

Forest conditions, history, and trends in the Southeastern U.S.

DAVID WEAR

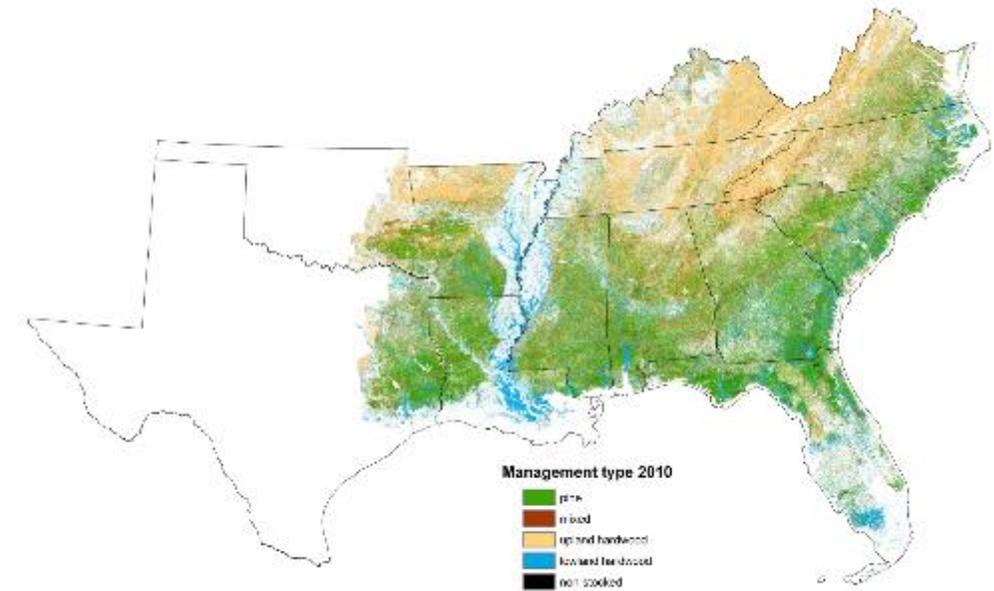
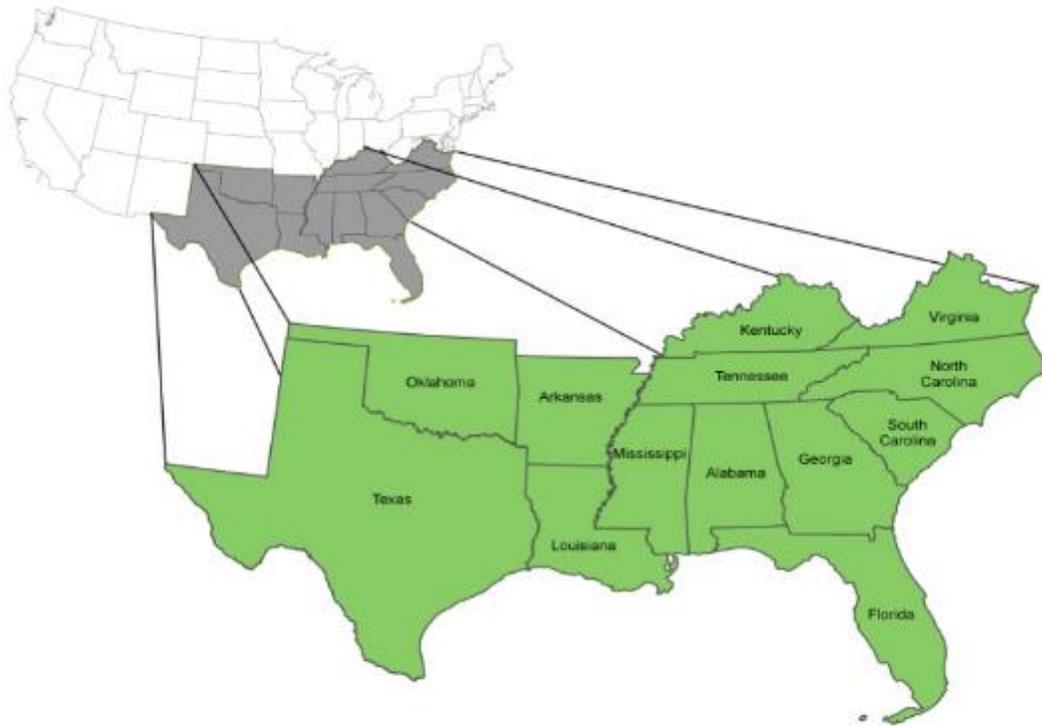
USDA FOREST SERVICE

SOUTHERN RESEARCH STATION, CENTER FOR INTEGRATED FOREST SCIENCE

NC STATE UNIVERSITY



Study Area



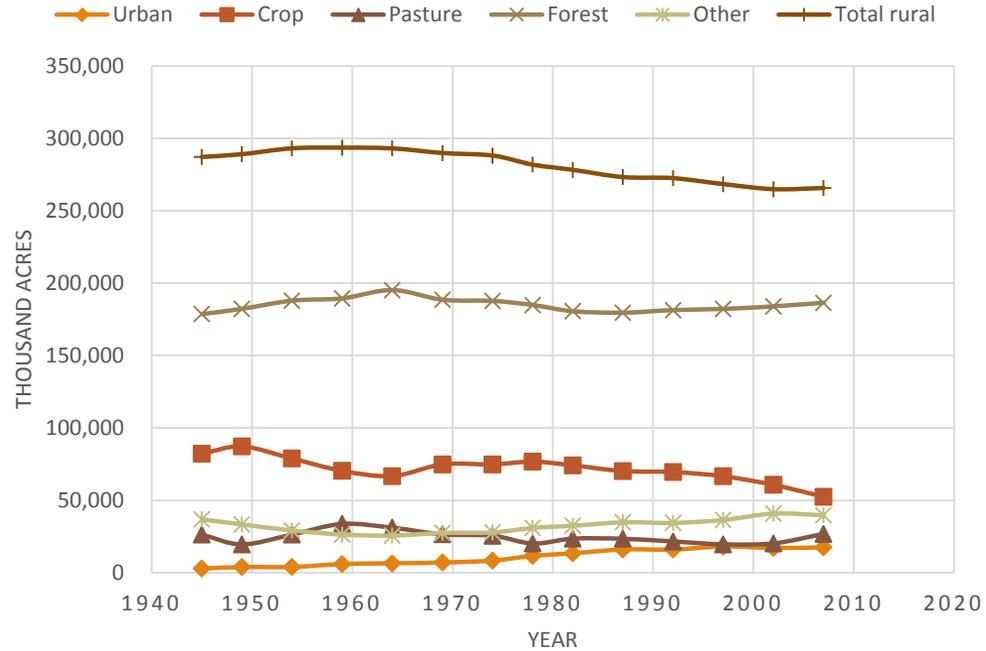
Episode	Mechanism	Outcome	Secondary
Settlement	Clearing land for agriculture	Great reduction in forest area	Shift in species
Lumbering	Mining old growth forests	Cut over forests—shift in species and environmental damage	Industrial boom and bust
Abandonment	Abandoned farm fields + abandoned title	Natural regeneration and policy responses	National and state forests; low land prices
Conservation	Progressive scientific management	Conservation practices and forest management standards	Increasing specialization
Consolidated agriculture	Transportation systems and technology	Reduces local demands for some agricultural products	Economic change and more land reversion to forests
Market order	Regional economic growth, national end of old growth	Increasing land values; active forest investment	Land use change at the margins

