland County	0.063
Bridgman city, Berrien County	0.068
Wyoming city, Kent County	0.071
Grand Blanc city, Genesee County	0.074
Gladstone city, Delta County	0.080
Portage city, Kalamazoo County	0.082
Olivet city, Eaton County	0.083
Farmington Hills city, Oakland County	0.087
Rochester Hills city, Oakland County	0.089
Sturgis city, Saint Joseph County	0.092
Milford village, Oakland County	0.096
Troy city, Oakland County	0.096
Dearborn city, Wayne County	0.099
Mt. Pleasant, Isabella County	0.104
Flat Rock city, Wayne County	0.106
Gladwin city, Gladwin County	0.120
Eaton Rapids city, Eaton County	0.125
Tecumseh city, Lenawee County	0.126
Saugatuck city, Allegan County	0.129
Williamston city, Ingham County	**0.160**
Kentwood city, Kent County	0.161
White Cloud city, Newaygo County	0.207
Hamtramck city, Wayne County	**0.246**
Novi city, Oakland County	0.342
Fennville city, Allegan County	0.433

Rochester city, Oakland County	0.466
South Lyon city, Oakland County	0.488

Table 2: Percent Population Growth for Townships, 1991-2000

Kinross charter township, Chippewa County	-0.145	**Average: 0.1777**
Bridgeport charter township, Saginaw County	-0.083	**Std. Deviation: 0.097**
Buena Vista Charter township, Saginaw County	-0.051	
Flint township, Genesee County	-0.011	
Ash township, Monroe County	0.000	
Genesee township, Genesee County	0.001	
Oregon township, Lapeer County	0.010	
Tittabawassee township, Saginaw County	0.012	
Lincoln charter township, Berrien County	0.020	
Hampton township, Bay County	0.034	
Niles township, Berrien County	0.045	
Monitor township, Bay County	0.056	
Fruitport charter township, Muskegon County	0.072	
Royal Oak township, Oakland County	**0.074**	
Tallmadge township, Ottawa County	0.082	
Spring Arbor township, Jackson County	0.086	
Berlin charter township, Monroe County	0.090	
Clay township, Saint Clair County	0.098	
Grayling township, Crawford County	0.113	
Monroe charter township, Monroe County	0.117	
Gaines township, Genesee County	0.119	
DeWitt Charter township, Clinton County	0.125	
Dexter township, Washtenaw County	0.131	
Owosso township, Shiawasee County	0.135	
Antwerp township, Van Buren County	0.141	
Frenchtown township, Monroe County	0.141	
Gunplain township, Allegan County	0.147	
West Bloomfield township, Oakland County	0.169	
Madison charter township, Lenawee County	0.172	
Peninsula township, Grand Traverse County	0.177	
Plainfield township, Kent County	0.178	
Tyrone township, Livingston County	0.192	
White Lake township, Oakland County	0.197	
Bruce township, Macomb County	0.208	
Addison township, Oakland County	0.211	
Almont township, Lapeer County	0.253	
Fenton township, Genesee County	0.255	
Park township, Ottawa County	0.256	
Groveland township, Oakland County	0.261	
Richland township, Kalamazoo County	0.264	
Garfield township, Grand Traverse County	0.278	
Oakfield township, Kent County	0.289	
Long Lake township, Grand Traverse County	0.294	
Caseville township, Huron County	0.317	
Marion township, Livingston County	0.324	
St. Clair township, Saint Clair County	0.338	
Washington township, Macomb County	0.434	
Allendale township, Ottawa County	0.577	
Zeeland charter township, Ottawa County	0.659	
Macomb township, Macomb County	1.025	

Table 3: Real Taxable Value Growth for Cities and Villages, 1991-2000 (1991 base)

