A Review of:
An Economic Case for Increased Competition in the Sale of Beer, Wine and Spirits in the State of Kansas
by the
Coalition for Jobs and Consumer Choice

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1. Introduction

Coalition for Jobs and Consumer Choice's (2011) report addresses "Kansas' legal restrictions that prevent grocery and convenience stores from selling full-strength beer, wine and spirits." The report seeks to make two contributions to the policy analysis of those restrictions:

- An informal summary of the theoretical economic benefits that could accrue to Kansans from eliminating those restrictions, and
- Empirical estimates of the dollar value of some but not all of those benefits.

Theoretical analysis. The report focuses on three retailing sectors:

- Liquor stores
- Grocery stores
- Convenience stores.

While (as discussed below) the theoretical analysis is in some respects not entirely clear, the main potential benefits to Kansas claimed by the report appear to include:

- Increased efficiency of retailing operations achieved by utilizing economies of scope and scale within grocery stores and convenience stores, leading in turn to
  - higher productivity per worker in those stores, leading to
  - higher wages per worker.
- Relocations of some convenience and grocery stores in Missouri near the Kansas border into Kansas so as to be nearer to markets, as a result of the new opportunity to sell liquor.
- Increased convenience for customers.
- Increased numbers of stores in rural areas of Kansas.
- New construction resulting from relocations and expanded operations.
- Indirect (i.e. multiplier) benefits resulting from direct effects listed above.

In addition, as noted below the report implicitly assumes that total employment in the three retail

sectors will increase in non-border regions (as well as in border regions), but this assumption is not explicitly stated and no theoretical mechanism is suggested to explain it.

The report identifies sales, jobs, wages, and tax revenues lost in existing liquor stores as potential costs of eliminating the restrictions. As discussed below, the report does not attempt to provide a more complete inventory of economic costs—hence it is a partial benefit study rather than a true impact analysis.

Empirical analysis. The report attempts to provide numerical estimates for three effects along four economic dimensions for the three sectors. The economic effects are:

- the direct effects of improved productivity on operations of grocery and convenience stores;
- the direct effects of new construction and renovation in grocery and convenience store; and.
- the indirect or multiplier effects resulting from the these two direct effects.

The economic dimensions under study are:

- jobs
- wages
- state taxes
- local taxes.

The report arrives at some truly astonishing findings. Productivity effects alone (together with associated multiplier effects) are estimated to cause increases in Kansas state-wide aggregates for the combined liquor, grocery, and convenience store sectors as follows:

- jobs: + 32.6%
- wages: + 34.2%
- state taxes + 34.2%
- local taxes + 34.2%.

(Source: my calculations using data from Tables 1 and 4.) To put these numbers in perspective, consider that these retailing sectors are known to be driven by state income and consumption in a basically proportionate manner—that is, to double grocery store sales, you would normally need to at least double state income. The report's estimates imply that eliminating the relatively minor restrictions on sales would have the about the same impact on these three sectors as increasing real state income by one-third—an undertaking that would normally take a decade or longer. This finding is implausible on its face. As shown below, it is also inconsistent with the report's productivity story.

In the following sections I will explain why the methodologies used in the report cannot be expected to arrive at credible estimates. Section 2 describes a major error in the analysis of the productivity effect. Section 3 describes the unlikely nature of the estimates of construction

effects. Section 4 describes a problem in the analysis of multiplier effects. Section 5 lists several other methodological errors, questionable assumptions, and overstated arguments, without giving a full analysis. Section 6 makes concluding remarks.

2. The mismeasurement of productivity

The productivity model. The productivity model in the report proceeds as follows. State-level data were gathered for each of the three sectors on:

- stores per capita
- average employees per store
- average employee wages as a share of state average wages.

The data are for Kansas and for five selected comparison states that do not restrict liquor sales. (Data were also gathered on four other states that do restrict liquor sales, but these data are not used in the impact analysis.)

The report then apparently makes the following assumptions. When restrictions on liquor sales are removed :

1. Total sales of liquor and of groceries are assumed unchanged (e.g. because "Research suggests that cultural factors more than economic factors drive alcohol consumption.")

2. Numbers of stores per capita in each Kansas sector change to match the average level of the five comparison states.

3. Numbers of employee per store in each Kansas sector change to match the average level of the five comparison states.

4. Average wages as a share of state average each Kansas sector increase to match the average levels of the five comparison states.

5. State and local tax revenues increase in proportion to total wages.

The calculation of increases in employment, wages, and tax revenues is then straight-forward.

