KANSAS LEGISLATIVE
DIVISION of
POST AUDIT

An Economic Development Incentive Evaluation Report Presented to the Legislative Post Audit Committee

Industrial Revenue Bond Property Tax Exemptions

March 2022

Report Number: R-22-005

Introduction

This audit satisfies requirements in K.S.A. 46-1137. The Legislative Post Audit Committee authorized us to evaluate this incentive at its June 1, 2020 meeting.

Objectives, Scope, & Methodology

State law (K.S.A. 46-1137) requires us to include 3 components in our evaluations of the state's economic development tax incentives: a description of the incentive, a literature review, and an estimate of the incentive's economic and fiscal impact.

Our main objective was to answer the following question:

1. What are the economic and fiscal impacts of selected industrial revenue bond exemptions (IRBXs)?

To answer this question, we talked to officials and reviewed information from the Board of Tax Appeals (BOTA) and the Departments of Commerce and Revenue. We also talked to and reviewed information from several local government and school district officials across the state. We reviewed data on all industrial revenue bonds issued and exemptions granted during 2005-2020. We selected 8 exemptions to review in detail. That review included the use of a research-based simulation model. We consulted with economic development experts who helped us determine our analysis methods and interpret our modeling results.

A lack of comprehensive data limited our work. We relied on local governments' property tax exemption information and businesses' job creation estimates to model the effects of the 8 IRBXs we selected. More specific details about the scope of our work and the methods we used are included throughout the report and in **Appendix B**. This includes significant assumptions we relied on for our analysis.

Important Disclosures

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. Overall, we believe the evidence obtained provides a reasonable basis for our findings and conclusions based on those audit objectives.

Audit standards require us to report our work on internal controls relevant to our audit objectives. We evaluated internal controls at selected cities and counties, BOTA, and Revenue for ensuring IRB and IRBX data accuracy. Audit standards also require us to report deficiencies we identified through this work. BOTA didn't have controls to ensure the accuracy of the pre-project estimates cities, counties, and businesses submit. Further, most entities we talked to didn't track comprehensive data about IRBXs' outcomes (e.g., actual taxes exempted and jobs created).

Our audit reports and podcasts are available on our website (www.kslpa.org).

Background

Incentive Description

Cities and counties issue industrial revenue bonds (IRBs) to help finance business facilities.

- The Kansas Legislature authorized cities to issue IRBs in 1961. It expanded this authority to counties in 1981. The Kansas Development Finance Authority (KDFA) can also issue IRBs, but this is rare.

- Cities and counties issue IRBs to help finance business facilities in their communities. This includes purchasing, building, expanding, equipping, or remodeling facilities. Statute allows nearly any industry to use IRBs.

- The business uses the bond proceeds to finance its facility and is responsible for repaying it. By law, cities and counties can't repay IRBs with other revenue.

- IRBs are beneficial to businesses, bondholders, and communities. Businesses using IRBs benefit from cheaper financing. IRB interest rates are usually lower than other options, like loans or other bond types. IRB bondholders may get income tax breaks on the interest they earn, so they may accept lower interest rates. Communities benefit from enhanced business facilities.

Cities and counties can grant businesses using IRBs property tax exemptions (IRBXs) for up to 10 years.

- Property tax revenues go to many government entities (primarily cities, counties, and school districts). About 1% goes to the state. Some areas also have special purpose districts like fire districts or community colleges that get property tax revenues.

- In addition to issuing a bond, statute lets cities and counties grant IRB property tax exemptions (IRBXs). Cities and counties can grant a property tax exemption for nearly any IRB-financed property.

- Cities and counties decide how much property tax to exempt, up to 100%. They also decide how long the IRBX will last, up to 10 years. After 10 years, the business would pay full property tax on the enhanced property.

- KDFA and Board of Tax Appeals (BOTA) officials told us getting the IRBX is one of IRBs' main benefits for businesses.

- Businesses using IRBs also benefit from a sales tax exemption, but we didn't review that benefit as part of our work.

State law doesn't include any goals for IRBXs.

- Statute broadly says IRBs should stimulate and develop Kansas' general welfare and economic prosperity. It says they should assist in the location, expansion, and retention of businesses and industry. And they should promote economic stability through things like greater employment and industry diversification.

- Statute is silent on the purpose or goals of industrial revenue bond exemptions (IRBXs). For example, although most IRBXs we reviewed included job creation goals, statute doesn't explicitly require new jobs.

- Cities and counties decide which projects can use IRBs or get IRBXs. Local officials told us they prioritize different things. For instance, Wichita officials said they prioritize certain industries, like aerospace and information technology. By contrast, Marion officials said they prioritize historic buildings.

Cities and counties administer and oversee IRBs and IRBXs, but no one collects comprehensive data about what happens after IRBXs are granted.

- Cities and counties administer and oversee their own IRB and IRBX programs with little state-level involvement.

    - When a city or county grants an IRBX, they must file some information with BOTA. That information includes applications, legal documentation, and pre-project job creation and property tax exemption estimates.

    - Statute requires BOTA to collect these statements and ensure they're complete. It doesn't require BOTA to review their accuracy or approve or deny them.

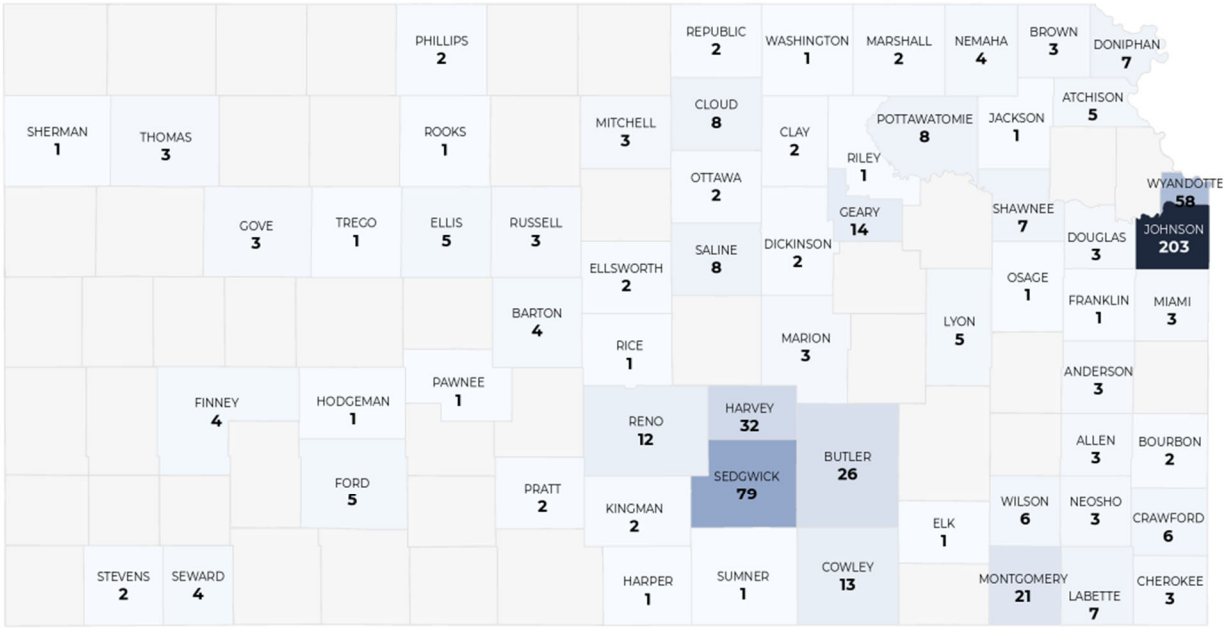
- As a result, neither BOTA nor most of the 8 cities and counties we talked to collect comprehensive IRBX data or track what actually happens after an IRBX is granted. As a result, we generally used pre-project job creation estimates from BOTA and property tax exemption data from county appraisers.