Highland Park city, Wayne County	**-0.557**	**Average: 0.267**
Flint City, Genesee County	**-0.272**	**Std. Deviation: 0.307**
Saginaw city, Saginaw County	-0.041	
River Rouge city, Wayne County	**-0.029**	
Midland city, Midland County	-0.006	
Fremont city, Newaygo County	0.003	
Farmington city, Oakland County	0.013	
Lansing city, Ingham County	0.022	
Detroit city, Wayne County	**0.031**	
Pontiac city, Oakland County	**0.036**	
Ecorse city, Wayne County	**0.036**	
Melvindale city, Wayne County	0.038	
Southfield city, Oakland County	0.042	
Warren city, Macomb County	0.051	
St. Clair Shores city, Macomb County	0.062	
Munising city, Alger County	0.078	
Jackson city, Jackson County	0.080	
Rogers City city, Presque Isle County	0.083	
Bloomfield Hills city, Oakland County	0.101	
Hazel Park city, Oakland County	0.109	
Dearborn city, Wayne County	0.111	
Mount Clemens city, Macomb County	0.116	
Ann Arbor city, Washtenaw County	0.119	
Livonia city, Wayne County	0.123	
Mt. Pleasant, Isabella County	0.126	
Kalamazoo city, Kalamazoo County	0.126	
Muskegon city, Muskegon County	0.126	
North Muskegon city, Muskegon County	0.130	
Roosevelt Park city, Muskegon County	0.130	
East Lansing city, Ingham County	0.133	
Dearborn Heights city, Wayne County	0.139	
Olivet city, Eaton County	0.139	
Farmington Hills city, Oakland County	0.140	
Reading city, Hillsdale County	0.141	
Garden City city, Wayne County	0.143	
Clare city, Clare County	0.147	
Royal Oak city, Oakland County	0.149	
Norway city, Dickinson County	0.152	
Woodhaven city, Wayne County	0.154	
Grayling city, Crawford County	0.155	
Grand Rapids city, Kent County	0.156	
Troy city, Oakland County	0.160	
Wayne city, Wayne County	0.177	
Plainwell city, Allegan County	0.181	
Huntington Woods city, Oakland County	0.182	
Watervliet city, Berrien County	0.184	
Adrian city, Lenawee County	0.189	
Hamtramck city, Wayne County	**0.190**	
Algonac city, Saint Clair County	0.192	
Wyoming city, Kent County	0.196	

Table 3 (continued)

Clio city, Genesee County	**0.198**
White Cloud city, Newaygo County	0.199
Fennville city, Allegan County	0.205
Bay City city, Bay County	0.221
Coloma city, Berrien County	0.224
Sterling Heights city, Macomb County	0.232
Coleman city, Midland County	0.236
Battle Creek city, Calhoun County	0.246
Manistique city, Schoolcraft County	**0.252**
Taylor city, Wayne County	0.257
Ludington city, Mason County	0.257
Grand Haven city, Ottawa County	0.264
Greenville city, Montcalm County	0.265
Sturgis city, Saint Joseph County	0.268
Traverse City city, Grand Traverse County	0.269
Port Huron city, Saint Clair County	0.271
Ionia city, Ionia County	0.272
Rochester Hills city, Oakland County	0.277
Grand Blanc city, Genesee County	0.280
Gladwin city, Gladwin County	0.285
Flushing city, Genesee County	0.291
Walled Lake city, Oakland County	0.300
Portland city, Ionia County	0.301
Ferrysburg city, Ottawa County	0.303
Westland city, Wayne County	0.310
Saugatuck city, Allegan County	0.341
Portage city, Kalamazoo County	0.359
Otsego city, Allegan County	0.369
Kentwood city, Kent County	0.374
Tecumseh city, Lenawee County	0.386
Reed City city, Osceola County	0.411
Perry city, Shiawassee County	0.434
Eaton Rapids city, Eaton County	0.440
Bridgman city, Berrien County	0.445
Holly village, Oakland County	0.469
Gladstone city, Delta County	0.481
Houghton city, Houghton County	0.516
Milford village, Oakland County	0.545
Novi city, Oakland County	0.565
Gaylord city, Otsego County	0.622
Williamston city, Ingham County	**0.638**
Montague city, Muskegon County	0.748
Benton Harbor city, Berrien County	**0.813**
Newaygo City, Newaygo County	0.973
Rochester city, Oakland County	1.085
South Lyon city, Oakland County	1.124
Flat Rock city, Wayne County	1.535
Marquette city, Marquette County	1.666

