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## Forecasting School Districts' Revenues and Expenditures

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November 5, 2015

Nick Warner



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# Forecasting School Districts' Revenues and Expenditures

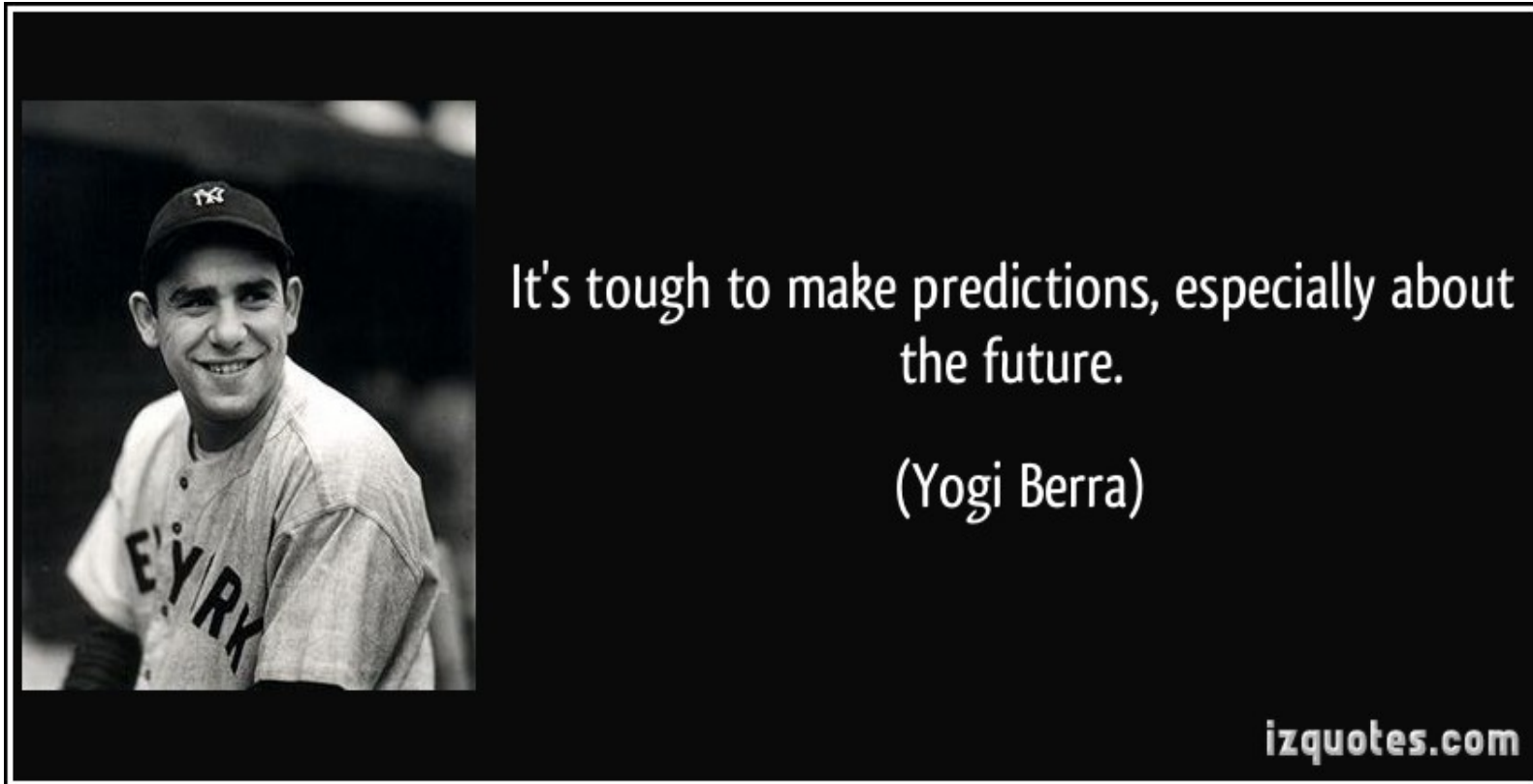


# Forecasting Overview

# What is forecasting?

- Predicting the future as accurately as possible, given all of the information available, including historical data and knowledge of any future events that might impact the forecasts
- Many methods - Forecasters use the one that best fits the known data.