Phases of landscape change in the South

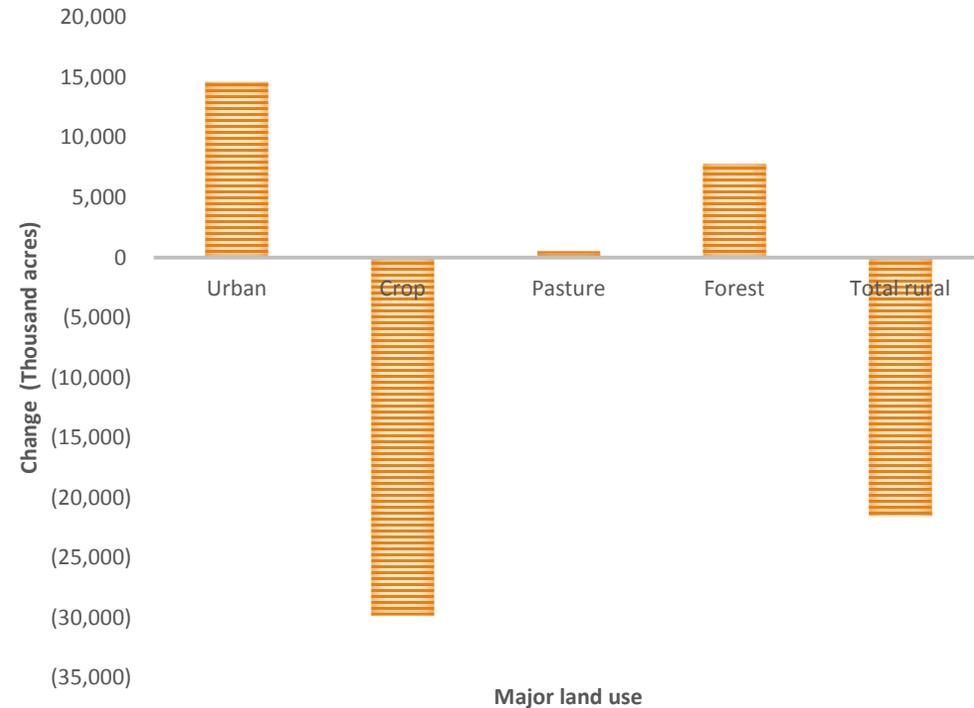
Defines the context for future change in forest area and conditions

Land use history

MAJOR LAND USES: SOUTH (W/O TX AND OK)

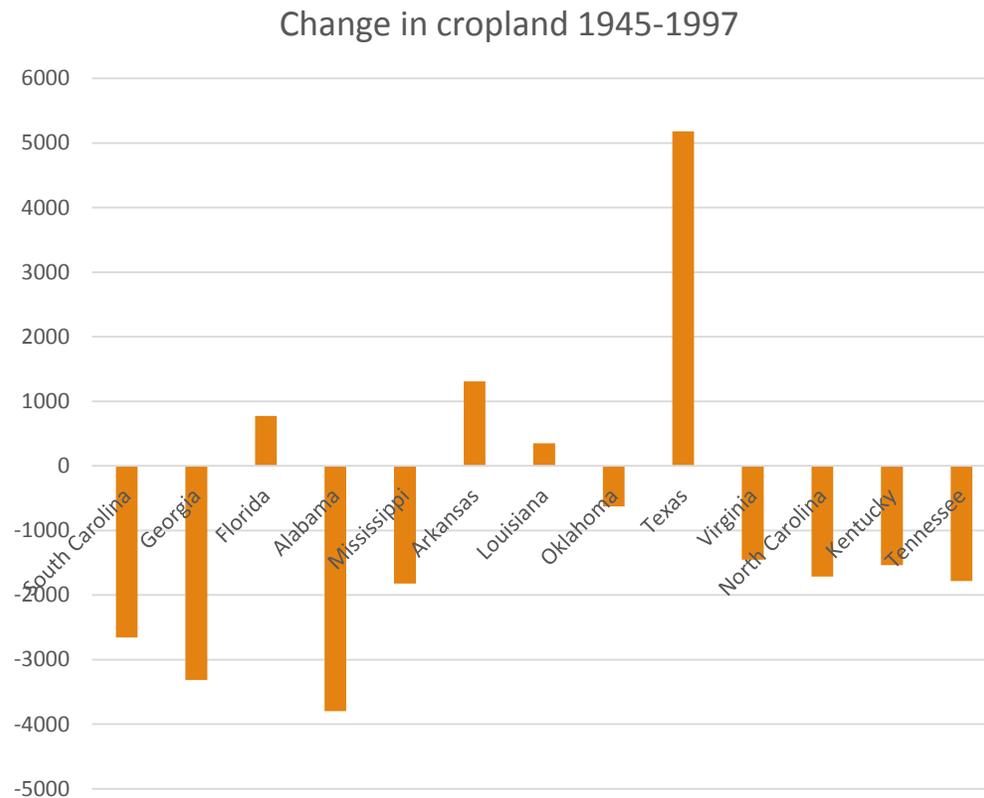


CHANGE: 1945-1997



Source: Major Uses of Land in the United States, 2007 (C.Nickerson, R. Ebel, A. Borchers, F. Carriazo)