During 2005-2020, about 640 IRBXs were granted, and we estimate they reduced statewide property tax revenues by roughly $100 million each year.

- We reviewed the available BOTA and Department of Revenue data to determine how many IRBXs were granted during 2005-2020.

- **Figure 1** shows that cities and counties granted about 640 IRBXs during 2005-2020. 63 counties (60%) had at least 1 IRBX in these years. But more than half of all IRBXs were granted by Johnson, Sedgwick, and Wyandotte counties. Johnson County had the most of any single county (203, or 32%).

Figure 1: During 2005-2020, 3 counties granted more than half of all IRBXs.



Source: LPA analysis of Board of Tax Appeals and Department of Revenue Data (audited).

- We had to estimate how much IRBXs reduced property tax revenues statewide. BOTA and Revenue hold data on the total appraised value of properties with IRBXs in each county. But these data didn't include the details needed to determine how much property tax this represented. This includes things like the mill levy and property classification (e.g., commercial, agricultural). As such, we used countywide average mill levies and different possible property classifications to create a range of exempted taxes.

- We estimate these IRBXs may have reduced property tax revenues across the state by up to about $1.2-$1.5 billion total over 2005-2020 (or roughly $100 million per year). Because no comprehensive IRBX data exist, we don't know whether the available data reflect a 100% property tax exemption for each project. This isn't always the case, so the actual amount may be less.

- The property tax exempted mostly affects local government revenues. But about 1% (roughly $1 million per year) would be state property tax revenue.

Selected IRBXs' Economic Activity and Tax Revenue Effects

We modeled 8 selected IRBXs with economic development experts' help.

- To evaluate IRBXs' economic and fiscal impacts, we used a research-based simulation model. Dr. Timothy Bartik of the non-profit W.E. Upjohn Institute for Employment Research created it. He's a leading expert on the impacts of economic development incentives. He helped ensure we used his model correctly.

- Other models might yield different results, but we thought Dr. Bartik's model best fit IRBX incentives. It accounts for the possibility incentives may not change business behavior. And it reflects opportunity costs related to paying for incentives. Like most models, Dr. Bartik's model focuses on jobs created and their effects on public finances and the private economy. IRBX is not a job creation tool, but nearly all IRBXs we reviewed involved projects that projected creating new jobs.

- We also consulted with 3 professors from Kansas State University and the University of Kansas. **Appendix D** lists them. They provided input on our methods, including which IRBXs to evaluate, which model to use, and how to use it. They also helped us interpret and report our analysis results.

- We didn't have time or data to model every IRBX. We reviewed 8 of the 640 IRBXs granted during 2005-2020. **Appendix E** details the 8 projects. We looked at large and small businesses from different industries. Our selection includes both urban and rural counties, different years, and various bond amounts. We modeled these IRBXs over 30 years to give long-term effects time to accrue.

- We don't know how these 8 IRBXs compare to the rest or how closely they will match the assumptions we made. For example, we don't know if businesses will create the number of jobs they projected or if those jobs will remain for 30 years. Thus, we can't draw conclusions about all exemptions or the IRBX program overall.

- There are multiple ways to analyze an incentive's economic and fiscal impact. This is just one. That limits the conclusions we can draw about the IRBX program, but we think our analysis still provides useful information for thinking about individual exemptions.

The model estimates the economic and fiscal impacts of each IRBX from two perspectives—economic activity and tax revenues.

- An IRBX's cost reflects the property tax revenues the city, county, state, and other taxing districts forego for up to 10 years. Governments bear this cost in the hope it will produce positive returns. These returns can come in 2 areas: private sector economic activity and public sector tax revenues.

- Economic activity measures the economic effects businesses generate when they create jobs. This includes the jobs and the secondary effects these workers have on things like real estate values and other businesses' profits. These contribute to the state's gross domestic product. Models like Dr. Bartik's estimate the total dollar value of an IRBX on the Kansas economy over time.

    - For example, the business granted an IRBX may create new jobs. These workers may spend their wages on goods and services from other businesses. This helps grow those businesses and create jobs there, too.

    - New jobs may also lower the area unemployment rate, creating higher demand for workers. This may raise workers' wages, giving them more money to spend at other businesses. But businesses may also have to pay their staff more because they're in higher demand.

    - Real estate demand may go up if new residents move in to take newly created jobs. This increases real estate values for residents and businesses.

- This economic activity, in turn, impacts state and local tax revenues. New tax revenues can offset foregone property taxes. For example, more jobs and higher wages increase state income tax revenues. More spending at businesses increases state and local sales tax revenues. And increasing real estate values increase state and local property tax revenues.

- Dr. Bartik's model doesn't include as a benefit businesses' higher property values and taxes when the tax exemption ends. But it does estimate these through higher real estate values and property tax revenues tied to new job creation. This means the model reflects these benefits using averages. Sometimes it might underestimate or overestimate them.

We can't say how much economic impact would be needed to make an IRBX successful.

- State law doesn't define goals for IRBXs, so there isn't a benchmark to compare to our modeling results. It's up to state and local officials to decide what would be acceptable.

- An incentive's impacts can each be calculated as returns per $1 of incentive. This shows how much economic activity and tax revenue each $1 given up because of the incentive will yield.

- The model estimates an IRBX's economic activity return and tax revenue return, which may differ significantly. For example, an IRBX may produce significant economic activity, but not generate enough public sector tax revenue to offset its initial cost.

- Both types of returns are potential indicators of an IRBX's success. A return greater than $1 indicates economic activity or tax revenue greater than the

incentive's cost. Adding returns from both economic activity and tax revenue provides a more comprehensive picture of the IRBX's impact.

The number of jobs a business creates and the likelihood it created them because of an IRBX are key to our results.

- The model focuses on long-term effects from job creation to estimate the returns associated with an IRBX. Its primary inputs are the IRBX's cost (i.e., forgone property taxes) and the jobs it's intended to create.

- An important component is how many jobs the business created because of the IRBX. This is commonly referred to as the "but for" percentage. If the business would have created the jobs anyway, the city or county didn't need to grant the IRBX to get them. We think economic activity or tax revenues should only be attributed to an IRBX if it was a factor in creating them.

- Because so many factors influence a business's decision to buy or enhance a facility (e.g., profitability, local infrastructure, access to qualified labor), we can only estimate how much an IRBX contributed to the decision. Dr. Bartik's model estimates this percentage by comparing the exempted property tax amount to the project's total value. The smaller the ratio, the smaller the "but for" percentage. The model applies this percentage to the new jobs to estimate how many should be attributed to the IRBX.

- **Figure 2** shows the "but for" percentage the model calculated for each IRBX we reviewed. It also shows how this affected the number of jobs the model counted towards each IRBX's returns. This varied widely, affecting the model's outputs. For example, the model attributed 66% of MGP's estimated 10 jobs to its IRBX, as the figure shows. This means the model's returns for MGP come from these 7 jobs. Conversely, the model only factored in 4 of Tank Connection's estimated 102 new jobs because of its low "but for" percentage.

- State and local officials should consider both job creation and the "but for" percentage when approving incentives like IRBX.

Figure 2: The model's "but for" percentage has a major effect on how many jobs are attributed to an IRBX.

	Estimated new jobs after 10 years	"But for" percentage	New jobs attributed to the IRBX	New jobs attributed to other factors
MGP	10	66%	7	3
Dairy Farmers of America	95	27%	26	69
Bayer	32	24%	8	24
Lowen	50	18%	9	41
AGCO	33	13%	4	29
General Motors	240	11%	27	213
Black & Veatch	600	5%	28	572
Tank Connection	102	4%	4	98

Source: LPA analysis of county appraisers' exemption data (audited) and businesses' self-reported job estimates (unaudited).

Although we estimate all 8 IRBXs we reviewed will generate positive overall returns, none will offset their costs through higher tax revenues.