Misinterpretation of the data. The report claims that these increases represent productivity improvements. That claim is mistaken, as can easily be shown.

Productivity is defined as output per worker. There are only two ways to increase productivity–either:

a. produce more output while holding workers constant, or

b. produce the same output while reducing the numbers of workers.

In the present case, output consists in sales of liquor and groceries. These are held constant by Assumption 1, above. Therefore productivity increases can show up *only* as a *reduction* in employment.

But according to the model, total employment *increases* by +31.6% (direct effect) and +32.6% (total effect). Indeed, it is this increase in employment that largely drives all of the positive results claimed in the report.

The report's raw data do in fact show higher retailing employment per capita in deregulated states than in Kansas. In a simplistic model this would normally be interpreted as showing that deregulated states are *less* productive than Kansas. However, it is more reasonable to assume that something else entirely is going on. For example, grocery stores in deregulated states may be providing higher levels of consumer service than is customary in Kansas. Discovering what is really going would require a small research project, but in any case increased productivity cannot possibly be the explanation.

A fundamental complexity in the productivity story. I agree with the report's point that it is important to encourage productivity improvements, as one among several economic development strategies. However the productivity issue is much more convoluted and problematic than the report lets on. Unfortunately, the usual first-round impacts of productivity improvements are likely to include layoffs and reductions in aggregate wages—outcomes that are actually counter-productive for economic development goals. The benefits of higher productivity come later, and in some cases may not even come at all (e.g. if benefits were exported to owners or customers out of state). Understanding how all this could benefit Kansas would require a much more subtle model than the report has proposed.

Also, productivity improvements are normally much more important in sectors that sell outside the state ("export base sectors") than in domestic sectors like retailing. If there are significant productivity benefits to be had in retailing, they are almost surely orders of magnitude smaller than what the report has estimated.

3. Illusory construction benefits

The report estimates construction impacts in the state of Kansas by multiplying an estimate of the cost of one new store by the number of new stores estimated using the methodology described in Section 2 above. After including both direct and multiplier effects, the report estimates these additions to the state economy:

+ 39,523 job-years
+ $1.691B in non-recurring wages.

(Source: my calculation from data Table 10. The report labels the first item as "jobs" rather than

"job-years," but insofar as they are limited-term construction jobs they must surely mean job-years. The term "jobs" refers to jobs expected to continue more or less indefinitely into the future.)

These rather prodigious amounts depend entirely on the model discredited in Section 2, and hence are not to be believed.

4. Misleading use of revenue and multiplier estimates

The report presents its tax revenue estimates in a misleading way. In competent policy analysis, tax revenue estimates are usually presented in one of two ways:

> a. In the case of a newly defined tax base or an increased tax rate, the revenue estimate represents net additions to the budget that will tend to reduce revenue shortfalls or generate a surplus.
>
> b. In the case of a change in underlying economic conditions, two separate budget effects must be estimated:

- the change in tax revenues, and
- the change in government expenditures needed to service the changed economic conditions.

> The net fiscal impact is the *difference* of the two amounts. Net fiscal impact, not gross revenue impact, equals the new money available to address revenue shortfalls.

In the particular case this report, we are dealing with the second kind of situation, yet the report provides the first kind of estimate. Moreover, the report leaves the distinct impression that the changes under consideration about would help deal with the current Kansas budget crisis:

> ... the state of Kansas faces a budget shortfall of an estimated $550 million in fiscal year 2011.
>
> The appropriate policy response to the economic situation is to remove impediments to the overall competitiveness and productivity within the Kansas economy.

As it happens, however, the IMPLAN model utilized in the report makes a default assumption that changes in the government's revenues are exactly matched by changed in its expenditures, so that increases in economic activity have no net impact on the budget. In that case these changes could not possibly help address the Kansas budget problem.

In other words, according to the model any new jobs and wages generated by removing the liquor restrictions would bring with them equal new demands on government for services. One possible mechanism is that new jobs would be filled either by inmigrants, or by existing unemployed residents who otherwise would have exmigrated. In either case the net result is more families in

the state making more demands on government.

While other modeling approaches are possible, the report does not address them. In any case, the model should, but does not, show some degree of reduction in benefits due increasing expenditure burdens on government.

5. Other issues

The report has several other problematical features.

Poorly sourced data. I was unable to check the paper's calculations because it was too hard to track down its original data sources.

Possibly biased sample of states. For unexplained reasons, the report omitted some states that are relatively close to Kansas (Arkansas, New Mexico, Texas) in favor of some that are further away (North Dakota, Minnesota, Indiana). Because the data were not available, I was unable to test whether this led to a bias in the sample.