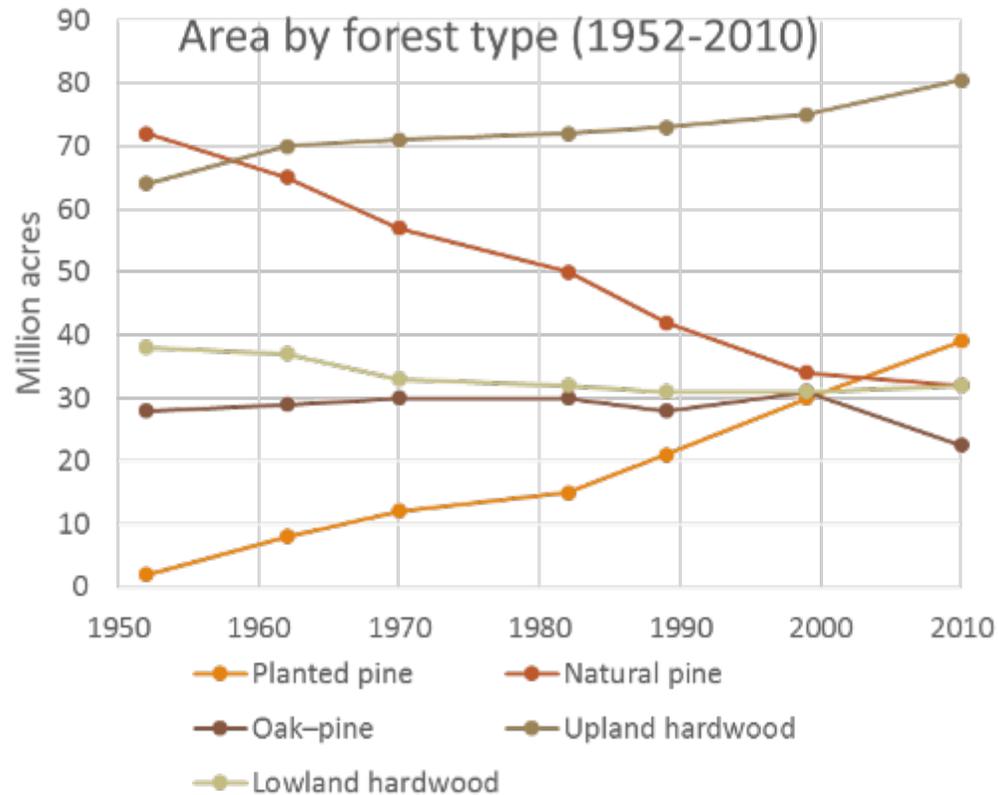
Agriculture consolidation



Consolidation of agriculture in the second half of 20th century

- Increasing market integration
- Crop production concentrated in Florida, Mississippi Delta (Arkansas, Louisiana, and Mississippi), and Texas
- Declines elsewhere

Stable forest area



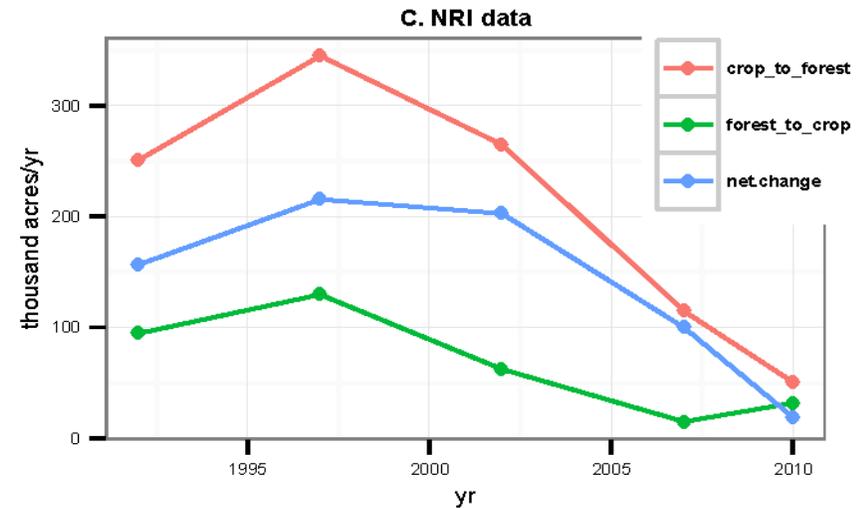
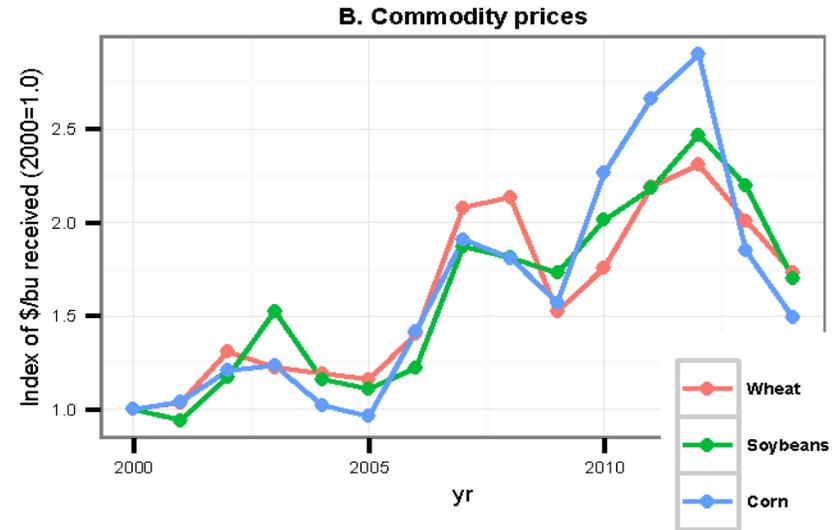
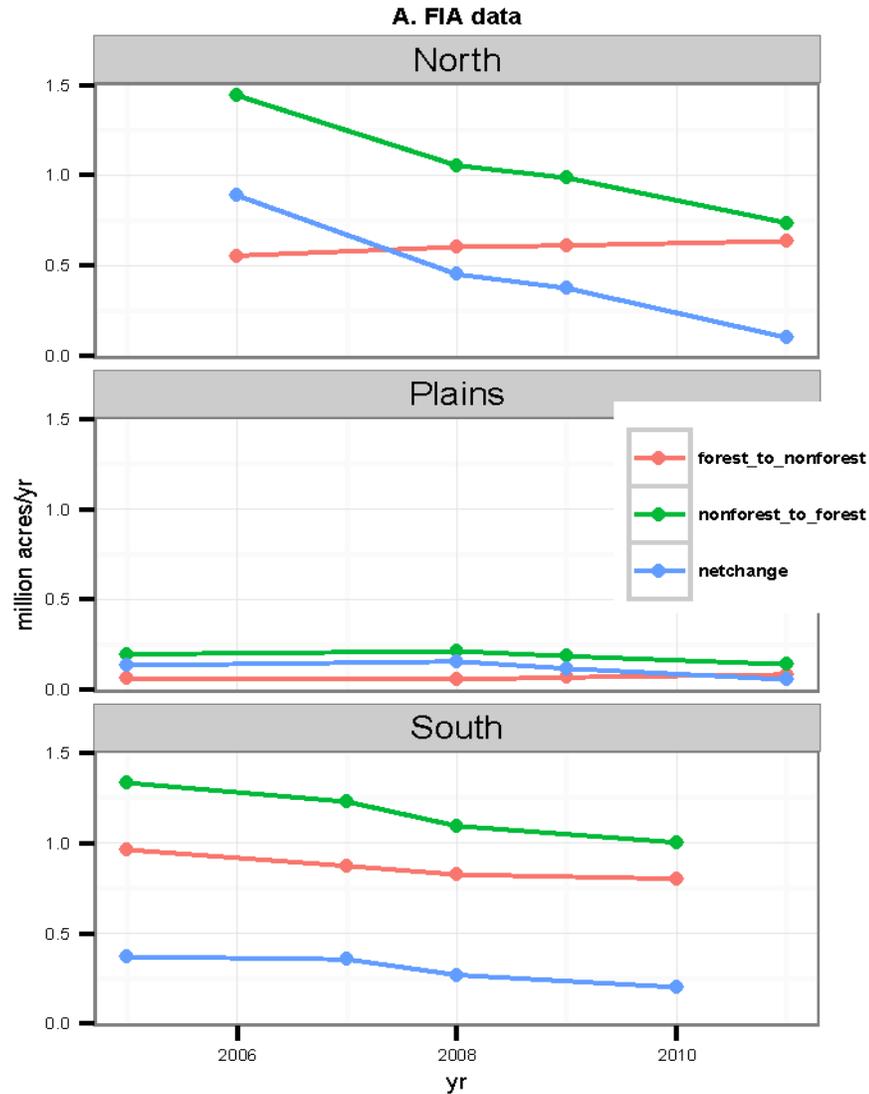
Stable forest area reflects forest-developed transitions offset with agriculture-forest transitions