We estimate 7 of 8 IRBXs we reviewed will produce economic activity returns greater than their initial costs.

- Dr. Bartik's model estimates each IRBX's economic activity return and tax revenue return. Both are important for understanding these incentives' impacts, and we discuss them individually below.

- To estimate economic activity returns, we generally modeled the number of jobs the businesses said they'd create in their pre-project statements to BOTA. We tried to use Kansas Department of Labor data, but it wasn't specific to the IRBX projects. We also modeled property tax exemption data from county assessors.

- **Figure 3** shows the model's estimated economic activity returns for the 8 IRBXs we reviewed. This reflects things like new jobs, higher pay, more spending, and higher real estate values benefiting residents and businesses.

- As the figure shows, all but 1 IRBX we reviewed will return more than $1 in economic activity per $1 exempted.

Figure 3: 7 of 8 IRBXs we modeled may return more than $1 in private sector economic activity per dollar of IRBX. (a)

	IRBX year(s)	Total economic activity generated, est. over 30 years	Total reduced property taxes, est. over 10 years	Economic activity per $1 exempted, est. over 30 years
IRBXs with positive returns:				
General Motors	2006, 2007	$22.1M	$4.3M	$5.18
Bayer	2005	$7.7M	$1.5M	$5.16
Dairy Farmers of America	2018	$31.8M	$7.9M	$4.02
MGP	2007	$5.5M	$2.0M	$2.72
Lowen	2007	$3.9M	$1.9M	$2.11
Tank Connection	2009	$0.9M	$0.8M	$1.11
AGCO	2015	$1.2M	$1.2M	$1.04
IRBXs with negative returns:				
Black & Veatch (b)	2010, 2013	$8.4M	$10.8M	$0.77

(a) The model adjusted these amounts to reflect dollar values in the years the IRBXs began; e.g., MGP values use 2007 dollars, AGCO values use 2015 dollars. Readers should not compare values across IRBXs as a result. Numbers may not appear to divide correctly due to rounding.
(b) Black & Veatch's overall return is positive when its economic activity and tax revenue returns are combined. See Figure 4 for its tax revenue return.

Source: LPA analysis of county appraisers' exemption data (audited) and businesses' self-reported job estimates (unaudited).

- For example, Bayer got a 10-year IRBX worth about $1.5 million in reduced property taxes. It estimated this IRBX would lead to 32 new jobs. Accounting for the "but for" percentage, the model estimates 8 of these 32 new jobs will lead to about $7.7 million in economic activity over 30 years—a return of $5.16 per $1 exempted.

- As **Figure 3** shows, only Black & Veatch's IRBX will likely produce less than $1 in economic activity per $1 exempted. However, as outlined below, this project may still yield a positive overall return.

- Of note, these economic activity returns will probably affect different groups of people differently. They aren't likely to be equitably distributed. **Appendix C** describes this in greater detail.

None of the 8 IRBXs we reviewed will generate tax revenue returns high enough to offset their exemption amounts.

- As with the economic activity returns, modeling tax revenue returns uses both businesses' job creation estimates and county appraisers' exemption data.

- **Figure 4** shows the model's estimated tax revenue returns for the 8 IRBXs we reviewed. This reflects things like higher worker wages increasing income tax revenues, more spending increasing sales tax revenues, and higher real estate values increasing property tax revenues.

- As the figure shows, none of the IRBXs we reviewed will return more than $1 in tax revenue per $1 exempted.

Figure 4: No IRBX we modeled will likely return more than $1 in public sector tax revenues per dollar of IRBX. (a)

	IRBX year(s)	Total tax revenues generated, est. over 30 years	Total reduced property taxes, est. over 10 years	Tax revenues per $1 exempted, est. over 30 years
Dairy Farmers of America	2018	$6.7M	$7.9M	$0.85
General Motors	2006, 2007	$3.5M	$4.3M	$0.81
Bayer	2005	$1.1M	$1.5M	$0.76
MGP	2007	$0.9M	$2.0M	$0.44
AGCO	2015	$0.4M	$1.2M	$0.36
Lowen	2007	$0.7M	$1.9M	$0.35
Tank Connection	2009	$0.3M	$0.8M	$0.34
Black & Veatch	2010, 2013	$3.1M	$10.8M	$0.28

(a) The model adjusted these amounts to reflect dollar values in the years the IRBXs began; e.g., MGP values use 2007 dollars, AGCO values use 2015 dollars. Readers should not compare values across IRBXs as a result. Numbers may not appear to divide correctly due to rounding.

Source: LPA analysis of county appraisers' exemption data (audited) and businesses' self-reported job estimates (unaudited).

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- For example, Bayer's IRBX reduced property tax revenues by about $1.5 million. The model estimates this exemption will lead to only about $1.1 million in new tax revenue over 30 years—a return of about $0.76 per $1 exempted.

- These new tax revenues aren't enough to offset the IRBX's cost. The model estimates this IRBX will lead to a net tax revenue loss of about $400,000 over 30 years.

We estimate each IRBX we reviewed will yield positive overall returns through its combined economic activity and tax revenue returns.

- Adding the economic activity and tax revenue returns outlined above provides a more complete picture of each IRBX's impact. It shows whether each incentive will offset its cost in foregone property tax revenue.

- Of the 8 we reviewed, 7 IRBXs will likely produce returns greater than $1 per $1 exempted through economic activity alone. Adding in their tax revenue returns only increases their overall returns.

- Black & Veatch's IRBX, however, isn't likely to produce a return greater than $1 through its economic activity alone. But when combined with its tax revenue return, this project is likely to produce an overall return greater than $1. This means it would yield positive effects overall.

Local government and school district officials told us IRBXs have positive local effects beyond the jobs they help create.

- We wanted to better understand the economic activity and tax revenue effects Dr. Bartik's model shows. We talked to officials from 8 cities and 5 school districts.

- Local officials told us IRBXs can have value even if the business granted the exemption leaves. That's because another business may buy the property. For example, Shawnee officials told us Bayer's facility had been sold twice since it received the IRBX we modeled. They said the city's largest employer currently owns it.

- Garden City officials said Dairy Farmers of America's facility attracted a new trucking business to town. The trucking business employs more people than the original tax-exempted facility. And Kansas City officials said General Motors's factory had attracted new parts suppliers to town.

- Garden City school district officials said IRBX-related job creation may attract families and help stabilize district enrollment.

Other Findings

Some information cities and counties reported to BOTA had major inaccuracies.

- Cities and counties provide applications, legal documents, cost-benefit analyses, and other information to BOTA before granting each IRBX. The cost-benefit analyses include estimates of the property taxes the city or county will exempt and the jobs the business will create because of the IRBX.

- We couldn't verify the pre-project jobs estimates. We tried to verify them using actual Kansas Department of Labor data.

- The Labor data didn't align with the estimates, including 4 that showed the businesses lost jobs after their IRBXs. Labor data reflect businesses' total jobs instead of only jobs from the IRBX. That's not enough detail to verify the project estimates. The job trends could be due to the businesses missing their estimates or other factors (e.g., economic downturns).

- We didn't attempt to verify the estimates with the businesses. That's because any other data we gathered from businesses would also be self-reported.

- We compared the tax exemption estimates cities and counties gave to BOTA to actual exemption data from county appraisers and found significant differences.

  - 6 of the 8 pre-project tax exemption estimates we reviewed were off by between 18% and 266%. The other 2 IRBXs are still active. But our estimates of their future exemption totals suggest they'll be significantly wrong, too.

  - Local officials appear to have used construction costs, bond totals, or other values rather than appraised values for the estimates they gave BOTA. For example, the Tank Connection cost-benefit analysis estimated this IRBX would exempt about $1.8 million. But it exempted only about $850,000. The pre-project estimate BOTA received likely reflected an appraised value higher than the project's bond total.