# Why is forecasting challenging?



# Why is forecasting challenging?

- A forecast must be based on what we know at the time, and things could change.
- Some data is predictably variable or volatile, so any forecast includes a range of possible amounts.



# Why would a school district use forecasting?

# Why would a school district use forecasting?

- Inform long- and short-term budget, capital, and staffing plans
  - Are expected revenues sufficient to cover expected expenditures under current conditions?
  - Are expected revenues sufficient to implement new improvement initiatives?
  - Is the district positioned to handle changes in student population?
  - And more...





# How can we forecast data important to school districts?

# How would a school district forecast?

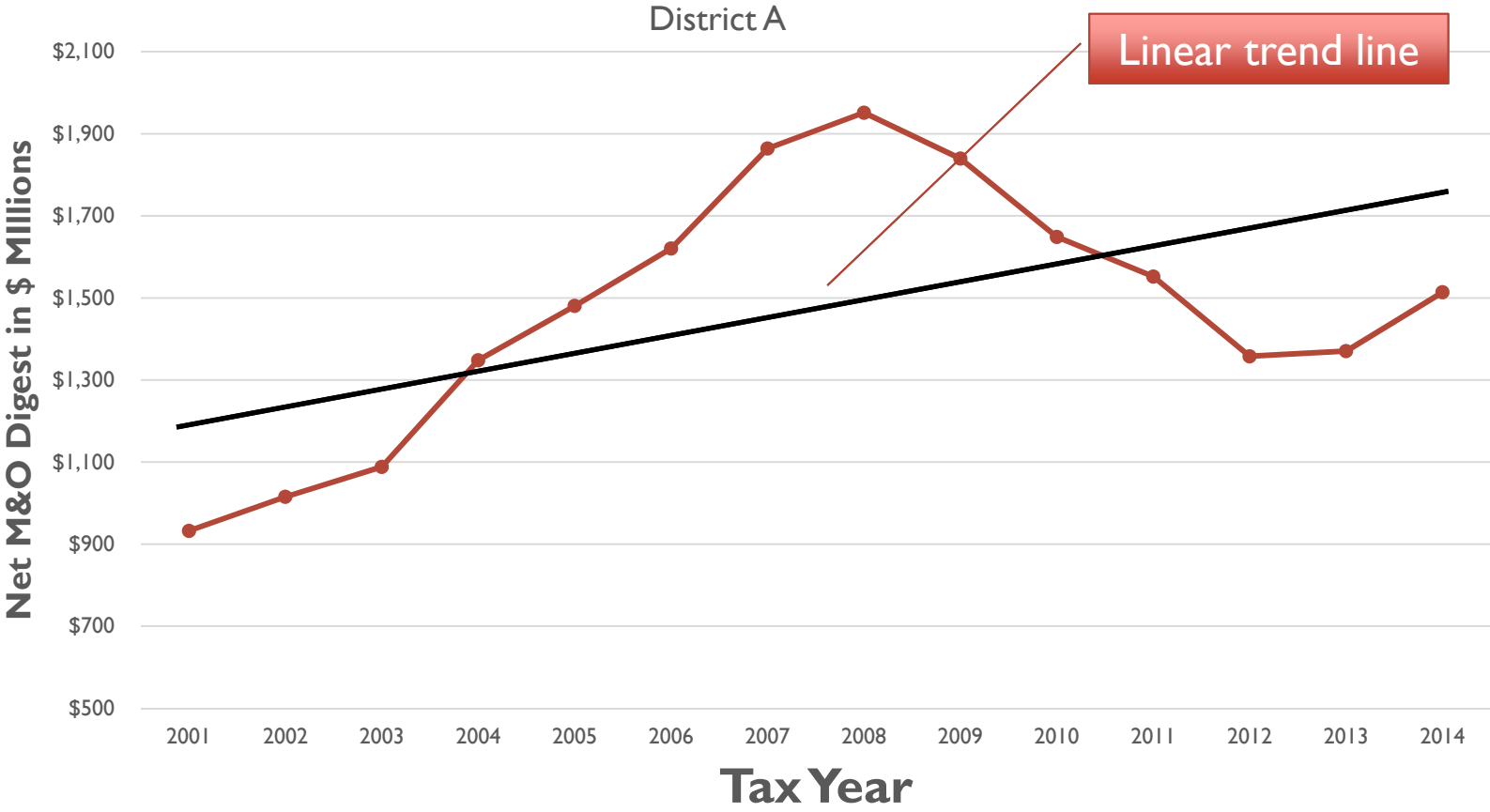
- Do it yourself, based on known data sources and info about your district
  - Methods range from very basic to extremely advanced, but all will provide very useful insights and help inform decisions and planning.
- Get help from experts