While forest area has been relatively stable, the area of planted pine types has increased from near zero in 1952 to about 40 million acres in 2010

Planted pine is about 19 percent of total forest area in the South

Shift toward agricultural forestry especially as federal timber harvests decline in the West.

Recent transitions: forest-crop



Southern Forest Futures: Scenarios

Developed from RPA/IPCC Scenarios

- **A1B**: high economic growth, moderate population growth
- **A2**: moderate economic growth, high population growth
- **B2**: moderate economic growth, low population growth

Linked to downscaled climate projections

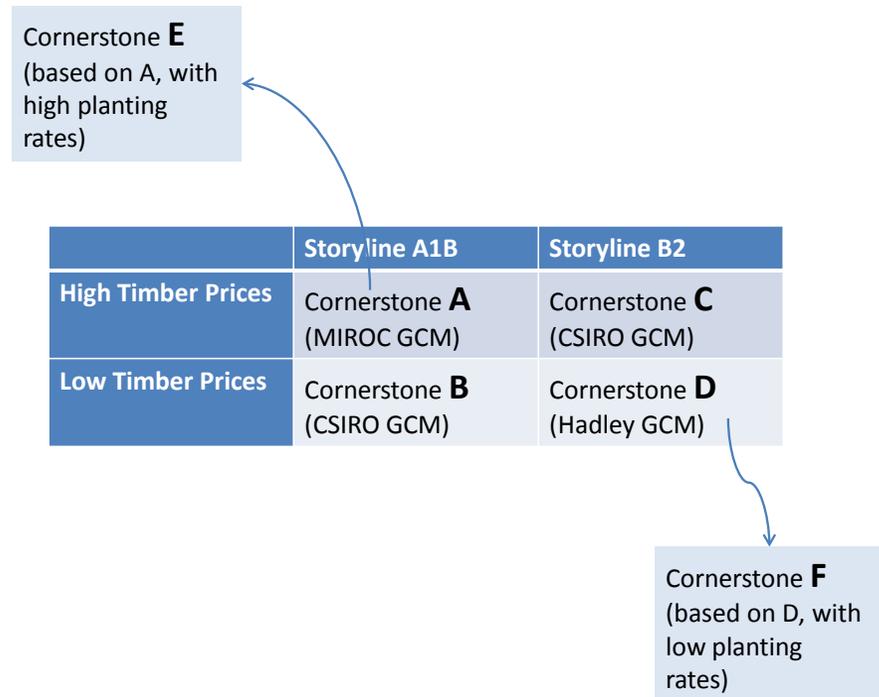
Cornerstone Futures

Population/income forecasts from RPA/IPCC

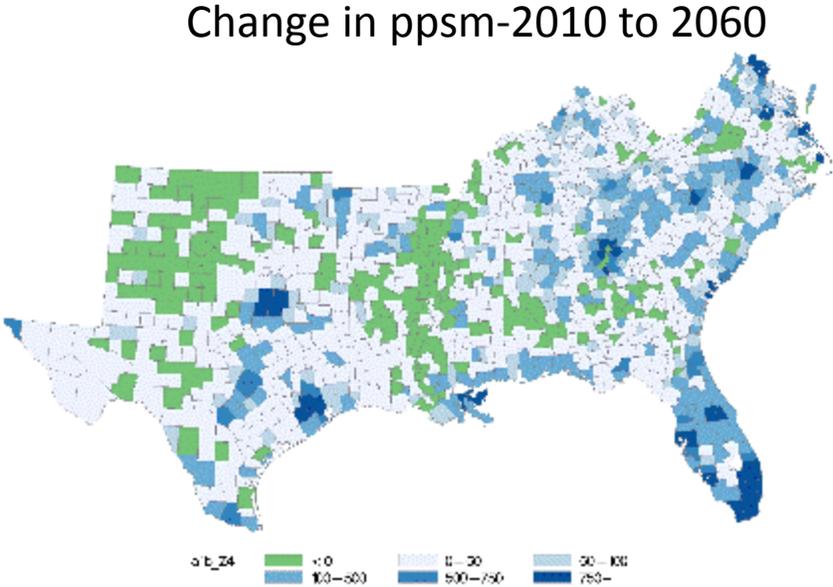
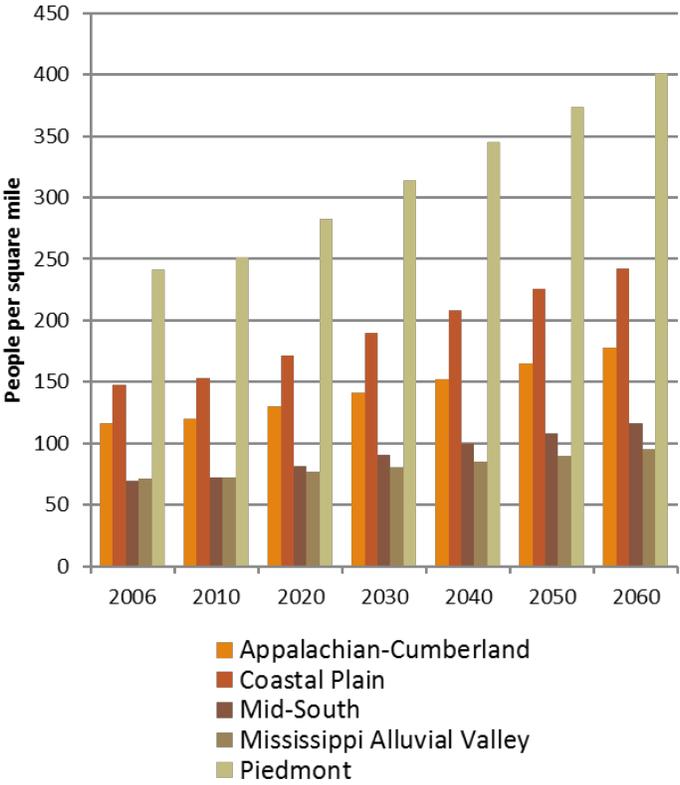
Climate forecasts from RPA/IPCC