  - Appraisers told us estimating future commercial real estate appraisals is difficult. And they said they're not involved when local officials create these pre-project estimates. However, in some cases more accurate information nevertheless may have been available. For example, the Dairy Farmers of America project's estimate reflected an appraised value significantly higher than the estimate the business provided the local government. We don't know why the estimate BOTA received used the higher value.

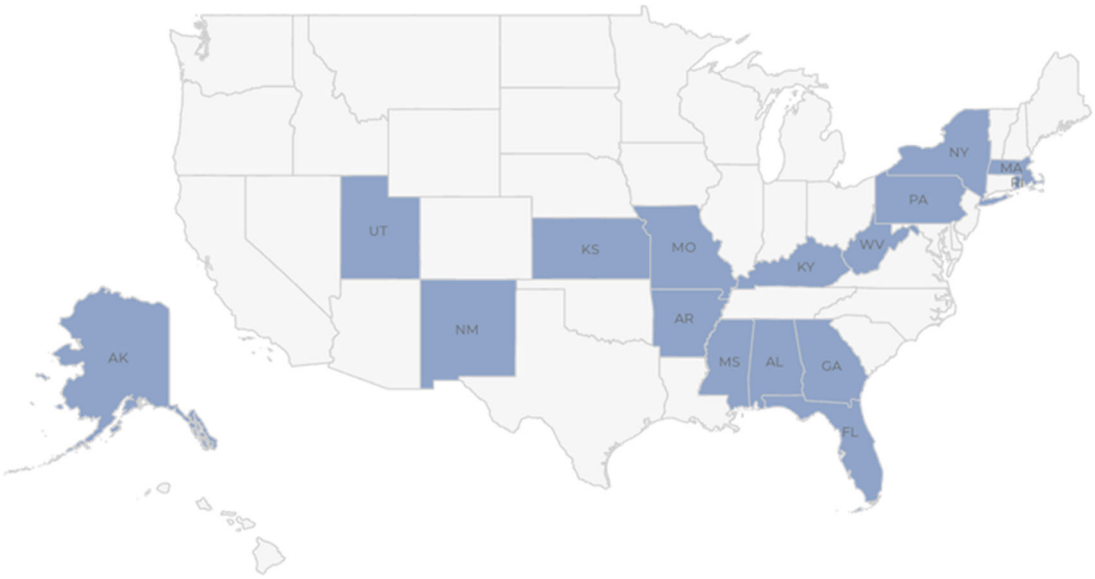
  - As a result, these IRBXs' cost-benefit ratios as calculated by local officials aren't likely to be accurate. Local officials using these analyses to determine whether to grant an IRBX are likely relying on inaccurate information. But we don't know what effects these inaccuracies may have.

- New jobs and exempted property taxes were critical inputs for the model we used. Although they're likely imperfect, we generally modeled businesses' pre-project job estimates. They offered the only job creation information related specifically to all 8 IRBXs we reviewed. For exempted taxes, however, we could use county appraisers' data showing actual exemptions.

The research literature on property tax exemptions' effectiveness is mixed.

- **Figure 5** shows the states with active incentives like IRBX. As the figure shows, most states don't have property tax exemptions specifically tied to IRBs.

Figure 5: As of March 2021, only 16 states have incentives like IRBX.



Source: LPA review of state statutes.

- We didn't find research literature specifically about IRBXs. But we think conclusions from an article outlining findings on other property tax exemptions are applicable. This article summarized several studies' findings.

- Overall, some studies found property tax exemptions didn't affect the economy much. But others saw economic growth.

- The article concluded success depends on several factors, like which business got the exemption. For example, exporters (e.g., manufacturers) can produce greater benefits than service industries (e.g., retailers). And clusters of businesses working in the same industry can produce greater benefits than those working alone.

- The article also says an exemption is effective only when it changes business behavior. Otherwise, it wasn't necessary to achieve the outcome. But other literature estimates incentives change only about 20% of business decisions.

- The studies included in the article suggest property tax exemptions don't do much to attract businesses to a multi-state or multi-county region. Other factors, like labor force and infrastructure access, matter more. But once a business has decided on a region, exemptions may attract it to a specific city or county.

- Property tax exemptions do less to change business behavior as more cities and counties offer them. That's because the business can get similar deals in many places.

Conclusion

We did not draw any conclusions beyond the findings already presented in the audit.

Recommendations

1. The Kansas Legislature should consider amending statute to clarify IRBXs' goals. This might include specific benchmarks for success.

Agency Response

On November 12, 2021 we provided the draft audit report to the Department of Revenue, the Board of Tax Appeals, and officials from the cities of Atchison, Beloit, Garden City, Kansas City, Olathe, Parsons, and Shawnee, as well as Finney County. Officials from Revenue, the Board of Tax Appeals, Finney County, and Shawnee provided feedback. We made both minor and major changes based on this feedback. This includes changes to some of our findings and conclusions.

We provided a final draft report to the same agencies and local government officials for review on February 2, 2022. Only Finney County and Shawnee officials provided feedback, and we made further minor changes based on this additional feedback.

Finney County and Shawnee officials also chose to respond to the audit. Their full responses are below. In their responses, they disagreed with our use of Dr. Bartik's model and elements of how it works or how we used it. We reviewed their concerns but decided not to make more changes for the reasons described below.

- **Finney County and Shawnee contend Dr. Bartik's model inappropriately reflects IRBXs' effects.** This includes how the model incorporates post-IRBX property taxes for facilities that were improved. We think the model is appropriate. Although other models might show different results, Dr. Bartik

and the Upjohn Institute are widely seen as tax incentive experts. The experts we consulted reviewed this model in detail and supported using it. The model reflects property tax revenue increases attributable to the IRBX through general, community-wide increases. It doesn't treat the IRBXs as ongoing, instead reflecting their specific end dates.

- **Finney County disagrees with the model's application of the "but for" percentage to the modeling results.** The model estimates the difference the incentive made to the business's decision, and therefore the effects attributable to it. The experts we consulted with think a rigorous evaluation must attempt to account for the "but for" because it plays such a big role in estimating an incentive's returns. Applying the "but for" percentage shows how much return the incentive itself is producing. Not including this percentage would reflect an assumption that the business made its decision solely because of the incentive. Businesses' decisions are more complex than this, though, so attributing 100% of the project's effects to the incentive wouldn't accurately represent its effects.

- **Finney County disagrees with our use of job creation estimates.** We used businesses' pre-project job creation estimates because comprehensive, objective IRBX-related job creation data don't exist. We didn't ask the businesses for information because this also would've been self-reported.

Response to Kansas Legislative Division of Post Audit Report

Industrial Revenue Bond Property Tax Exemptions (February 2022) (Report Number: R-22-005)

Presented by Finney County Economic Development Corporation
Finney County/Garden City
February 8, 2022

Introduction

The Dairy Farmers of America (DFA) dairy ingredients facility in Garden City is one of the projects reviewed in Report Number R-22-005. We would like to express our appreciation for being allowed to prepare this comprehensive response. The Division of Post Audit representatives we worked with were gracious in making themselves available to us throughout the process.

All communities with IRBX exemptions reviewed by the Legislative Department of Post Audit were given the opportunity to review the findings of the Industrial Revenue Bond Property Tax Exemptions report (R-22-005). We noted significant shortcomings in the findings of the original report dated December 2021. Many of those shortcomings were addressed in the updated report of February 2022. Due to the underlying challenges inherent with the methodology utilized in this review, the limited scope of the review, and statements that include incomplete representations of the tool and its utilization, we are obligated to offer this report to better clarify the use of the IRBX development tool in Finney County/Garden City. We will not attempt to speak for other communities, either included in this report or not, but will provide clarity and additional information not included in the limited Kansas Legislative Division of Post Audit (LDPA) review of this development tool. Our responses are based on actual post-project data and not pre-project estimates. Considering the DFA project was built and is in full operation, it is more appropriate to analyze what DID happen with job creation and property tax payments versus what MIGHT have happened as the LDPA is relying upon with the pre-project Cost Benefit Analyses they reference.