Incomplete analysis of costs. As noted, the report focused on the benefits of regulatory change and ignored most of the costs. I have already mentioned the ignored costs of government services, and the problem of short-term job losses when productivity improves. For discussion of several other omitted costs see Duncan (2011).

The false assumption that productivity gains always cause firm-level wage gains. The report justifies its Assumptions 2, 3, and 4 based on a vague chain of arguments I was not able to follow (and which in any case, as shown above, was surely wrong). However part of that argument was not at all vague. In particular, the report makes a case for believing the following assumption:

> 6. Increases in productivity at the firm level show up as proportional increases in wages.

This claim is both interesting and wrong. What is interesting about it is that it is true *at the aggregate or macro level*.[1] Indeed the report provides some (unsourced) data showing it is true in aggregate for Kansas. However it is *not* necessarily true at the micro or firm level. Instead, the benefits of changes in productivity are allocated between workers, owners, suppliers, and consumers depending on market conditions. For example, a monopsony (i.e. a monopoly employer, such as a large employer in a small isolated town) can if it so chooses pass on *none* of the gains from productivity improvements to employees—and indeed it may even respond to

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[1] See e.g. Stein (1995). Even at the macro level there is considerably less substance to this claim than meets the eye—it is logically equivalent to the well-known regularity that the aggregate labor share of income is roughly constant over time for a given economy. The equivalence follows from GDP accounting, because productivity is net output per worker, while average wage is the labor share of output per worker.

It is simply not the case that labor share of output is constant over time at the sector or firm level—partly because output does not equal income at the sector or firm level (the difference consists in intermediate products that are netted out at the GDP level).

productivity improvements by laying off workers and cutting wages.

One-sided theoretical analysis of border relocation. The report suggests that relaxed regulations could lead some retailers to relocate into Kansas. It fails to mention important reasons why any relocations are likely to be too few and too slow to have noticeable budgetary impacts during the present fiscal emergency. For example:

- Locations of convenience stores near the border are mainly influenced by state taxes on gasoline, which are lower on the Missouri side.
- In the case of both convenience stores and grocery stores, relocations into Kansas will be impeded by the higher liquor taxes on the Kansas side of the border.
- Location decisions tend to be subject to "hysteresis," which means that business types tend to stay in place due to interference from existing developmental patterns. For example, it would be very hard to put a new store in a developed residential area. Since nearly the entire border area of Greater Kansas City is already highly developed (or else borders the Missouri River), short distance relocations are likely to be substantially inhibited.

Misleading theoretical analysis of relocation in rural areas. The report suggests that relaxed regulations could slow down or reverse the historic trend of retailing to abandon sparsely developed rural areas in favor of more centralized locations in areas with denser development. Actually, standard theory suggests that the opposite is much more likely, i.e. that rural abandonment will be speeded up.

In particular, rural abandonment is driven, among other factors, by improved transportation combined with the rise of larger and larger retailing units run by chain—i.e. supermarkets and Wal-Marts—plus the rise of high-volume convenience stores, also run by chains. What gives these larger operations an economic advantage are factors such as economies of scale, economies of scope, concentrated purchasing power, and one-stop shopping convenience. Deregulation will achieve productivity gains only to the extent that it adds to these forces. Hence deregulation is likely to speed up the centralization of retailing away from small, scattered, rural sole proprietorships and towards centralized chains.

6. Conclusions

The report's theoretical discussion of the benefits of deregulation has some value as a provocation, but it is very far from providing a tight or complete theoretical analysis. It is also unfortunate that it fails to address the cost side of deregulation. Among other factors, the report fails to consider the potentially negative impacts on the state economy of shifts from locally-owned enterprises to national chains.

The report also fails to point out that the short-run impacts of productivity gains are more likely to include job losses than job gains. While long-term productivity gains in export-base sectors are very important to future Kansas growth, short-term productivity gains in retailing sectors cannot

possibly help address our immediate state budget problems.

The report does pull together some interesting and suggestive data, not all of which I have addressed here. However I have addressed every attempt te report makes to lead from that data to concrete estimates of the impacts of deregulation. In my opinion none of those estimates have any degree of validity.

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Ad Astra Institute is a 501(c)(3) non-profit think tank dedicated to the analysis of Kansas state policy and politics from the point of view of the pragmatic interests of ordinary citizens. It was founded in 2005 and is located in Lawrence, Kansas.

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