Product market futures

Tree planting intensities



Population growth



Developed land use projections

Change in urban land use area: South by scenario

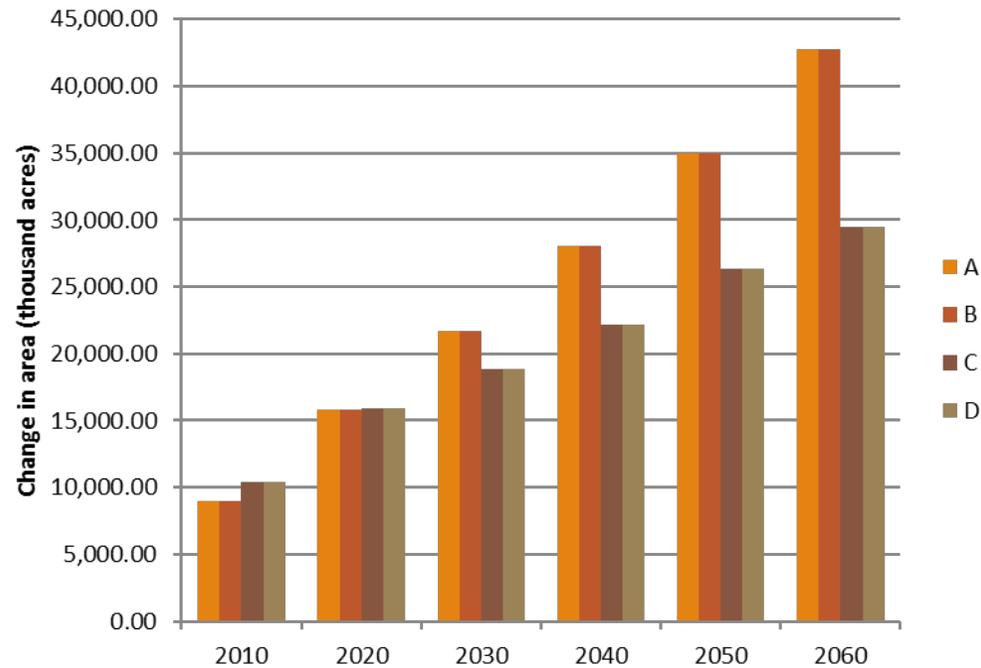
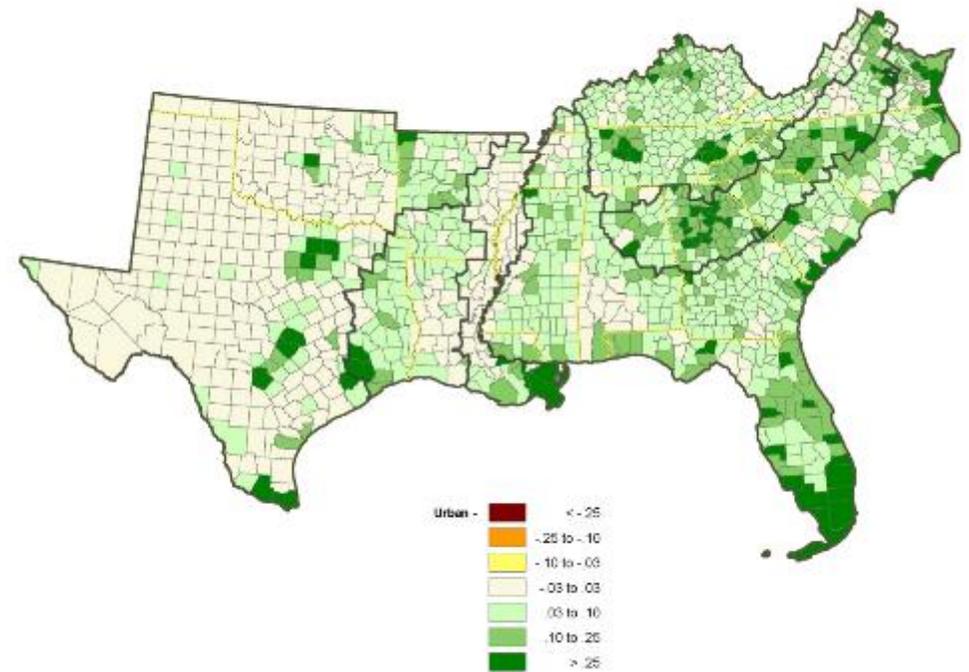
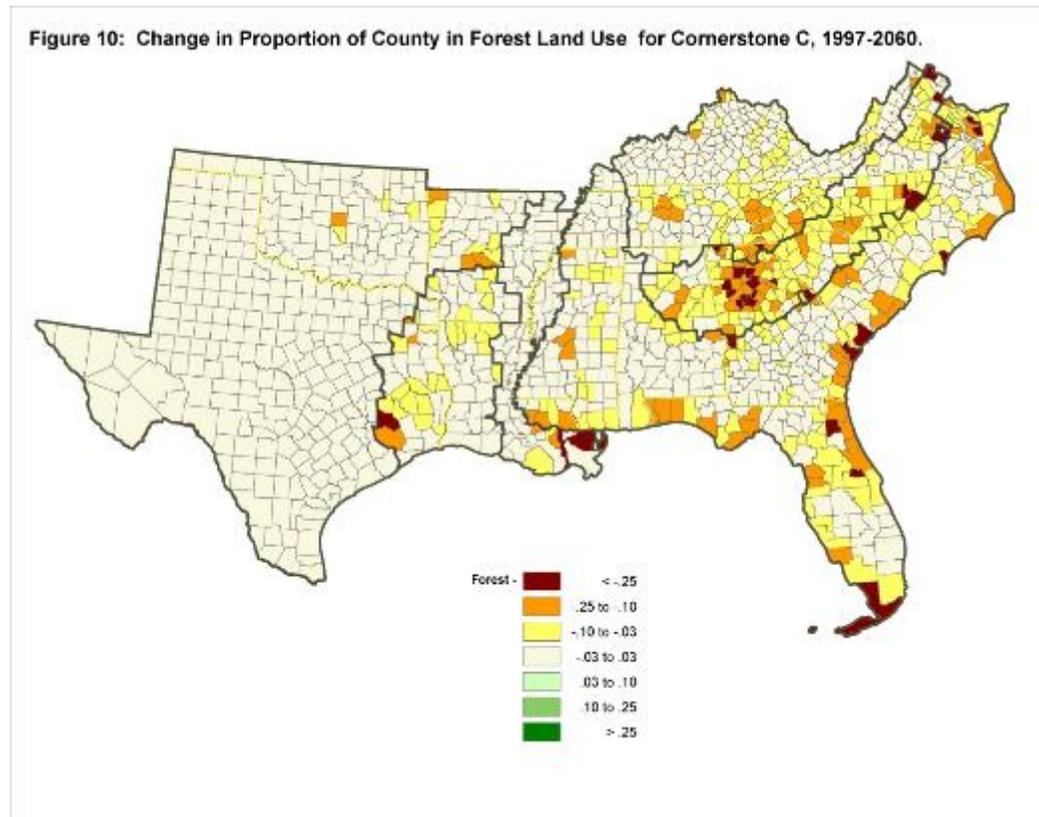
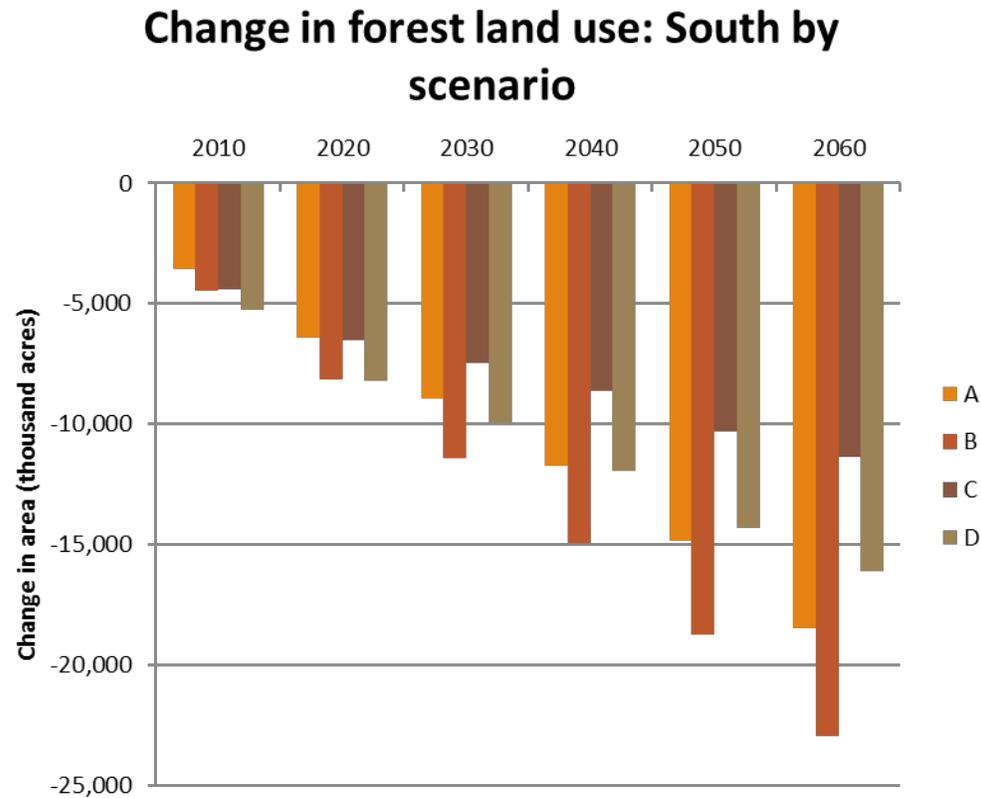