Finally, it is important to note that the report created by Kansas Legislative Division of Post Audit is meant to inform policy decisions. There has long been evidence that academia does not always take a practical approach to analyzing the impacts of economic development policies.

> *"although the decisions of policy professionals are often more consequential than those of individuals in their private capacity, there is a dearth of studies on the biases of policy professionals: those who prepare and implement policy on behalf of elected politicians. Experiments conducted on a novel subject pool of development policy professionals (public servants of the World Bank and the Department for International Development in the UK) show that policy professionals are indeed subject to decision-making traps, including the effects of framing outcomes as losses or gains, and, most strikingly, confirmation bias driven by ideological predisposition, despite having an explicit mission to promote evidence-informed and impartial decision making. These findings should worry policy*

professionals and their principals in governments and large organizations, as well as citizens themselves. A further experiment, in which policy professionals engage in discussion, shows that deliberation may be able to mitigate the effects of some of these biases." Banuri, 2019.

The IRB Tool

- "Figure 5 shows the states with active incentives like IRBX. As the figure shows, most states don't have property tax exemptions specifically tied to IRBs." (P14)
    - Most states offer property tax abatements and/or other tax credit programs that have the same effect as the IRBX. LDPA only evaluated the IRBX portion of the project's economic activity, job creation, and post-abatement tax collections, so the IRBX should be treated no differently than any other tax abatement for this review. LDPA acknowledges that by further stating "But we think conclusions from an article outlining findings on other property tax exemptions are applicable." (P14)

The IRB tool is one of only a handful of development tools available to communities in Kansas. This mechanism is available to projects with or without the tax abatement portion. It is a more flexible tool than EDX (Constitutional: Economic Development Exemption) as it allows for more business types to qualify. In Finney County, there are currently two active IRBX projects. The Dairy Farmers of America reviewed in report is the subject of this response. The other is Ranch House Senior Living which is a 20-acre full-spectrum senior living facility. While DFA would also have been eligible for an EDX abatement, Ranch House would not have qualified. Many would argue that both projects represent significant value to our community and are equally worthy of local officials opting to utilize development tools to close the gap on these projects.

Bartik Model Limitations

- The LDPA Report states its main objective as "What are the economic and fiscal impacts of selected industrial revenue bond exemptions (IRBXs)?
    - It is imperative to note this report is not measuring the actual project outcomes. It is only measuring the effectiveness of the abated portion of the property taxes. And, as we will show, there are challenges with the negative weights in the model.
    - LDPA relied entirely on the Bartik model for analyzing the effectiveness of the IRBX tool. "Some recent papers studying Bartik designs have assumed that the sector-level shocks are exogenous and all have the same expectation. This second assumption may sometimes be implausible. For instance, there could be industries whose employment is more likely to grow than that of other industries....Under our assumptions, Bartik regressions identify weighted sums of location-specific effects, with weights that may be negative. Accordingly, such regressions may be misleading in the presence of heterogeneous effects, an issue that was not present under the assumptions maintained in previous papers.... Finally, we revisit two applications. In both cases, Bartik regressions have fairly large negative weights attached to them. Our alternative estimator is substantially different from the Bartik regression coefficient in one application." ***Chaisemartin, C.D., & Lei, Z. (2021). Are Bartik Regressions Always Robust to Heterogeneous Treatment Effects? Social Science Research Network.***

- The Bartik model may be an effective tool if utilized in an attempt to determine the necessity of incentives to attract companies, but it omits significant information needed to measure the actual "economic and fiscal impacts" of IRBXs.
- We will not challenge the outcomes presented by LDPA in their modeling of these IRBX projects but will provide additional information not measured in the Bartik model.
- There are other factors that influence local decision making regarding the use of business development tools. The Bartik model does nothing to evaluate those additional considerations and, because that model was the sole tool utilized to evaluate these projects by LDPA, those factors are not included in the LDPA report. In order to accomplish a thorough review of the benefits associated with these projects, additional information necessary to the evaluation is not represented in R-22-005.

- "We estimate these IRBX may have reduced property tax revenues across the state by up to about $1.2-$1.5 billion total over 2005-2020 (or roughly $100 million per year). Because no comprehensive IRBX data exist, we don't know whether the available data reflect a 100% property tax exemption for each project. This isn't always the case, so the actual amount may be less." (P.5)
  - All IRBX and EDX in Finney County show as 100% abatements, however Payments in Lieu of Taxes (PILOT) are collected on all projects. Those PILOT payments are the equivalent of the non-abated percentage. Finney County does not offer a true 100% abatement. Finney County's Tax Abatement Policy maxes out at 60% (requiring a minimum of $25 million in capital investment). Projects that are significantly above the $25 million threshold are eligible for review and an increase in the abated percentage can be granted by consensus of the local taxing entities impacted by the abatement. In the case of the DFA project which was reviewed in this report, that percentage was increased to 70%.
  - As of February 2022, there are 9 active abatements in Finney County. Five projects are paying 80% PILOT, two projects are paying 70% PILOT, one is paying 40% PILOT, and DFA is paying 30% PILOT.
  - In real dollars, the property these projects are located on had a total pre-development tax appraised value of $2,508,760. Post-development valuation of the same parcels is $67,078,710 (an increase of $64,569,950).

Further, we judge Figures 3 and 4 lead the reader to a negative impression of return on investments for the selected projects, both in terms of economic activity and tax revenue generated. We suggested using the figures below instead as they paint a more complete picture about why local communities pursue such projects, by assigning figures to both the part of the project linked to the IRBX, and, importantly, the overall project impact.

Figure 3	IRBX Year(s)	Economic Activity generated directly linked to IRBX	Economic Activity generated aside from IRBX	Total reduced property taxes est. over 10 years	IRBX linked economic activity per $1 exempted over 30 years	Non-IRBX linked economic activity per $1 exempted over 30 years	Total economic activity per $1 exempted over 30 years
General Motors	2006, 2007	$22.1M	$178.8M	$4.3M	$5.18	$41.58	$50.23
Bayer	2005	$7.7M	$24.4M	$1.5M	$5.13	$16.27	$21.40
DFA	2018	$31.8M	$86.0M	$7.9M	$4.03	$10.89	$14.92
MGP	2007	$5.5M	$2.8M	$2.0M	$2.75	$1.40	$4.15
Lowen	2007	$3.9M	$17.8M	$1.9M	$2.05	$9.37	$11.42
Tank Connection	2009	$0.9M	$21.6M	$0.8M	$1.13	$27.00	$28.13
AGCO	2015	$1.2M	$8.0M	$1.2M	$1.00	$6.67	$7.67
Black & Veatch	2012, 2013	$8.4M	$159.6M	$10.8M	$0.78	$14.78	$15.56

Figure 4	IRBX Year(s)	Tax revenues generated directly linked to IRBX	Tax revenues generated aside from IRBX	Total reduced property taxes est. over 10 years	IRBX linked tax revenues per $1 exempted over 30 years	Non-IRBX linked tax revenues per $1 exempted over 30 years	Total tax revenues per $1 exempted over 30 years
DFA	2018	$6.7M	$18.1M	$7.9M	$0.85	$2.29	$3.14
General Motors	2006, 2007	$3.5M	$28.3M	$4.3M	$0.81	$6.58	$7.39
Bayer	2005	$1.1M	$3.5M	$1.5M	$0.73	$2.27	$3.00
MGP	2007	$0.9M	$0.5M	$1.2M	$0.75	$0.42	$1.17
Lowen	2007	$0.7M	$3.2M	$1.9M	$0.37	$1.68	$2.05
Tank Connection	2009	$0.3M	$7.2M	$0.8M	$0.38	$9.00	$9.38
AGCO	2015	$0.4M	$2.7M	$1.2M	$0.33	$2.25	$2.58
Black & Veatch	2012, 2013	$3.1M	$58.9M	$10.8M	$0.29	$5.45	$5.74