Table 4: Real Taxable Value Growth for Townships, 1991-2000 (1991 base)

Frenchtown township, Monroe County	-0.203	**Average: 0.525**
Hampton township, Bay County	-0.173	**Std. Deviation: 0.402**
Royal Oak township, Oakland County	**0.050**	
Bridgeport charter township, Saginaw County	0.064	
Genesee township, Genesee County	0.109	
Buena Vista Charter township, Saginaw County	0.112	
Kinross charter township, Chippewa County	0.136	
Flint township, Genesee County	0.208	
Owosso township, Shiawasee County	0.235	
Clay township, Saint Clair County	0.240	
Niles township, Berrien County	0.250	
Gunplain township, Allegan County	0.256	
Monroe charter township, Monroe County	0.271	
West Bloomfield township, Oakland County	0.344	
Lincoln charter township, Berrien County	0.351	
Dexter township, Washtenaw County	0.375	
Spring Arbor township, Jackson County	0.379	
Tallmadge township, Ottawa County	0.386	
Madison charter township, Lenawee County	0.406	
Ash township, Monroe County	0.410	
Monitor township, Bay County	0.444	
Grayling township, Crawford County	0.456	
Oregon township, Lapeer County	0.459	
Berlin charter township, Monroe County	0.471	
Park township, Ottawa County	0.486	
Groveland township, Oakland County	0.490	
Caseville township, Huron County	0.493	
Gaines township, Genesee County	0.495	
Plainfield township, Kent County	0.502	
Richland township, Kalamazoo County	0.562	
Addison township, Oakland County	0.565	
White Lake township, Oakland County	0.587	
DeWitt Charter township, Clinton County	0.591	
Fruitport charter township, Muskegon County	0.597	
Antwerp township, Van Buren County	0.598	
Peninsula township, Grand Traverse County	0.612	
Long Lake township, Grand Traverse County	0.659	
Fenton township, Genesee County	0.673	
Allendale township, Ottawa County	0.716	
Tyrone township, Livingston County	0.753	
St. Clair township, Saint Clair County	0.757	
Marion township, Livingston County	0.784	
Garfield township, Grand Traverse County	0.803	
Almont township, Lapeer County	0.834	
Tittabawassee township, Saginaw County	0.842	
Oakfield township, Kent County	0.867	
Washington township, Macomb County	1.186	
Zeeland charter township, Ottawa County	1.187	
Bruce township, Macomb County	1.277	
Macomb township, Macomb County	2.314	

Table 5: Average General Fund Expenditures as a Percent of Taxable Value (Cities and Villages)

Benton Harbor city, Berrien County	**0.261**	**Average: 0.0347**
Detroit city, Wayne County	**0.209**	**Std. Deviation: 0.0353**
Highland Park city, Wayne County	**0.158**	
Hamtramck city, Wayne County	**0.102**	
Pontiac city, Oakland County	**0.065**	
Saginaw city, Saginaw County	0.054	
Lansing city, Ingham County	0.052	
Flint City, Genesee County	**0.052**	
Ecorse city, Wayne County	**0.051**	
Melvindale city, Wayne County	0.051	
Bay City city, Bay County	0.046	
Jackson city, Jackson County	0.046	
Coleman city, Midland County	0.045	
Hazel Park city, Oakland County	0.045	
Marquette city, Marquette County	0.042	
Ionia city, Ionia County	0.041	
River Rouge city, Wayne County	**0.041**	
Manistique city, Schoolcraft County	**0.040**	
East Lansing city, Ingham County	0.039	
Battle Creek city, Calhoun County	0.039	
Kalamazoo city, Kalamazoo County	0.039	
Norway city, Dickinson County	0.039	
Portland city, Ionia County	0.037	
Watervliet city, Berrien County	0.037	
Clio city, Genesee County	**0.036**	
Gladstone city, Delta County	0.036	
Port Huron city, Saint Clair County	0.035	
Wayne city, Wayne County	0.035	
Taylor city, Wayne County	0.034	
Mount Clemens city, Macomb County	0.034	
Munising city, Alger County	0.034	
Houghton city, Houghton County	0.034	
White Cloud city, Newaygo County	0.033	
Muskegon city, Muskegon County	0.033	
Clare city, Clare County	0.033	
Grayling city, Crawford County	0.032	
Gladwin city, Gladwin County	0.032	
Coloma city, Berrien County	0.032	
Grand Rapids city, Kent County	0.030	
Reading city, Hillsdale County	0.030	
Reed City city, Osceola County	0.030	
Garden City city, Wayne County	0.030	
Adrian city, Lenawee County	0.030	
Olivet city, Eaton County	0.028	
Newaygo City, Newaygo County	0.028	
Holly village, Oakland County	0.027	
Rogers City city, Presque Isle County	0.027	
Mt. Pleasant, Isabella County	0.027	
Flat Rock city, Wayne County	0.027	