Figure 6: Change in Proportion of County in Urban Land Use for Cornerstone C, 1997-2060.



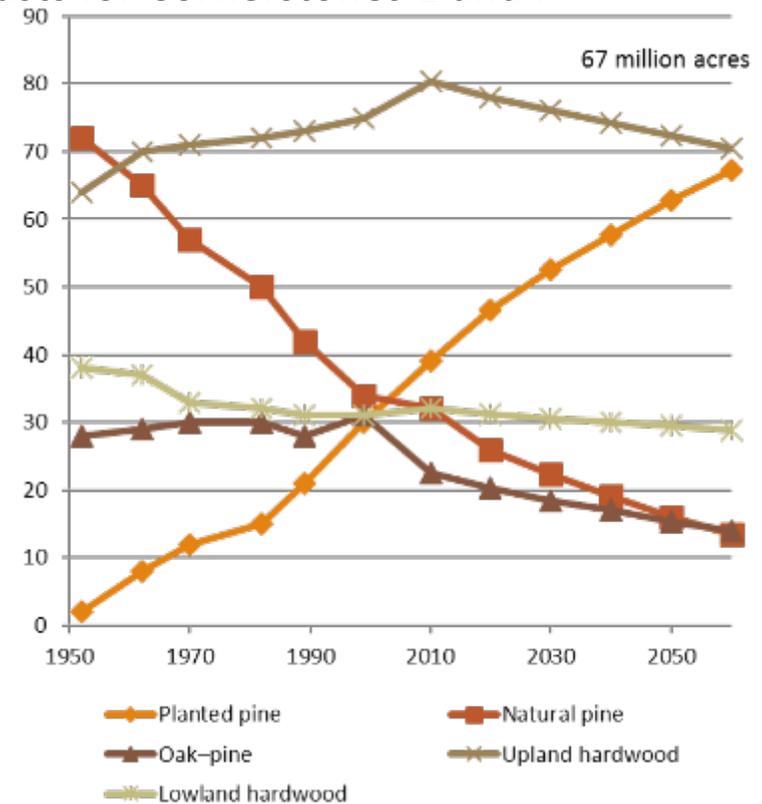
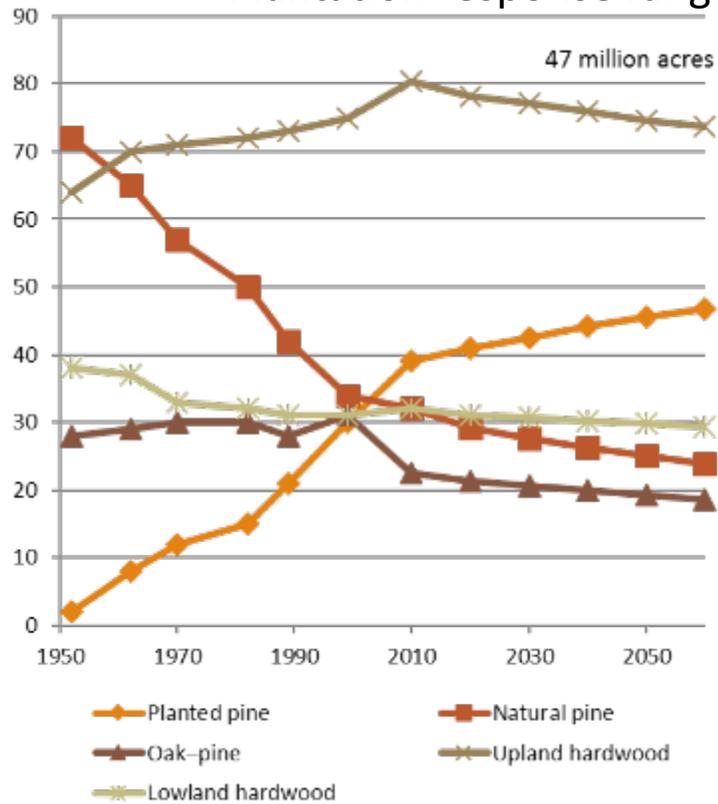
Forest land use projections