Other Factors Related to Issuance of IRBX at Local Level

- As stated before, there are various factors that local officials must account for when making decisions about the use of Development Tools for projects. These factors are not addressed in the LDPA report. We will address some of those factors related specifically to the DFA project here.
    - Value-Added Agricultural Opportunities.
        - Western Kansas communities have been actively recruiting dairy producers for more than 25 years to increase the profitability of our region's agricultural producers by creating additional local demand for feedstock grown in the region

        - The logical next step for adding value was to attract a dairy manufacturing facility to decrease transportation costs and increase profitability for the dairy producers.
        - Finney County worked diligently to attract dairies to many of the smaller surrounding counties in our region with the understanding that our community would be the most desirable location for a manufacturing facility based on infrastructure requirements, workforce demand, and availability of worker training programs.
            - With rare exceptions, all milk processed at the DFA facility in Garden City is produced at dairy farms in southwest Kansas.
    - Short-term Benefits of Large Construction Project
        - At times during the 18 months construction of the DFA facility, there were upwards of 400 workers on the site. Those workers contributed to the local economy and existing businesses in tangible ways:
            - Accommodation expenses
            - Meals
            - Shopping
            - Entertainment
    - Creation of Ongoing Worker Training Programs
        - The DFA project allowed us to create a customized worker training program through Garden City Community College to meet the workforce needs of DFA. That program was designed to be further customized as new and existing facilities needed training programs for their specific industries. That program is still in place at Garden City Community College and has now expanded into the high schools of both USD 457 and USD 363. Customized training is now in place for Tyson Fresh Meats (3,700 employees) and empirical foods which is currently building a $500 million facility in Garden City
    - Water Re-use Capacity Building
        - Water is the most precious natural resource in western Kansas
        - The DFA facility in Garden City is tasked with drying the solid portions of fluid milk for further processing into dairy products, leaving the liquid portion (mostly water) as a byproduct
        - The City of Garden City was able to negotiate a long-time purchase of that water byproduct for eventual re-use in the city. At current production levels, gross water production from the facility is approximately 1 million gallons per day. The facility utilizes less than 200,000 gallons of water for their processing each day, netting the city approximately 800,000 gallons of water every day that was being transported to dairy manufacturing facilities in other states prior to the construction of the DFA facility
    - Indirect Job Creation: Transportation
        - The DFA facility required the attraction of a dairy transport company to locate in Finney County to serve the needs of the new plant.
        - The trucking company that ultimately located in Finney County created more than 100 jobs while the DFA plant created 88 jobs. They have already done an expansion of their facilities to meet increased demand as the dairies in the region have grown significantly more since the construction of DFA
    - Dairy expansions in regional communities resulting in:
        - Increased valuations

        - New job creation
        - Additional student population in school districts
        - Reduction in youth exodus as quality jobs are available within county
        - Increased demand for local housing causing increased residential valuation

Tangible Economic Differences

- The DFA facility produces additional economic benefit through the ongoing operations of the plant outside of the direct jobs created and sustained.
    - Annual Plant Maintenance Contracts valued at $600,000-$700,000
        - Electrical
        - Mechanical
        - Air Handling
        - Waste Disposal
    - Wastewater re-use plant (on-site) $1.5 million/year
- "Dr. Bartik's model doesn't include as benefit businesses' higher property values and taxes when the tax exemption ends. But it does estimate these through higher real estate values and property tax revenues tied to new job creation. This means the model reflects these benefits using averages. Sometimes it might underestimate or overestimate them."
    - The LDPA report focuses on a model frequently utilized to forecast the economic activity one may expect from any given project. None of the metrics measured in the LDPA report are shown in real numbers recorded after construction. Their data is instead manipulated by applying the assumptions included in the model which, as has been shown, experts purport to not always be reliable
- "Figure 3. 7 of 8 IRBXs we modeled may return more than $1 in private sector economic activity per dollar of IRBX." (P10)
    - These figures do not show the economic activity generated *outside* the limitations of the IRBX modeling. The model is only allocated the "but for" percentage of total revenues to each project (27% in the case of DFA). The figure below is a more accurate representation of the economic activity generated by DFA in real, tangible dollars

	IRBX Year(s)	Economic Activity generated directly linked to IRBX	Economic Activity generated aside from IRBX	Total reduced property taxes est. over 10 years	IRBX linked economic activity per $1 exempted over 30 years	Non-IRBX linked economic activity per $1 exempted over 30 years	Total economic activity per $1 exempted over 30 years
DFA	2018	$150.1M	$405.8M	$8.9M	$16.87	$45.60	$62.47

Economic Impact Calculations:

Our conservative estimate for economic impact is $555.9M found by only looking at increase in area wages:
95 direct DFA jobs
*95 jobs * 5.59 Supply chain multiplier for dairy processing plant * 80% capture of supply chain in Kansas = 424.8 extra supply chain jobs*
*88 jobs * 2.55 Induced jobs multiplier for dairy processing plant * 35% capture of induced jobs in Kansas = 84.8 extra induced jobs*
Totaling 604.6 new jobs from project

Median income in Fi. Co. is $30,650 giving us a 1-year impact of $18.5M
30-year increase in wages is $555.9M (we are treating this figure as the entire economic impact of the project acknowledging that this is only part of the true economic impact)

- "Figure 4: No IRBX we modeled will likely return more than $1 in public sector tax revenues per dollar of IRBX." (P11)
    - These figures have applied the Bartik model to the tax revenues generated over 30 years and do not accurately represent actual tax dollars collected during the abatement period or in the following 20 years.

	IRBX Year(s)	Tax revenues generated directly linked to IRBX	Tax revenues generated aside from IRBX	Total reduced property taxes est. over 10 years	IRBX linked tax revenues per $1 exempted over 30 years	Non-IRBX linked tax revenues per $1 exempted over 30 years	Total tax revenues per $1 exempted over 30 years
DFA	2018	$28.4M	$76.9M	$8.9M	$3.19	$8.64	$11.83

Tax Revenue Calculations:

*Finney county retail sales per person (not counting people under 18): $22,415 * sales tax rate of 8.80% = $1,973 in sales tax revenue generated per job*
*Median income: $30,650 * state income tax of 5.25% = $1,609 in income tax per job*
Per capita property tax in Kansas: $1,552 which we will reduce by 1/3rd to be $1,035 per job.
Total amount of yearly collected tax per job: $4,616
*604.6 jobs created * $4,616 = $2.8M a year*
Over 30-years is $83.7M

Additionally:
New property tax collected on DFA site for 30-years:
$21.6M (from county appraiser – including a reduction of value over 30 years for depreciation)

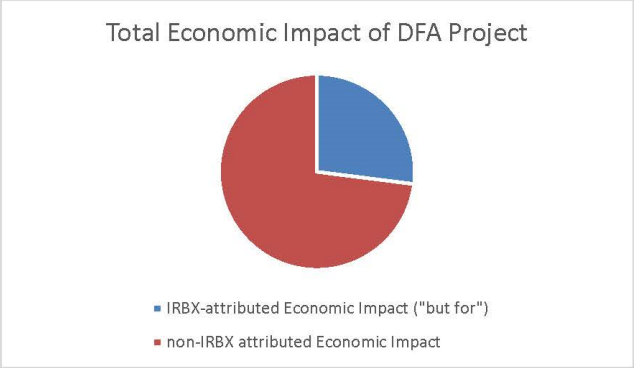
Combined, we get a 30-year increase in tax collections of:
$83.7M from jobs + $21.6M from DFA plant = $105.3M

Conclusion

The results of this report are highly dependent on a single calculation about a "what if" from a formula that does not account for many of the realities of project development with or without the use of IRBX. The result of using this hypothetical situation calculation (even when actual numbers are available) could swing the projected impact by $100M or more. We have identified and outlined the following as potential pitfalls of utilizing the circular logic inherent to this model.