Table 5 (continued)

Sturgis city, Saint Joseph County	0.026
Perry city, Shiawassee County	0.026
Westland city, Wayne County	0.025
Ann Arbor city, Washtenaw County	0.025
Eaton Rapids city, Eaton County	0.025
Woodhaven city, Wayne County	0.025
Dearborn Heights city, Wayne County	0.025
Fremont city, Newaygo County	0.025
Greenville city, Montcalm County	0.024
Walled Lake city, Oakland County	0.024
Ludington city, Mason County	0.024
Algonac city, Saint Clair County	0.024
Montague city, Muskegon County	0.024
Traverse City city, Grand Traverse County	0.024
Tecumseh city, Lenawee County	0.023
Grand Haven city, Ottawa County	0.023
Huntington Woods city, Oakland County	0.022
Dearborn city, Wayne County	0.022
Warren city, Macomb County	0.021
Williamston city, Ingham County	**0.021**
St. Clair Shores city, Macomb County	0.019
Roosevelt Park city, Muskegon County	0.019
Southfield city, Oakland County	0.019
Bridgman city, Berrien County	0.018
Otsego city, Allegan County	0.018
Saugatuck city, Allegan County	0.018
Sterling Heights city, Macomb County	0.018
Flushing city, Genesee County	0.018
Farmington city, Oakland County	0.018
Rochester city, Oakland County	0.017
North Muskegon city, Muskegon County	0.017
Milford village, Oakland County	0.017
Royal Oak city, Oakland County	0.017
Gaylord city, Otsego County	0.017
Grand Blanc city, Genesee County	0.016
South Lyon city, Oakland County	0.015
Wyoming city, Kent County	0.013
Livonia city, Wayne County	0.013
Portage city, Kalamazoo County	0.013
Midland city, Midland County	0.012
Farmington Hills city, Oakland County	0.011
Ferrysburg city, Ottawa County	0.011
Kentwood city, Kent County	0.010
Troy city, Oakland County	0.010
Novi city, Oakland County	0.009
Bloomfield Hills city, Oakland County	0.007
Rochester Hills city, Oakland County	0.006

Table 6: Average General Fund Expenditures as a Percent of Taxable Value (Townships)