**Warning:** A forecast should be used to inform decisions, not dictate budget planning or decisions. Budget planning and forecasting should remain separate.

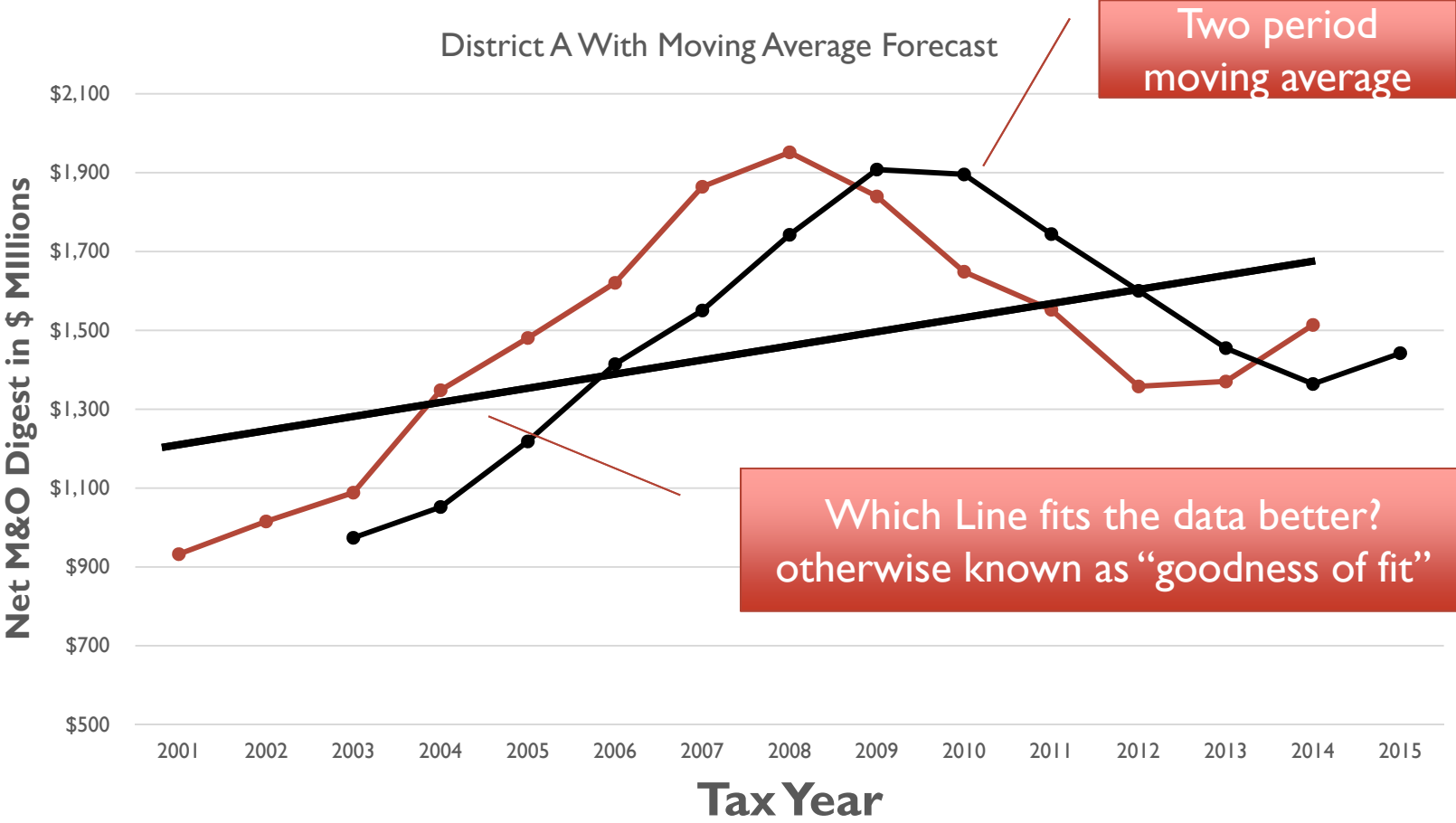
# Property Tax Revenue

- Importance: Primary local funding source for operations (with the exception of certain systems that have access to sales taxes for operations)
- Data Sources: Digest values, observed home sales, info from property tax assessor's office
- Volatility: Low, relatively easy to forecast
  - Exception: The Great Recession created declining statewide property tax digests.
- Method to Try: Linear trend forecast (ordinary least squares)