Scenarios A and C have lower timber prices; B and D have higher. Higher timber prices lead to about 5 million acres more forest in 2060 as more agricultural land is developed.

Pine plantation response to market

Plantation response ranges between forecasts for Cornerstones E and F



Timber Market Futures

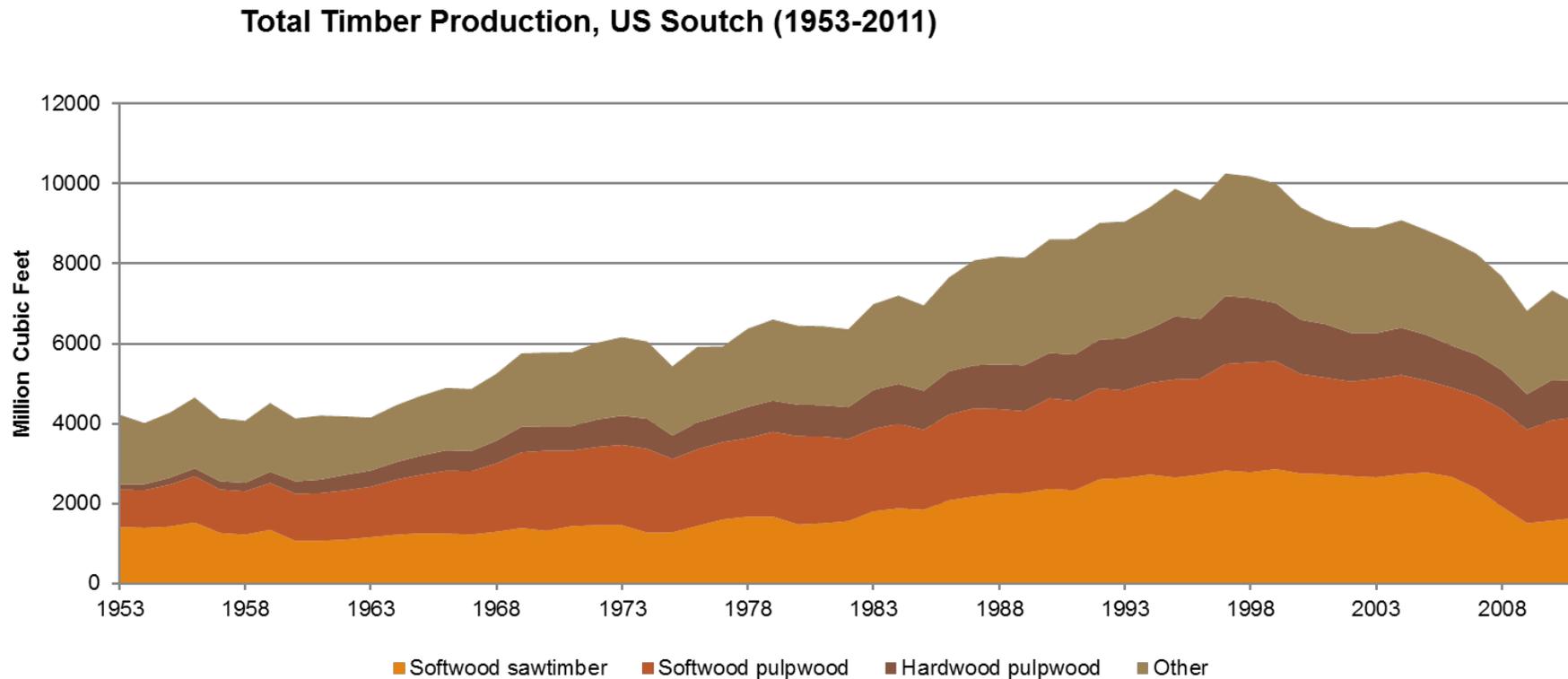
Supply growth can support an orderly expansion in timber production

- +40 percent (from 2007 levels) without productivity increases
- +70 percent with productivity increases

Question: what is the source of demand growth.