Royal Oak township, Oakland County	**0.018**	**Average: 0.0065**
Buena Vista Charter township, Saginaw County	0.018	**Std. Deviation: 0.0039**
Kinross charter township, Chippewa County	0.016	
Genesee township, Genesee County	0.015	
Bridgeport charter township, Saginaw County	0.013	
DeWitt Charter township, Clinton County	0.011	
Allendale township, Ottawa County	0.010	
Flint township, Genesee County	0.010	
Monroe charter township, Monroe County	0.008	
Hampton township, Bay County	0.008	
West Bloomfield township, Oakland County	0.008	
Fruitport charter township, Muskegon County	0.007	
Plainfield township, Kent County	0.006	
Zeeland charter township, Ottawa County	0.006	
Tallmadge township, Ottawa County	0.006	
Spring Arbor township, Jackson County	0.006	
Madison charter township, Lenawee County	0.006	
White Lake township, Oakland County	0.006	
Oregon township, Lapeer County	0.006	
Oakfield township, Kent County	0.006	
Monitor township, Bay County	0.005	
Gunplain township, Allegan County	0.005	
Tittabawassee township, Saginaw County	0.005	
Gaines township, Genesee County	0.005	
Niles township, Berrien County	0.005	
Grayling township, Crawford County	0.005	
Owosso township, Shiawasee County	0.005	
Park township, Ottawa County	0.005	
Garfield township, Grand Traverse County	0.004	
Groveland township, Oakland County	0.004	
Berlin charter township, Monroe County	0.004	
Fenton township, Genesee County	0.004	
St. Clair township, Saint Clair County	0.004	
Long Lake township, Grand Traverse County	0.004	
Addison township, Oakland County	0.004	
Richland township, Kalamazoo County	0.004	
Washington township, Macomb County	0.004	
Lincoln charter township, Berrien County	0.004	
Tyrone township, Livingston County	0.003	
Antwerp township, Van Buren County	0.003	
Clay township, Saint Clair County	0.003	
Macomb township, Macomb County	0.003	
Almont township, Lapeer County	0.003	
Marion township, Livingston County	0.003	
Frenchtown township, Monroe County	0.003	
Ash township, Monroe County	0.003	
Dexter township, Washtenaw County	0.003	
Bruce township, Macomb County	0.002	
Caseville township, Huron County	0.002	
Peninsula township, Grand Traverse County	0.002	

Table 7: Average General Long-term Debt as a Percent of Taxable Value, Cities and Villages

Detroit city, Wayne County	**0.185**	**Average: 0.0247**
Benton Harbor city, Berrien County	**0.132**	**Std. Deviation: 0.035**
Manistique city, Schoolcraft County	**0.121**	
Highland Park city, Wayne County	**0.106**	
Hamtramck city, Wayne County	**0.084**	
Taylor city, Wayne County	0.082	
Ionia city, Ionia County	0.077	
Bay City city, Bay County	0.075	
Pontiac city, Oakland County	**0.055**	
Port Huron city, Saint Clair County	0.053	
Marquette city, Marquette County	0.050	
Norway city, Dickinson County	0.049	
Lansing city, Ingham County	0.046	
Kalamazoo city, Kalamazoo County	0.041	
Farmington city, Oakland County	0.041	
Gladwin city, Gladwin County	0.041	
Grand Haven city, Ottawa County	0.040	
Rochester city, Oakland County	0.040	
Battle Creek city, Calhoun County	0.039	
Mt. Pleasant, Isabella County	0.035	
River Rouge city, Wayne County	**0.035**	
South Lyon city, Oakland County	0.034	
Fremont city, Newaygo County	0.033	
Garden City city, Wayne County	0.032	
Novi city, Oakland County	0.031	
Rogers City city, Presque Isle County	0.031	
Muskegon city, Muskegon County	0.030	
Newaygo City, Newaygo County	0.027	
Otsego city, Allegan County	0.027	
Wayne city, Wayne County	0.026	
Bridgman city, Berrien County	0.025	
Perry city, Shiawassee County	0.025	
Gaylord city, Otsego County	0.025	
Saginaw city, Saginaw County	0.024	
Flint City, Genesee County	**0.024**	
Saugatuck city, Allegan County	0.024	
Houghton city, Houghton County	0.024	
Ecorse city, Wayne County	**0.023**	
Clare city, Clare County	0.023	
Eaton Rapids city, Eaton County	0.023	
Hazel Park city, Oakland County	0.022	
Portage city, Kalamazoo County	0.022	
Huntington Woods city, Oakland County	0.021	
East Lansing city, Ingham County	0.021	
Rochester Hills city, Oakland County	0.020	
Ann Arbor city, Washtenaw County	0.020	
Gladstone city, Delta County	0.019	
Jackson city, Jackson County	0.019	

Williamston city, Ingham County	**0.019**
Woodhaven city, Wayne County	0.018

Table 7 (continued)