# Property Tax Revenue



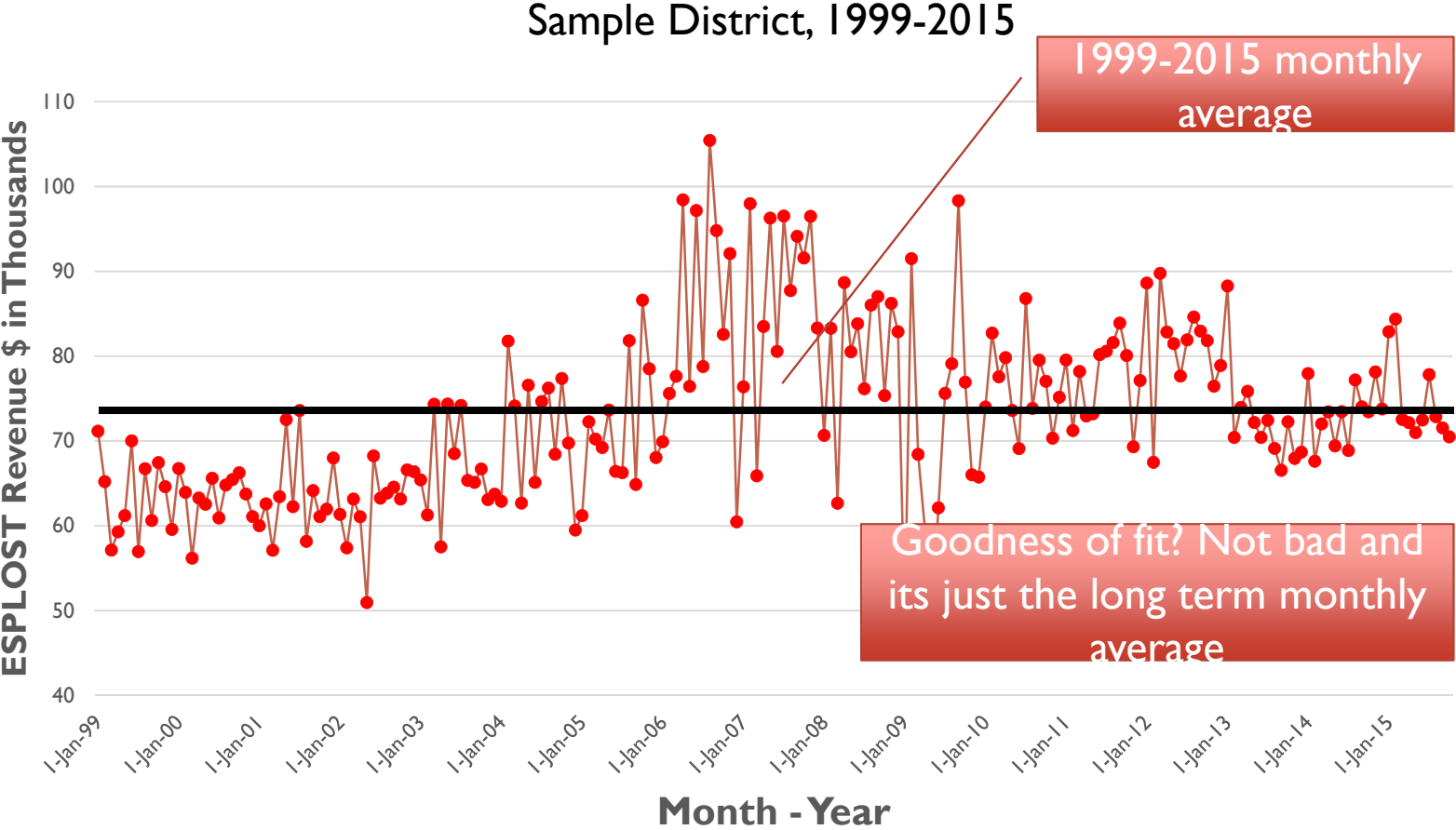
