# "Healthcare Exceptionalism: Productivity and Allocation in the US Healthcare Sector" By A. Chandra, A. Finkelstein, A. Sacarny, and C. Syverson

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Comments by Ariel Pakes

## Summary.

• Start with very micro production function estimation: individual "outcome" variable. Ability to condition on a year-hospital effect (productivity). A lot of data (3.5 million Medicare records from 1993-2007). All impressively good.

• Possible issues: (i) omitted risk adjustment factors and selection, (ii) use of empirical Bayes procedures to adjust the productivity estimates for measurement error, (iii) truncation (about 2/3

survive their 1-year cutoff). But there is robustness analysis w.r.t. all of these, and the results do not change markedly.

• Use estimates to look at productivity; its variance and relationship to; share, growth, and exit (as indicators of efficiency of allocation).

• This is a start on a very important questions: determinants of health care productivity.

## Interpretation of results.

• The paper is about productivity in hospital treatment of heart attack patients. Its not clear what the link is to productivity of hospitals per se, and the relationship of productivity to the healthcare sector as a whole is even further removed (so why the title?).

• Is there reason to believe that the dispersion of hospital productivity in treating heart attack patients, especially older

heart attack patients, is quite different then hospital productivity in treating other patients (e.g. cancer or surgical patients)?

• I phoned a friend who is a doctor (member of the National Academy who is familiar with aggregate health care statistics). His comment was that very little is done in hospital to older heart attack patients (average age here is 78). Major elements of the protocol: give patients beta-blockers and aspirin,

and send them home after stabilizing them (usually within 3 days which accords with their median cost of $\approx \$12,000$). The dispersion in; protocols and in the importance of doctor experience might be very different for cancer or surgical patients.

• Relatedly, if this is true, most care for older heart attack patients is ambulatory, which raises the question of whether hospital care is the major determinant of longevity.

**Analysis: heart attack productivity.**

• Some care is needed in interpretations; especially of the growth regression. An alternative interpretation of the finding that firms with higher productivity increase their market share more, is that there is a significant amount of current miss-allocation. If market shares were currently near "optimal" then there would be no reason to change.

• Also there are environments in which a low correlation between productivity

and share is efficient: whether it is depends on: extent of sunk resources, adjustment costs, and differences in demand patterns over time. With this in mind many productivity studies focus on changes in allocation as a result of a sharp change in the environment; e.g. Olley-Pakes (de-regulation) or Collard-Wexler/De Loecker (Mini-mills). Allows them to to either condition on or incorporate other factors that cause small covariances.

• Suggests focus on the relationship between productivity changes (perhaps

longer term) and and subsequent share changes.

## More integrated analysis?

• Its hard to think of the exit and growth processes as distinct phenomena. More integrated analysis? E.g. first determine exit, then look at growth conditional on continuing.

• Exit: a function of the resources sunk into the activity. "Productivity" is an important candidate for one such resource (as prior studies, including Chad's,

has shown), but there are others (doctor experience...). Hard to get numbers, but maybe condition also on size in prior year, especially since you have shown size is related to productivity. I.e. we would like to see whether productivity induces less exit once we condition on size of program (perhaps also other things).

• As you note, the $R^2$ for your regressions are quite small (in the range of .05). So maybe there is a relationship on average, but there is a whole lot of

noise to explain. Maybe useful to provide the s.d. of the impact of a 1 s.d. change in productivity as well as the mean?

## Questions for further research?

I don't know the extent you can get at these.

• The productivity impacts of hospital (or hospital doctor) experience in providing for heart attack patients. We know this matters a great deal for health

outcomes for other types of patients; so perhaps we should also try it for heart attacks.

• Productivity differences between markets or regions. You say there is little relationship to "competitive pressures". How about spatial correlation? There is a large literature (that you cite) on differences in spending, protocols .... Does this match up with the productivity differences?

• Do we know anything about differences in quality of life after the heart attack, and its relationship to productivity?

• You note that the hospital selection mechanism is unknown, and underlies many of your results. A little bit more investigation might tell us something about the relationship between share and productivity. Do VETs go to VA hospitals, and Kaiser insured patients go to Kaiser hospitals? When we take

these out how many patients go to distant hospitals? Is there a relationship of distance typically driven to a hospital and productivity?.....