Melvindale city, Wayne County	0.018
Flat Rock city, Wayne County	0.017
Mount Clemens city, Macomb County	0.017
Munising city, Alger County	0.017
Grand Blanc city, Genesee County	0.016
Sterling Heights city, Macomb County	0.015
Farmington Hills city, Oakland County	0.015
Grand Rapids city, Kent County	0.015
Tecumseh city, Lenawee County	0.014
Southfield city, Oakland County	0.014
Westland city, Wayne County	0.014
Livonia city, Wayne County	0.014
Wyoming city, Kent County	0.014
Royal Oak city, Oakland County	0.013
Clio city, Genesee County	**0.013**
White Cloud city, Newaygo County	0.012
St. Clair Shores city, Macomb County	0.012
Montague city, Muskegon County	0.011
Warren city, Macomb County	0.011
Ludington city, Mason County	0.010
Midland city, Midland County	0.009
Bloomfield Hills city, Oakland County	0.009
Plainwell city, Allegan County	0.009
Greenville city, Montcalm County	0.008
Dearborn Heights city, Wayne County	0.008
Troy city, Oakland County	0.008
Walled Lake city, Oakland County	0.008
Reed City city, Osceola County	0.008
Dearborn city, Wayne County	0.008
Flushing city, Genesee County	0.007
North Muskegon city, Muskegon County	0.007
Coloma city, Berrien County	0.006
Adrian city, Lenawee County	0.005
Ferrysburg city, Ottawa County	0.005
Traverse City city, Grand Traverse County	0.004
Sturgis city, Saint Joseph County	0.004
Milford village, Oakland County	0.004
Portland city, Ionia County	0.003
Reading city, Hillsdale County	0.003
Holly village, Oakland County	0.003
Roosevelt Park city, Muskegon County	0.002
Algonac city, Saint Clair County	0.002
Kentwood city, Kent County	0.001
Watervliet city, Berrien County	0.001
Grayling city, Crawford County	0.001
Coleman city, Midland County	0.001
Fennville city, Allegan County	0
Olivet city, Eaton County	0

Table 8: Average General Long-term Debt as a Percent of Taxable Value,Townships

Allendale township, Ottawa County	0.058	**Average: 0.0086**
Dexter township, Washtenaw County	0.050	**Std. Deviation: 0.0136**
Zeeland charter township, Ottawa County	0.042	
Marion township, Livingston County	0.042	
Monitor township, Bay County	0.030	
Flint township, Genesee County	0.026	
Tallmadge township, Ottawa County	0.019	
Kinross charter township, Chippewa County	0.017	
Ash township, Monroe County	0.012	
Buena Vista Charter township, Saginaw County	0.010	
Tittabawassee township, Saginaw County	0.010	
Berlin charter township, Monroe County	0.009	
Bridgeport charter township, Saginaw County	0.008	
White Lake township, Oakland County	0.008	
Tyrone township, Livingston County	0.006	
Richland township, Kalamazoo County	0.006	
West Bloomfield township, Oakland County	0.006	
Peninsula township, Grand Traverse County	0.005	
DeWitt Charter township, Clinton County	0.005	
Monroe charter township, Monroe County	0.004	
Hampton township, Bay County	0.004	
Lincoln charter township, Berrien County	0.004	
Frenchtown township, Monroe County	0.003	
Fruitport charter township, Muskegon County	0.003	
Washington township, Macomb County	0.003	
Macomb township, Macomb County	0.002	
Fenton township, Genesee County	0.002	
Genesee township, Genesee County	0.002	
Groveland township, Oakland County	0.002	
Madison charter township, Lenawee County	0.002	
Clay township, Saint Clair County	0.001	
Royal Oak township, Oakland County	**0.001**	
Bruce township, Macomb County	0.001	
Garfield township, Grand Traverse County	0.001	
Oregon township, Lapeer County	0.001	
Park township, Ottawa County	0.001	
Caseville township, Huron County	0.001	
Gaines township, Genesee County	0.0008	
Long Lake township, Grand Traverse County	0.0007	
Gunplain township, Allegan County	0.0006	
Addison township, Oakland County	0.0005	
Plainfield township, Kent County	0.0005	
Oakfield township, Kent County	0.0003	
Niles township, Berrien County	0.0002	
Owosso township, Shiawasee County	0.0002	
Almont township, Lapeer County	0.0002	
Grayling township, Crawford County	0.0001	
Spring Arbor township, Jackson County	0	