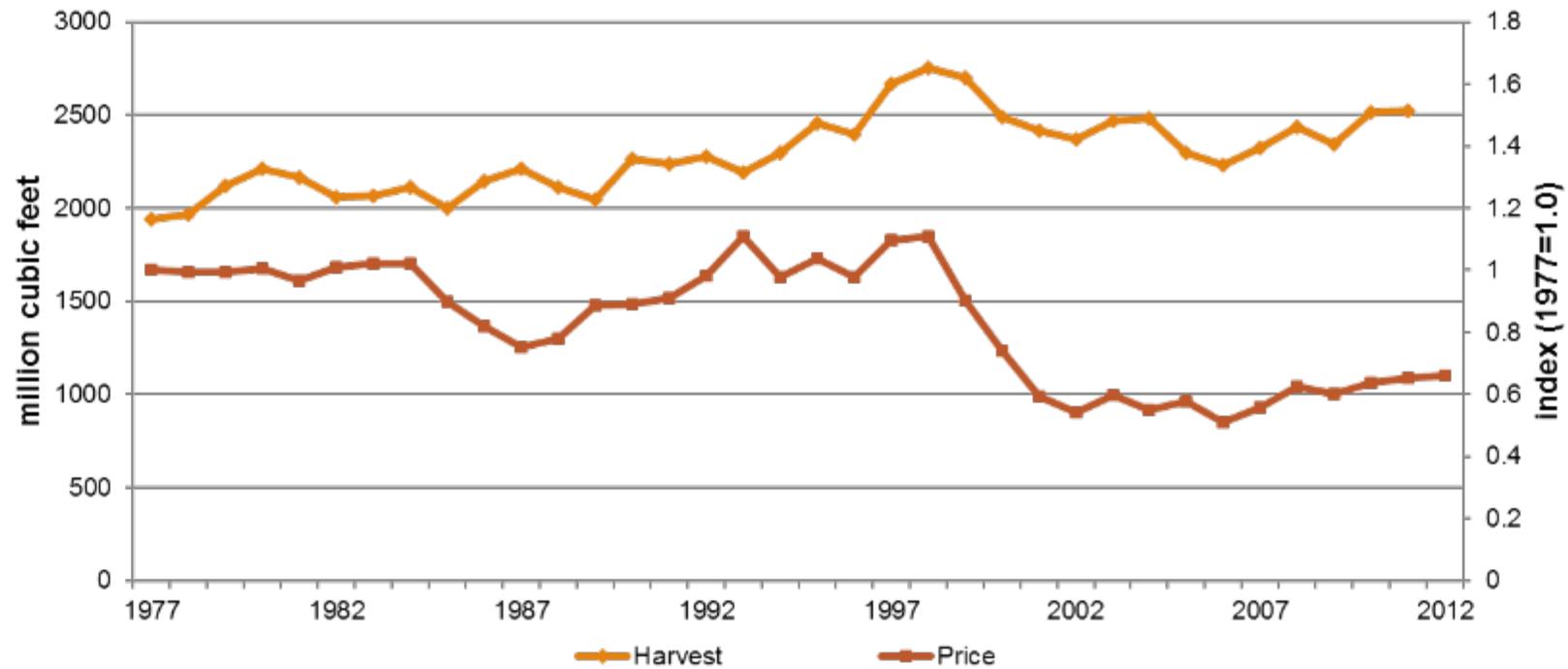
- RPA and other assessments indicate that bioenergy is only likely source

Roundwood harvests in the South (1952 to 2006)

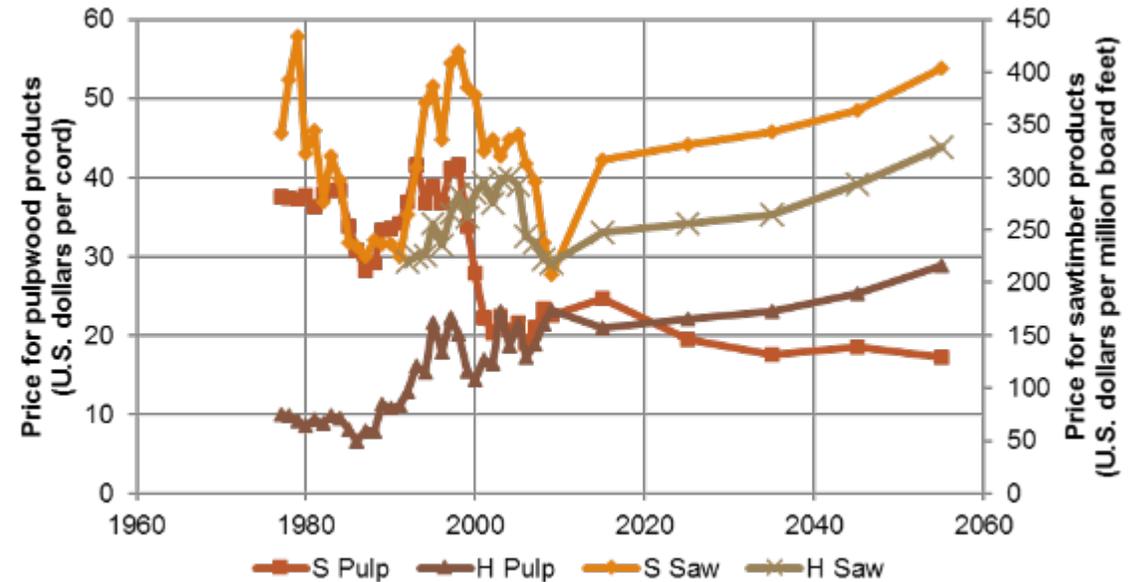
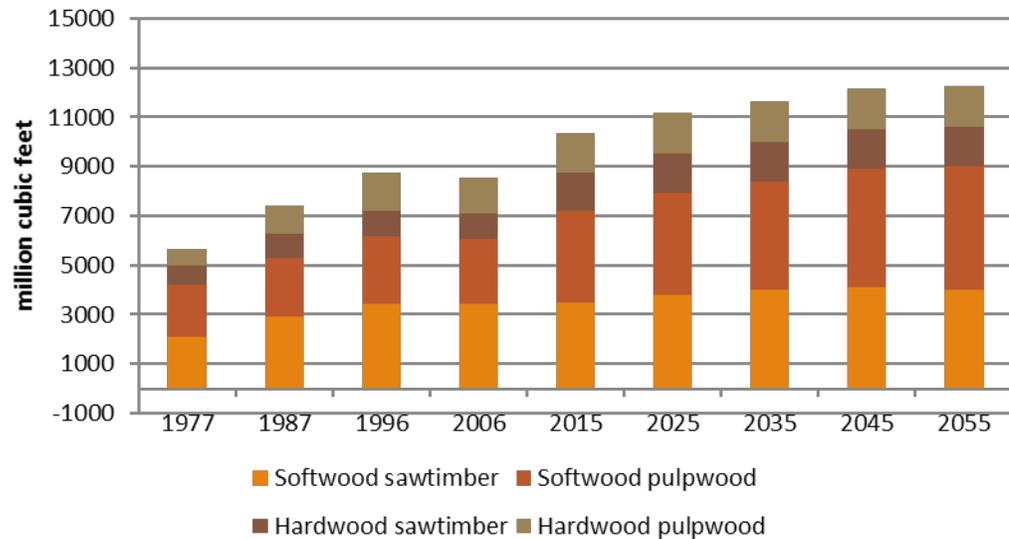


Softwood pulpwood harvest and prices (1977-2008)

Softwood pulpwood harvests and prices, US South(1977-2008)



Projections: Return to demand growth



Conclusions

Forestland stability in the US South has reflected two dynamics

- Conversion to developed uses
- Ongoing transition from agriculture to forest

Most recent dynamics indicate a dampening of the ag-forest transition due to economic forces

- Seems to suggest increased sensitivity to economic signals

Land use projections

- Increasing developed land uses at rates consistent with 1990s growth (+30-40 million acres)
- Decreasing rural land uses

Rural projections

- Projected elimination of ag→forest transition leads to net loss of forest area through 2060 (-11 to 23 million acres)
- Higher timber prices (relative to ag prices) leads to less forest losses (5 million acres for these scenarios)

Conclusions

Timber markets are “orderly” in the South

Timber markets have the capacity to expand-demonstrated by very strong investment in sector

The greatest uncertainty regarding timber market futures is the future of demand

Thanks for listening