# Property Tax Revenue



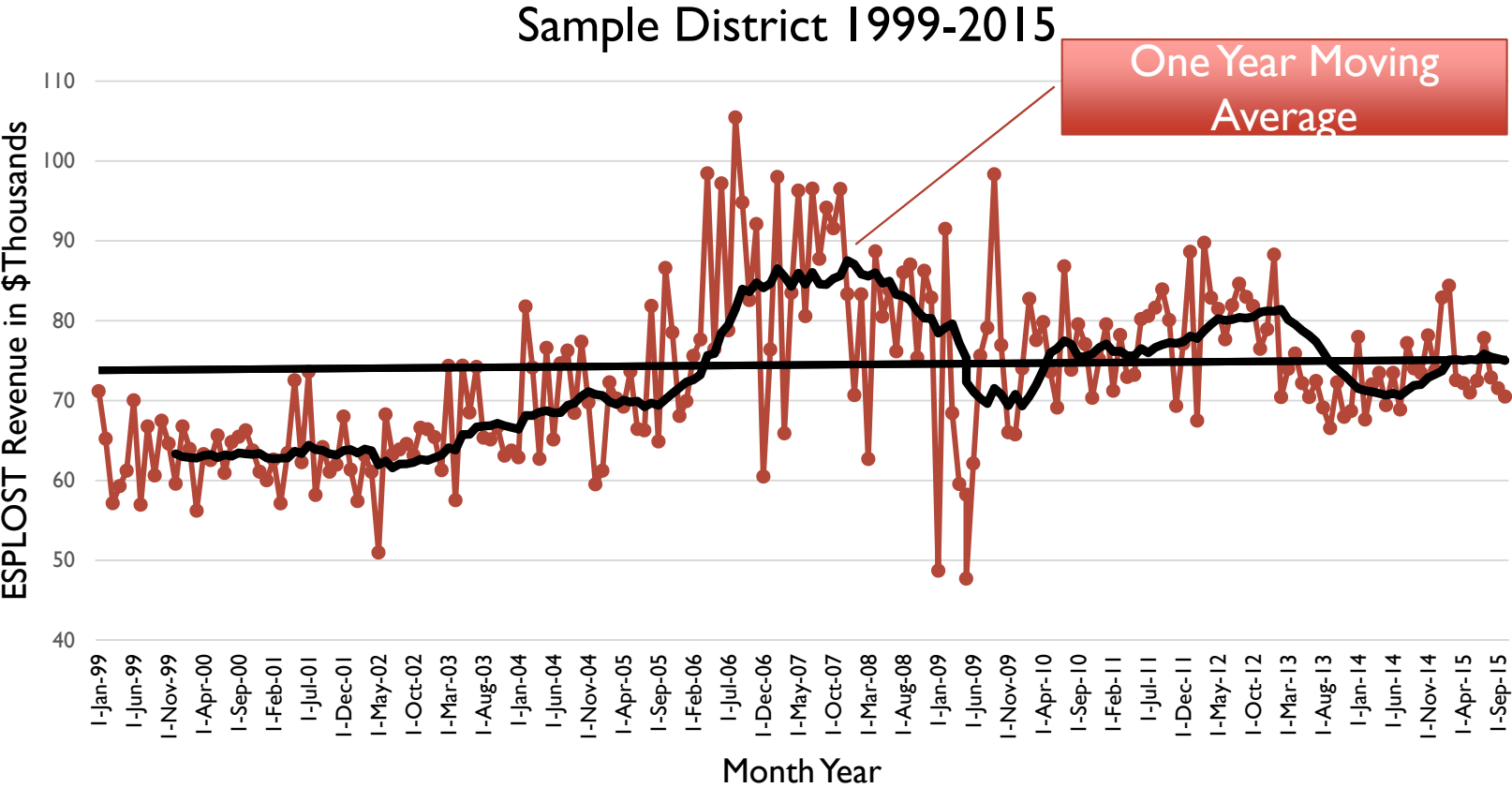
# Sales Tax (ESPLOST)