St. Clair township, Saint Clair County	0
Antwerp township, Van Buren County	0

Bibliography

Advisory Commission on Intergovernmental Relations. City Financial Emergencies: The Intergovernmental Dimension. Washington, D.C.: U.S. Government Printing Office, 1973.

Aronson, J. Richard. Municipal Fiscal Indicators. Washington, D.C.: Urban Consortium, 1979.

Aronson, J. Richard & King, A.E. "Is There a Fiscal Crisis Outside of New York?" National Tax Journal, June, 1973.

Carr, James H. (Ed.) Crisis and Constraint in Municipal Finance: Local Fiscal Prospects in a Period of Uncertainty. New Brunswick, NJ: Center for Urban Policy Research, 1984.

Citizens' Research Council of Michigan. 2000. Avoiding Local Government Financial Crisis: The Role of State Oversight. http://www.crcmich.org.

Clark, Terry Nichols (Ed.) Monitoring Local Governments: How Personal Computers Can Help Systematize Municipal Fiscal Analysis. Dubuque, Iowa: Kendall/Hunt Publishing, 1990.

Cuciti, Peggy, "City Need and the Responsiveness of Federal Grant Programs," Report for the U.S. House of Representatives Committee on Banking, Finance, and Urban Affairs, Subcommittee on the City, 95th Congress, 2nd Session, Washington, D.C.: U.S. Government Printing Office, 1978.

Dommel, P.R. & Nathan, R.P. "Measuring Community Distress in the United States," (Paper presented to Seminar on Measuring Local Government Expenditure Needs, Denmark, December, 1978.)

Downs, Anthony. 1972. "Up and Down with Ecology: The "Issue-Attention Cycle," The Public Interest 28: 38-50.

Groves, Sanford M. & Valente, Maureen G. Evaluating Financial Condition: A Handbook for Local Government. Washington, D.C.: International City/County Management Association, 1994.

Howell, James M. & Stamm, Charles F. Urban Fiscal Stress: A Comparative Analysis of 66 U.S. Cities. Lexington, MA: Lexington Books, 1979.

Kamer, Pearl M. Crisis in Urban Public Finance: a Case Study of Thirty-eight Cities. New York: Praeger, 1983.

Levin, Charles H. & Rubin, Irene (Eds.) "Fiscal Stress and Public Policy." Sage Yearbooks in Politics and Public Policy, Vol. 9. Beverly Hills: Sage, 1980.

Municipal Finance Officers Association. Is Your City Heading for Financial Difficulty: A Guidebook for Small Cities and Other Governmental Units. Chicago, 1978.

Pammer, William J., Jr. Managing Fiscal Strain in Major American Cities: Understanding Retrenchment in the Public Sector. New York: Greenwood Press, 1990.

Rubin, Irene S. Running in the Red: The Political Dynamics of Urban Fiscal Stress. Albany: State University of New York Press, 1982.

U.S. Department of the Treasury. Report on the Fiscal Impact of the Economic Stimulus Package on 48 Large Urban Governments. Washington, D.C.: Government Printing Office, 1978.

For more information about this report, contact Carol S. Weissert, Director of the Institute for Public Policy and Social Research at 517-355-6672 or weissert@msu.edu.

IPPSR
Institute for Public Policy & Social Research

Institute for Public Policy
& Social Research
Michigan State University
321 Berkey Hall
East Lansing, MI 48824-1111
Telephone: 517/355-6672
Facsimile: 517/432-1544
Website: www.ippsr.msu.edu

IPPSR is the nonpartisan public policy network at Michigan State University. The Institute is dedicated to connecting legislators, scholars, and practitioners through applied research, policy forums, and political leadership instruction.