

# Planting Progress?

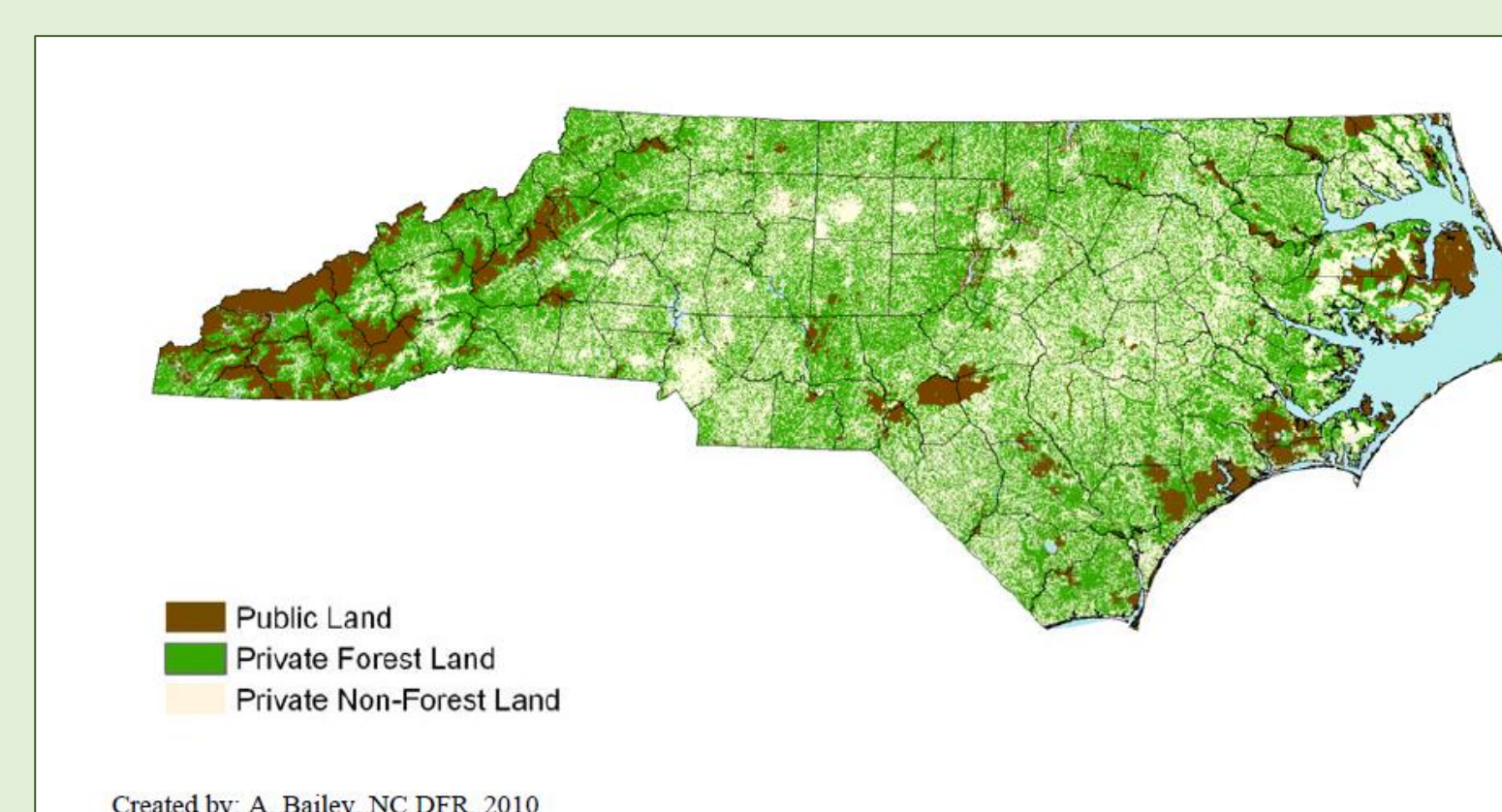
## Evaluating the Economic Growth Potential of Western North Carolina Forest-Based Sectors