- Importance: A major fund source for capital projects
  - Districts enter into five year plans based in part on expected collections
- Data Sources: Sales tax collections (GDOR) and information on community business activity
- Volatility: High, forecast results in a wide range
  - Seasonality and other trends generally are incorporated into forecast.
- Method to Try: An observed average over a long period of time.

# Sales Tax (ESPLOST)



# Sales Tax (ESPLOST)





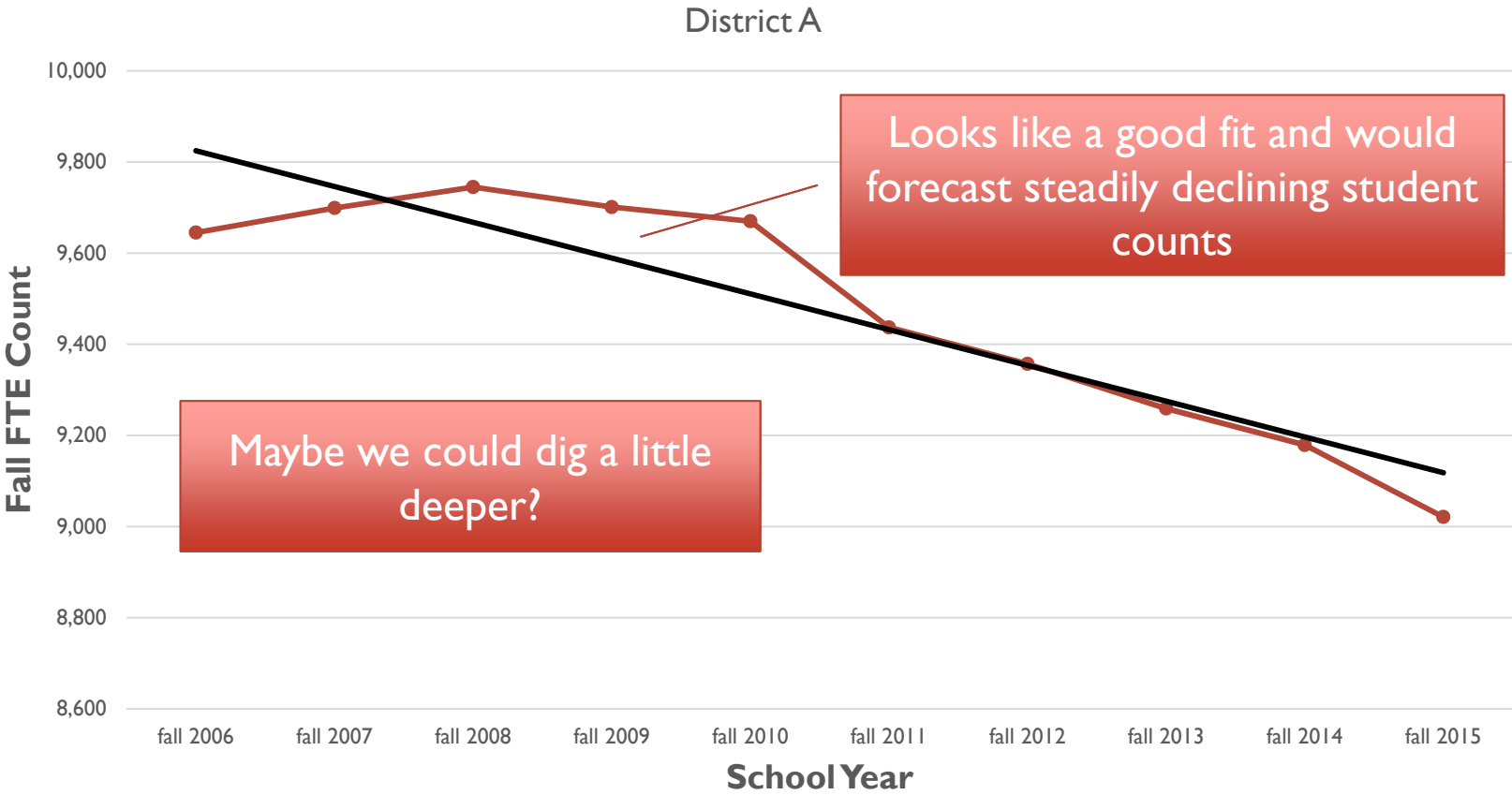
# Sales Tax (ESPLOST) – Helpful Data

- Counties governments might be producing sales tax forecasts, even within their budget documents, which can help districts predict their portion of the sales tax revenues.
- Speak to local business owners and parents.
- Georgia budget documents forecasts state sales tax revenues into the future. Check and see how well state sales tax collections track with your counties.