- The *but for* analysis utilized for this report rates the IRBX tool for projects as more effective when those projects have ***lower*** capital investment, ***fewer*** jobs created, and a ***higher*** percentage of tax abatement. That is counterintuitive to the stated goals of economic development which are to ***increase*** tax base, ***increase*** job creation, and ***minimize*** the costs to communities in performing those activities.
- The main thrust of these calculations is that in every case a community abated more taxes than what was "needed", which is little more than an opinion. A conclusion certainly can't be drawn if the total impact of the project is not measured.
- In the LDPA report, the cost to a community is measured by applying the *but for* to both the cost and benefit side of the equation and not in *reduced economic and tax income in the future (cost)*—which is how the IRBX tool is designed. This double penalizes the benefit offered to the project.

- A project does not benefit from the savings of an IRBX unless the project *actually* takes place, this paper oversimplified costs and represents them as actual dollars spent, when in fact they are only a community's agreement to forego a portion of future property taxes that would not have been generated had the project never materialized.
- The way the "but for" was calculated is in proportion to the amount of the IRBX vs. project total. Meaning that a *small* abatement for a *large* project was deemed to make the IRBX tool not very effective in swaying the decision-making process of the business and thus the economic impact of the project was reduced greatly.
- Even with actual numbers of property tax revenue the "but for" is applied to collected figures making it appear that projects have a negative overall impact to the tax base when they are truly overall tax generators.



To further illustrate our response, this chart represents the total economic impact of the DFA project in Finney County. The LDPA report is only reporting the IRBX-attributed Economic Impact. Local officials must consider the entire economic impact of the project when making decisions regarding what, if any, development tools should be utilized to achieve the economic growth the project creates.

In closing, we do not have reason to believe that LDPA intentionally omitted any of the information we have provided to sway the findings of their report. They were only analyzing the IRBX portion of the project. However, the world of academia has long challenged the use of economic development tools by creating and perpetuating models that do not include all the data required to make informed policy decisions. LDPA's reliance on the Bartik model to only review the assumed IRBX-impacted portion of the project caused many important factors to be overlooked in the process and we sincerely appreciate this opportunity to respond.

Citations

Banuri, S., Dercon, S., & Gauri, V. (2019). Biased policy professionals. *The World Bank Economic Review*, *33*(2), 310–327. https://doi.org/10.1093/wber/lhy033

Chaisemartin, C.D., & Lei, Z. (2021). Are Bartik Regressions Always Robust to Heterogeneous Treatment Effects? Social Science Research Network.

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Date: February 17, 2022
To: Chairman Olson and Members of the Legislative Post Audit Committee
From: Caitlin Gard, Assistant City Manager
Re: Written Testimony Regarding the IRBX Evaluation

Chairman Olson and Committee Members,

Thank you for the opportunity to allow the City of Shawnee to respond to the IRBX Evaluation. First, I would like to mention Principal Auditor Andy Brienzo with the Legislative Division of Post Audit has been very helpful as we have worked through this analysis.

In terms of the IRBX evaluation, Dr. Bartik's model estimates indirect taxes tied to new job creation but *does not include* as a benefit the businesses' higher property values and direct taxes generated when the tax exemption ends. We continue to have objection to an audit methodology that assumes, in effect, a 10-year tax abatement is an eternal tax abatement. By failing to assume the restoration of projects to the tax rolls after 10 years, this report has ignored—according to the authors' own calculations—$2.4 billion to $3.0 billion (nominal) of new property tax dollars paid by incentivized business in years 11-30 of the analysis. This oversight is important to state policymakers, as we believe local governments weigh the potential for potential net new property tax benefits starting in year 11 much more highly than the indirect benefits new employment might provide. This is particularly the case in a metropolitan area where an employee in Shawnee could live in any of Shawnee, Lenexa, Olathe, Merriam, Mission, Bonner Springs, Edwardsville, or Kansas City, Kansas, all within the same 15-minute commute time.

A project benefitting from abatement but not producing any jobs still has capacity to generate significant value to affected taxing jurisdictions through net new property taxes paid once the abatement expires. Job creation is certainly a valuable benefit of tax incentives (and the most important benefit the state government), but local governments in Kansas generate 30-60% of their general revenues from property taxes. Cities and counties have a heavy incentive to use IRBX to develop commercial properties that have significant property tax valuation but do not produce significant new demands on public services and infrastructure.

In reference to the discussion that state and local officials should consider both job creation and the "but for" percentage when approving incentives like IRBX, in practicality, the but-for analysis is binary: either the project is happening and 100% of its jobs will be created or the project is not

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happening and 0% of its jobs will be created. Dr. Bartik's model says, effectively "some percentage of jobs would have been created in the community had no incentives been provided." There is no doubt that is true. However, on each individual project, what the state or city or county know is that its developer counterpart is telling it that the project will not happen without benefit of the incentive requested. It is very possible a city or county could say "no" and that specific project would disappear and a new project would materialize tomorrow or 10 years from now and create jobs and property value without incentives. It is very, very challenging to know with a specific project, though, how many jobs would be created if a city/county governing body declined the IRBX request.

The findings and comments do not appear to show an understanding of the nuance of the process "on the ground." City and county staff reviewing incentive requests and making recommendations for approval or denial to governing bodies, in all cases for cities and in most cases for counties, are not the individuals establishing the value of the completed project for tax purposes. In most cases, tax valuations assigned to small-scale residential projects are reasonably close to the development cost of the project. But, for commercial facilities, county appraisers typically lean more heavily on the income approach to establish valuation for tax purposes. It is more or less impossible for decision makers to know, with any certainty, how a county will value an abated project from year to year.

There are clearly uncertainties but there are models and frameworks that guide these estimates. By statute, CBAs are performed as part of the deliberation process regarding whether to grant a project an IRBX. By definition, nothing has been constructed, opened, or operated at that point. As a result, every single input into a CBA is likely to be proven to be inaccurate over the 10-year term of an abatement. Even known inputs, like this year's mill levy applicable to the project, will be wrong within a year. One cannot know whether estimates will be right or wrong at the time the CBA Is granted—only later in the process with projections become actuals.

Thank you for your consideration.

Sincerely,

Caitlin Gard
Assistant City Manager

Good Starts Here.
SHAWNEE
KANSAS
www.GoodStartsHere.org

Appendix A – Cited References

This appendix lists the major publications we relied on for this report.

1. An Evaluation of North Carolina's Economic Development Incentive Programs. (July, 2009). *University of North Carolina Center for Competitive Economies*.

2. "But For" Percentages for Economic Development Incentives: What percentage estimates are plausible based on the research literature? (July, 2018). *Timothy J. Bartik*.

3. Exit Options in Firm-Government Negotiations: An Evaluation of the Texas Chapter 313 Program. (October, 2017). *Nathan M. Jensen*.

4. Rethinking Property Tax Incentives for Business. (2012). *Daphne A Kenyon, Adam H. Langley, and Bethany P. Paquin*.

5. Who Benefits from Economic Development Incentives? How Incentive Effects on Local Incomes and the Income Distribution Vary with Different Assumptions about Incentive Policy and the Local Economy. (March, 2018). *Timothy J. Bartik*.

Appendix B – Modeling Methodology

This appendix further details our methodology for modeling the 8 selected IRBXs. It includes how we used the model and important caveats.

- Dr. Bartik's model comes with baseline assumptions and inputs. His 2018 paper on this model describes these and the underlying research in detail (item 5 in **Appendix A**). The economic development experts we consulted told us to change the baseline assumptions only when we had better, conclusive information. That's because the baseline assumptions are based on a thorough review of the research literature.