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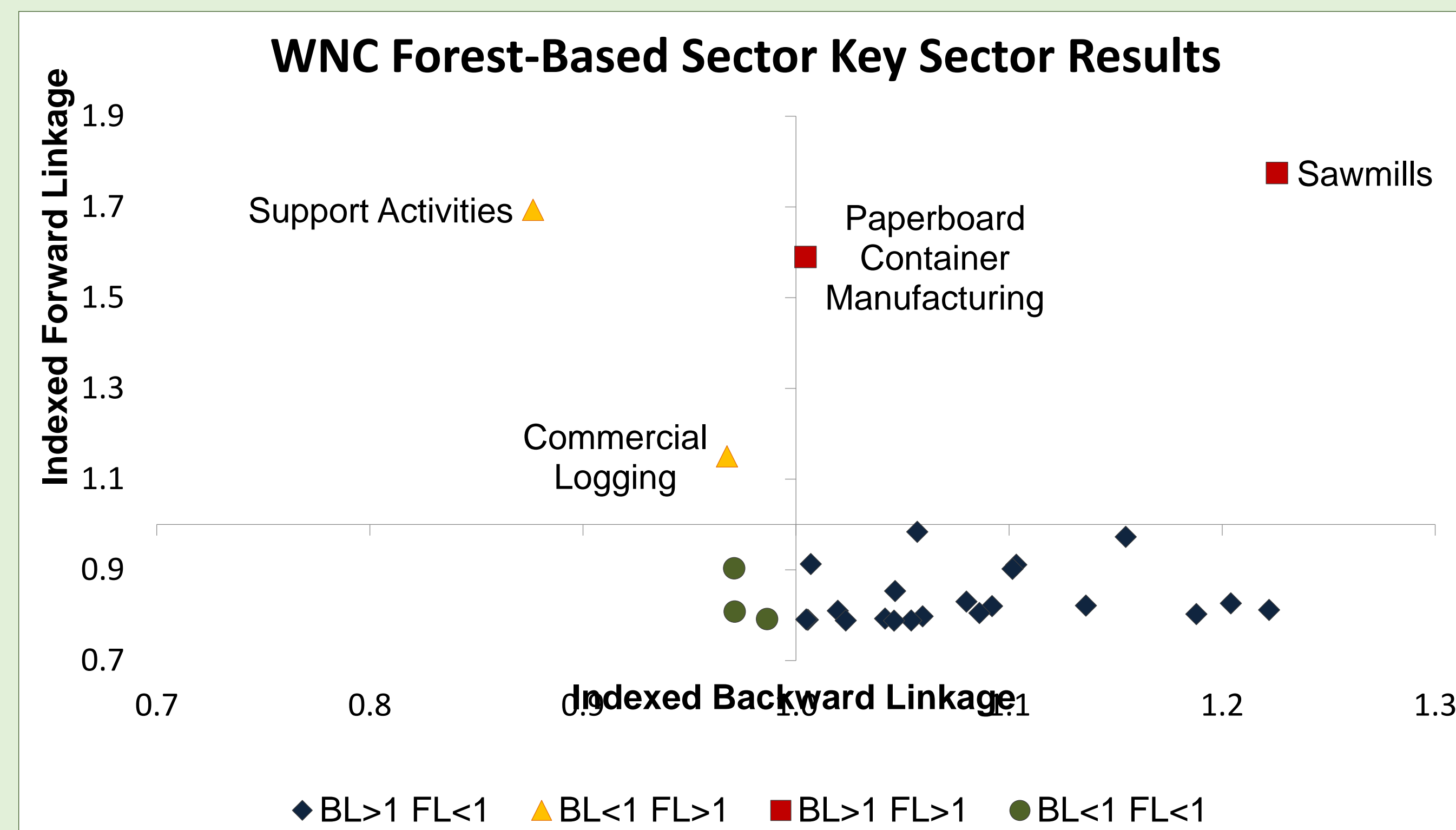
### Motivation

Western North Carolina Economic Indicators <sup>1</sup>			
	State Average	Western NC	Regional Rank (1-7)
Median Age	37	44	7
Median Household Income	\$46,000	\$38,000	7
Percent Below Poverty Line	16%	17%	4

The 32 western most counties in North Carolina contain significant forest resources. The region is 66% forested, far above the statewide average of 59%. The study region also lags far behind the state as a whole according to key economic development indicators such as median household income. This presence of abundant forest resources and economic need prompts the question of whether forest-based sectors in the region are well positioned to contribute to sustainable economic development.



### Previous Research



An initial analysis of the 28 present forest-based sectors' ability to both grow the regional economy and respond to regional economic growth showed most with only an above-average ability to do the former. The construction of those two metrics takes into account only inter-industry relationships within the region. Therefore while forest-based sectors appear weak, there is a strong possibility that is a symptom of the fact that many contribute to the regional economy by interacting with those outside the region, thereby bringing new money to the local economy.

### Research Questions

Are forest-based sectors in Western North Carolina capable of generating exogenous economic development?

If so, are they able to do so in an above average way compared to other sectors in the regional economy?

Given previous results, are forest-based sectors generally weak, or are they contributing to the regional economy in ways previous metrics did not capture?

### Methods and Data

Data from IMPLAN was used to construct net linkages as described by Oosterhaven<sup>2</sup> for each forest-based sector for value-added and employment. Value-added and employment were evaluated as they are the best indicators of a sector's ability to contribute money and jobs to the regional economy. Linkages were constructed using matrices representing value-added/employment coefficients, total requirements of inter-industry relationships, and final demand for all sectors such that such that:

$$V_{Net} = \langle v_c \rangle (I - A)^{-1} \langle f \rangle$$

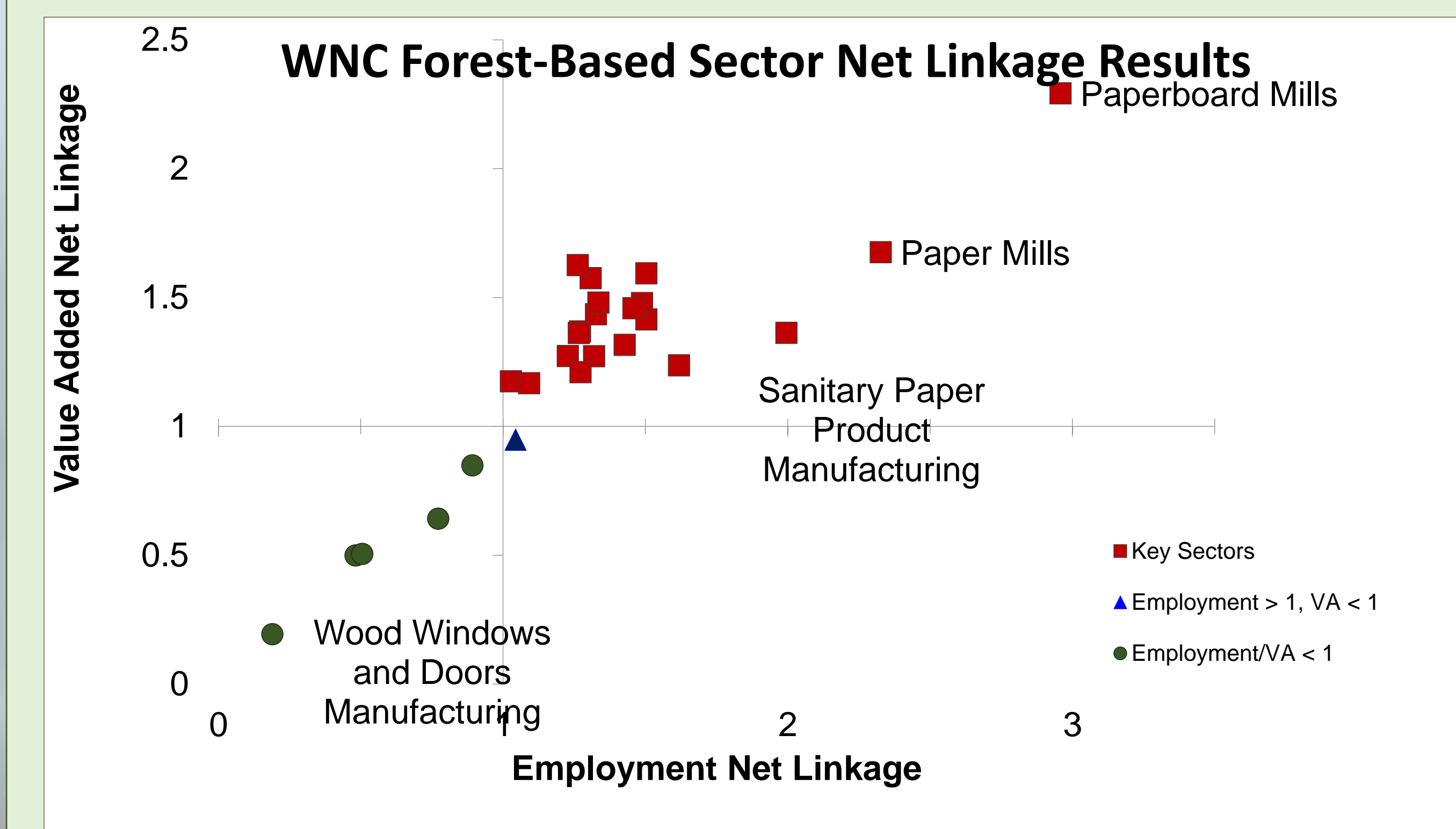
$$E_{Net} = \langle e_c \rangle (I - A)^{-1} \langle f \rangle$$

The resulting matrix was summed by row and column. Row sums represent gross activities, or amount in which the sector is meeting regional needs. Column sums represent export activities, or the economic activities needed to produce the sector's goods and services for export. Export in this case refers to goods and services sold outside the study region. For each forest-based sector, column sums were divided by row sums such that:

$$V_{net} = \frac{V_j^{Base}}{V_i^{Gross}} \quad E_{net} = \frac{E_j^{Base}}{E_i^{Gross}}$$

A major strength of the net linkage metric is its dual interpretation. Sectors with both  $V_{net}$  and  $E_{net}$  greater than 1.0 have an above average ability to contribute to the regional economy by bringing new money to the region via exports. Sectors with  $V_{net}$  and  $E_{net}$  less than 1.0 contribute through import substitution. Both are needed for sustainable regional economic growth.

### Results



The net linkages of forest-based sectors in Western North Carolina appear to show a healthy forest economy. Paper, furniture, and certain manufacturing sectors generally show net linkages greater than 1.0, indicating those sectors contribute to the regional economy by bringing new money to the region. Resource sectors and manufacturing sectors closely connected to those resources generally show net linkages less than 1.0. This indicates those sectors serve as import substitution for the region.

This mixture of sectors serving as exporters and import substitution means that the forest economy of Western North Carolina is healthy and well-suited to serve as a basis for economic development.

### Future Areas of Inquiry

- Evaluate forest-based sectors according to market and industry trends to determine those that can safely be relied upon for growth
- Investigate specific forest-based economic development projects to evaluate impacts

### Acknowledgements

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### References

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