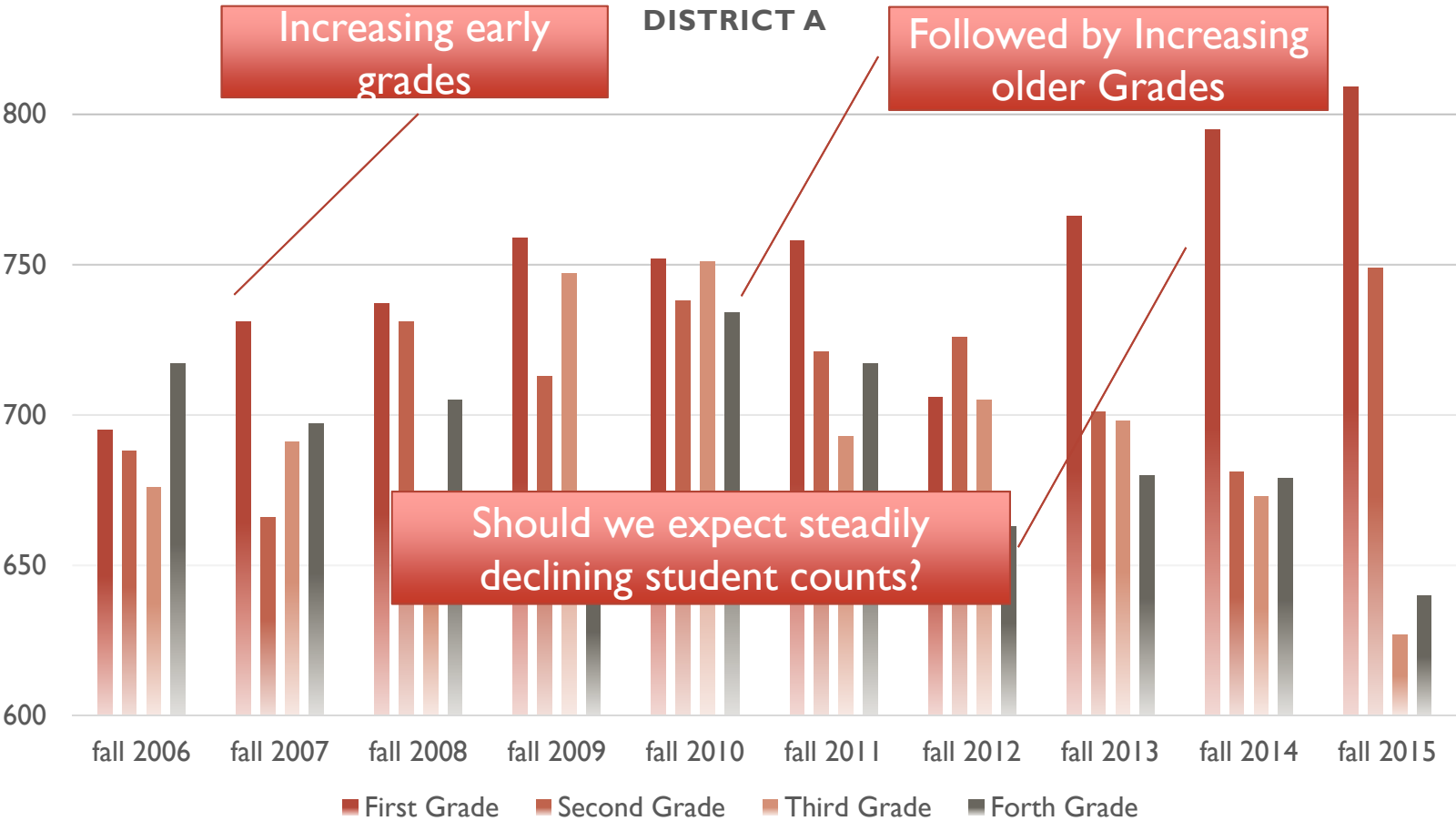
# Number of Students

- Importance: Drives state funding (QBE), expenditures, staffing decisions...
- Data Sources: Previous student counts, data on <5 y.o. children in your area, and historic drop out and migration info
- Volatility: Low
  - Based on steady drop outs, in and out migration
- Method to Try: Linear trend (OLS) to start – move to age specific calculations improve forecast

# Number of Students



# Number of Students



# Number of Students – Helpful Data

- Georgia Office of Planning and Budget provides population by age group forecasts for all of the counties in Georgia
- Other publicly available datasets do the same by race.

The screenshot shows the website for the Georgia Office of Planning and Budget. The navigation bar includes links for About OPB, Budget Information, Census Data, Planning and Evaluation, State Policies, and Apps and Resources. The main content area is titled "Population Projections" and includes a sidebar with links to Population Estimates, Decennial Census, Social and Demographic Data, Population Projections (highlighted), Maps, and Group Quarters Reporting. The main text explains that OPB is responsible for preparing and furnishing official demographic data for the state, based on residential projections. It notes that year-by-year projections are available through 2020, and county projections are available in five-year increments through 2030. A "Related Files" section contains a table with one entry: "Population Projections Request Form" (134.36 KB).

Attachment	Size
<a href="#">Population Projections Request Form</a>	134.36 KB

# Forecasting State Funding – QBE

- Predicating future student population, knowledge of proposed funding formula changes, and awareness of state budget shortfalls are the ways to forecast future QBE/State funding.

# State Funding – QBE



# What about expenditures?

- Forecasting expenditures – Based on revenue and student population forecasts
- Other changes would be based on district decisions on curriculum and improvement efforts.





# Questions?

## Contact Information

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