- We limited our adjustments to a handful of things we thought more accurately reflect these 8 IRBXs.

    - We generally used businesses' self-reported, pre-project job creation estimates. Finney County officials provided updated job numbers they'd tracked for Dairy Farmers of America's facility. We also used county appraisers' property tax exemption information. These are the most important inputs for our model. For the 2 active IRBXs we reviewed (AGCO

and Dairy Farmers of America), we estimated their future exemption totals using a linear model.

  - Sometimes we applied assumptions or adjustments to the businesses' self-reported new job estimates. For example, when the business didn't break down how many jobs it expected to create each year, we assumed it would create the same number each year. Different patterns would yield different results, but they wouldn't change the outcomes much.

  - One of our experts used IMPLAN software to identify the appropriate multiplier for each IRBX's model. This estimates how many additional jobs each new job will lead to, based on the business's industry and location. For most, the expert suggested we use local multipliers. For Dairy Farmers of America and General Motors, the expert thought the state multipliers would be better because they account for most of their industries in Kansas.

  - We adjusted several other inputs to reflect each IRBX's initial year. We also adjusted some inputs to reflect the business's industry. These changes make the model's "but for" percentage and overall output more precise. They include U.S. population totals, personal income totals, and inflation rates. They include labor force participation and value-added totals for each industry. And they include Kansas unemployment rates and education spending levels.

  - We reduced the number of years the model projects from 80 years to 30 years. The model's baseline projection is 80 years from the incentive's beginning, primarily to understand long-term effects of educational impacts. We limited this to 30 years because we weren't sure how accurate an 80-year projection might be. 30 years still gave long-term effects time to accrue. And when we tested modeling through 80 years, it minimally changed the outcome due to the model's adjustment of future values.

- We didn't change most of the model's baseline assumptions and inputs. Among these are a couple that significantly affect the model's output. We didn't have better, conclusive information about them. Dr. Bartik discusses his model's baseline assumptions and inputs in his 2018 paper.

  - The model assumes the state and local governments will equally raise taxes and cut public spending (i.e., 50%/50%) to cover the IRBX's cost.

  - The model uses a 3% social discount rate and a 12.5% firm discount rate when adjusting future values.

  - The model doesn't include short-term effects from capital investment. Any business that gets an IRBX must first finance capital investment with an IRB. This often creates temporary construction jobs. The model focuses instead on long-term effects from jobs more likely to be permanent.

- Further, the property tax exemptions we modeled accounted for any applicable payments in lieu of taxes.

    - Sometimes cities and counties require businesses with IRBXs to pay payments in lieu of taxes. This helps make up for reduced property tax revenues and may also benefit the business.

    - For example, a city or county may grant a 10-year, 100% exemption but require the business to pay a little more (e.g., 10%) of its property taxes in each of the 10 years. The business benefits from reduced taxes and a steady increase over time to its full tax amount. But the state and local governments still receive a portion of the property tax revenues.

- Finally, we only modeled IRBXs. Some businesses we looked at may have received other incentives, which may affect the results.

Appendix C – Effects on Different Groups

This appendix gives more information on how the economic activity generated by incentives like IRBXs affects people differently.

- Despite their mostly positive returns, the 8 IRBXs we reviewed likely won't produce equitable benefits for people at different income levels.

    - Dr. Bartik's model estimates how economic activity affects people at different income levels. It shows these effects for 5 income levels, from the highest 20% of income earners to the lowest 20%. It's based on income distribution research literature.

    - The model estimates about one-third of the income these IRBXs generate will go to the top 20% of income earners. And their property will benefit from about 75% of the real estate value increases.

    - By contrast, the model estimates about 12% of income will go to the bottom 20% of income earners. And they'll benefit from only about 3% of the real estate value increases.

    - Other types of incentives may produce more equitable outcomes than these. For example, incentives like worker training programs may better benefit people at lower income levels. Such incentives may help improve their skills and earning potential.

Appendix D – Experts

This appendix lists the economic development experts who consulted on this evaluation. The findings and conclusions expressed in this report are solely those of the Legislative Division of Post Audit and the individual experts. They do not necessarily reflect the views or positions of the experts' affiliate institutions.

- Donna K. Ginther, PhD Economics
  Dean's Professor
  Director, Institute for Policy & Social Research
  University of Kansas
  Assisted by Patricia Oslund, Associate Researcher

- Tami J. Gurley, PhD Economics
  Associate Professor
  Department of Population Health
  University of Kansas Medical Center

- John C. Leatherman, PhD Urban and Regional Planning
  Professor
  Department of Agricultural Economics
  Kansas State University

Appendix E – Selected IRBX Details

This appendix details the 8 selected IRBXs we modeled for this evaluation. It shows each IRBX's model-adjusted total.

AGCO

- Industry: Agricultural equipment design and manufacturing, including tractors and combine harvesters
- Project location: Beloit, Mitchell County
- Project description: AGCO expanded and equipped its manufacturing facility, built a new storage facility, and relocated a parking lot and road.
- IRB total: $16.6 million
- Estimated new jobs: 33
- Estimated IRBX total: $1.2 million over 10 years

Bayer

- Industry: Pharmaceutical, non-pharmaceutical healthcare, and crop science research and production
- Project location: Shawnee, Johnson County
- Project description: Bayer expanded its corporate campus. This included a 250,000 square foot warehouse and distribution facility. It also included office

space for e-commerce and customer service representatives.
- IRB total: $13.2 million
- Estimated new jobs: 32
- IRBX total: $1.5 million over 10 years

Black & Veatch
- Industry: Infrastructure engineering, consulting, and construction
- Project location: Overland Park, Johnson County
- Project description: Black & Veatch purchased, renovated, and expanded a new corporate headquarters building.
- IRB total: $122 million
- Estimated new jobs: 600
- IRBX total: $10.8 million over 11 years (2 IRBXs)

Dairy Farmers of America/Meadowlark Dairy Nutrition
- Industry: Dairy product manufacturing, including cheese, butter, and milk
- Project location: Garden City, Finney County
- Project description: Dairy Farmers of America built and equipped a 320,000 square foot dairy processing facility and warehouse. It processes raw milk into powdered milk.
- IRB total: $170 million
- Estimated new jobs: 95
- Estimated IRBX total: $7.9 million over 10 years

General Motors
- Industry: Automobile design and manufacturing, including cars, trucks, and SUVs
- Project location: Kansas City, Wyandotte County
- Project description: General Motors built and equipped an assembly facility for the Saturn Aura mid-sized car.
- IRB total: $155.4 million
- Estimated new jobs: 240
- IRBX total: $4.3 million over 6 years (2 IRBXs)

Lowen
- Industry: Graphics and signage design and manufacturing, including fleet, retail, real estate, and traffic graphics and signage
- Project location: Hutchinson, Reno County
- Project description: Lowen built and equipped a 150,000 square foot corporate headquarters, manufacturing, and storage facility.
- IRB total: $21.2 million (including bond refunding)
- Estimated new jobs: 50
- IRBX total: $1.9 million over 10 years

MGP
- Industry: Distilled spirit and food ingredient research and production, including whiskey, gin, vodka, and specialty wheat proteins and starches

- Project location: Atchison, Atchison County
- Project description: MGP built and equipped an 18,000 square foot corporate office building. It also built and equipped a 19,500 square foot product research facility.
- IRB total: $7 million
- Estimated new jobs: 10
- IRBX total: $2.0 million over 10 years

Tank Connection

- Industry: Steel storage tank design, manufacturing, and installation, for liquid and dry bulk storage
- Project location: Parsons, Labette County
- Project description: Tank Connection built and equipped an 80,000 square foot manufacturing facility.
- IRB total: $4.6 million
- Estimated new jobs: 102
- IRBX total: $850,000 over 9 years