HOW CAN VALUE-ADDED MEASURES BE USED FOR TEACHER IMPROVEMENT?

Susanna Loeb
Carnegie Knowledge Network
January 15, 2014
Use of Value-Added

• Value-added measures do not provide teachers with information on effective practices
  – generally don’t help individual teachers improve

• Yet, value-added measures can be useful for improving instruction through other means
  – identifying practices that lead to higher academic achievement
  – targeting professional development toward teachers who need it most
Pros and Cons

• VA has pros and cons as measures of teaching performance *relative to other available options*

• *Strengths*
  – direct measures of learning = valued outcome
    • other measures often lack direct link
  – recognizes complexity of teaching process
    • many different teaching styles can benefit students
  – adjusts for characteristics of students in classroom
    • less biased than are unadjusted test score measures
    • potentially less biased than observational measures
Value-Added Measures

**Weaknesses**

- dependent on specific student tests
  - incomplete measures of all the outcomes we want to see
  - important to choose tests that measure desired outcomes and to recognize tests as imperfect
- inability to provide information about specific teaching practices
  - teachers cannot learn about practice
- imprecise
  - an individual teacher’s score is not an accurate measure of his/her performance
Uses for School Improvement

• Value-added can be used in at least three ways
  1. improving programs
  2. making decisions about human resources
  3. developing incentives for better performance
Program Improvement

• Deciding how to invest or what to expand/shrink
  – could benefit from information on the effects
  – ideally, access to random control trials in context, but usually impractical
  – VA measures alternative if aim to improve teaching

• Example: teacher professional development
  – if large enough, value-added can compare improvement of teachers who participated to others
  – better than self reports and unadjusted test scores
Program Improvement

• Imprecision
  – worse for improvement than for static measures
    • errors at start and end
  – combining VA across teachers reduces imprecision
  – shows teachers improve with experience, more in some schools

• Example: teacher hiring
  – which programs provide higher VA teachers
  – measurable candidate criteria—e.g. performance on assessments—associated with higher VA
  – here using VA, not measures of change in VA
Human Resource Decisions

• Information for better human resource decisions about individual teachers
  – imprecise, but still provides information for groups
  – e.g. targeting professional development to less effective teachers, promotion, dismissal
  – decisions likely to benefit from multiple measures

• Research only emerging on usefulness in practice
  – giving principals VA information to support their decisions
  – encouraging for high VA teachers to move to more difficult-to-staff schools
Incentives

• Performance pay
  – conceptually, logical for effort and recruitment
  – shortcomings in practice for programs based on VA
    • focus on measured outcomes, at the cost of other
    • difficulty incentivizing teachers to treat students equitably
    • can discourages teacher cooperation
    • most evidence from U.S. finds no effects
  – programs combining VA with other measures or using only other measures more promising
    • provide feedback to teachers on their instructional practices: e.g. Cincinnati, Washington D.C.
In Comparison

• Value-added measures may be used as instruments of improvement
  – program improvement
  – human resource decisions
  – incentives
• Other measures
  – provide information on practices
  – can be costly to collect
  – little information on validity or bias
• In combination
  – simultaneously
  – VA may allow targeting of the collection of more costly measures, for decision making – e.g. promotion or dismissal.
What More Needs To Be Known?

• Substantial information on the technical properties of value-added measures
• Less known about how these measures are put into actual use
  – assignment of students to teachers
  – targeting of more intensive data collection
  – performance incentives
  – in combination with other measures
What Cannot Be Resolved By Empirical Evidence On This Issue?

• Whether and how to use VA depends on local context
  – political feasibility and repercussions of the choices
  – relevance of VA information
    • importance of tested knowledge and skill
  – cost of VA
    • capacity of systems to calculate value-added and to collect other information
    • availability of well-designed tests
Summary

• VA measures do not provide useful information for teachers about practices they need to improve
  – gauge test score gains relative to expected

• VA also has drawbacks for assessing individual teachers effectiveness because imprecise

• Nonetheless, still useful for improving practice, especially when they are used in combination with other measures
  – evaluation of programs and practices
  – human resource decisions
  – incentives for improved performance

• VA is sometimes better, sometimes worse than other measures
Value-added measures are imperfect, but they are one among many imperfect measures of teacher performance that can inform decisions by teachers, schools, districts, and, states.
HOW CAN VALUE-ADDED MEASURES BE USED FOR TEACHER IMPROVEMENT?

Susanna Loeb
Carnegie Knowledge Network
January 15, 2014