

An Economic Analysis of Early School Start Date in Alabama

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Executive Summary

Purpose

This report attempts to estimate the economic cost of early school start date on the economy of the State of Alabama. It is important to mention at the onset that this report is not a cost and benefit study; where the cost of early school start date is compared and weighted against the education efficiency or the students' achievement gains.

Background

- The move to earlier school start dates is a relatively new trend.
- In 1988, nearly 50% of American public schools started before September 1.
- By 2002, that percentage increased to 71%.
- The justification for this steep increase in early school start date is due to:
 - A desire to administer the first semester exams before the Winter break
 - To maximize the number of instructional days prior to standardized achievement testing in spring
 - A response, particularly by the Southern states, to the 1983 report "A Nation At Risk" which issued a call to public school officials to boost student achievements result
- After many years of pushing the school start dates back deeper toward early August, several states, especially the Southern states, are beginning to question the wisdom and the logic behind such moves
- We believe that at this point, 11 states have already enacted laws regarding a later start dates.

Alabama School Start Dates

- A cursory examination of the school start date for 2009 academic year in Alabama shows that an overwhelming majority of schools started on 6th or 7th of the August.
- Indeed, 70% of all schools in Alabama started their instructional phase by August 7th.

Cost to the Alabama's Economy

- There are four broad categories of economic costs and losses that can be attributed to early school start dates. They are as follows:

- Earning foregone (potential earning loss to teachers, auxiliary staff, and students)
- Higher school operation (wages) cost
- Utility cost
- Tourism loss

Earning Foregone

- One effect of compressed summer season is to reduce seasonal employment opportunity for students, teachers, and staff.
- Income is forgone when these individuals return to school early.
- For this cohort, the employment loss equates to a loss in personal income.
- Our estimates yield a total estimated earning forgone of \$3.4 million per day for every day that the summer season is shortened.

Higher school operation (wages) cost

- This cost elucidates the payroll savings from those employees who work less than year-round.
- These savings can be realized from compressing the school year and avoiding the payroll expense.
- We estimate that the non-professional employees' payroll savings can amount to approximately \$2.6 million per day for each day spent not working associated with compressed school year.

Utility cost

- In any given year, June, July, August and September are the hottest months in Alabama.
- Any of these months can be the month with the peak electricity use of the year.
- Typically, May has never been the hottest month during this time, but the last two weeks of June are.
- Logically, a shift in school start dates from the last three weeks of August to the end of May and early June should result in lower electricity expenditures for Alabama school systems.

- Our analysis shows that such a simple exercise can lead to lowering of the utility (electricity) demand by the school systems by approximately 6%.
- This leads to an electricity savings of approximately \$14 million for the school systems in Alabama.

Tourism loss

- A compressed summer will, most likely, impact the tourism industry the hardest.
- Like many Southern states, tourism in Alabama peaks during the summer months.
- Shortening these peak summer months will adversely impact the tourism industry revenue and will lead to lower revenue and higher tourism related price.
- We estimate that the compressed summer has produced a total of \$260 million of revenue loss for the tourism industry.

The Total Economic Cost of Early School Start Date

- The total economic cost of shortened summer on State of Alabama, on a per day basis, is estimated to be approximately \$26 million.
- This economic loss is directly attributed to early school start dates and compressed summer season.
- Extending our analysis, we have estimated that if the schools could re-arrange 10 days of their academic year, the projected economic gain of such action can lead to approximately \$300 million of additional revenues for all constituents in the state of Alabama.

Introduction

This report attempts to estimate the economic cost of early school start date on the economy of the State of Alabama. It is important to mention at the onset that this report is not a cost and benefit study; where the cost of early school start date is compared and weighted against the education efficiency or the students' achievement gains. While the former cost is quantifiable, the latter is a long term intangible benefit and has its roots on the community egalitarian concept and the theory of economics of public good. For this reason, this report is an academic exercise aiming at capturing the monetary thus quantifiable economic costs that can be directly attributable to early school start date.

Background Information

According to a 2004 report by Texas Comptroller of Public accounts, the move to earlier school start dates is a relatively new trend. This report sites that nearly 50% of American public schools started before September 1 in 1988. By 2002, that percentage increased to 71%¹. The report attributes the reason for this steep increase in school start date to three determining factors. They are as follows:

1. A desire to administer the first semester exams before the Winter break
2. To maximize the number of instructional days prior to standardized achievement testing in spring
3. A response, particularly by the Southern states, to the 1983 report "A Nation At Risk" which issued a call to public school officials to boost student achievements result

The Texas report concludes that "as testing has become more a high stakes affair, both in terms of student academics and funding, this [early school start date] has emerged as a significant issue."

After many years of pushing the school start dates back deeper toward early August, several states, especially the Southern states, are beginning to question the wisdom and the logic behind such moves and are beginning to investigate the economic cost of the shortened summer.

Parents, legislators, and school officials in Georgia and Tennessee are engaged in a discussion of merit of school start date. According to The Atlanta Journal-Constitution, starting with 2009-10 school year, Georgia schools could start two weeks later under a proposal by state schools Superintendent Kathy Cox. The justification for such proposal is to use results from summer retests. The change helps more schools reach the testing goals required by the federal No Child Left Behind Act. The newspaper article reports

¹ www.window.state.tx.us/specialrpt/schoolstart2004/

that of the 374 schools that missed testing goals last year, 36 schools would have met the mark if results from retests were used.²

Tennesseans are also engaged in similar debates. Recently, Rep. Montgomery of Tennessee filed a bill to create a school start date no earlier than August 15 for students³.

In Florida, North Carolina, and South Carolina the legislators have already mandated late and uniform school start dates. The law as ratified in South Carolina requires that all public schools to begin no earlier than the third Monday in August, while maintaining the 180 days of classroom instruction and 10 teacher workdays/staff development days per calendar year. Legislators in North Carolina enacted the 2004 calendar law, which required most schools to start no earlier than August 25th and to end no later than June 10th. In 60 of 67 Florida school districts, schools started on Aug. 18 of this academic year. The uniform start was as a result of a state law passed in 2006. The law required public schools to not open any earlier than 14 days before Labor Day⁴.

We believe 11 states have enacted laws regarding start dates. The list of the states and a brief description of their respective start date laws is presented in Table 1.

Table 1: State School Start Date Laws⁵

South Carolina	Law passed prohibits school from beginning before the 3rd week in August. (Law passed 2006)
Florida	Academic instruction may not begin earlier than 14 days prior to Labor Day. (Law passed 2006)
Iowa	Law states: "... each regularly established elementary and secondary school shall begin no sooner than a day during the calendar week in which the first day of September falls but no later than the first Monday in December.
West Virginia	The law states "the instructional term shall commence no earlier than August 26 and shall terminate no later than June 28."
Minnesota	Academic instruction may start any time after Labor Day.
Wisconsin	Academic instruction may start any time after September 1.
North Carolina	Academic instruction may start any time after September 1. Law allows waivers for earlier starts based on past bad weather days.
Michigan	Academic instruction may start any time after Labor Day.
Texas	Academic instruction may not begin until the 4th week of August. (Law passed 2006)
Virginia	Academic instruction may begin after Labor Day.
Arkansas	Law requires school start dates no earlier than August 19 and no later than August 26.

² **School year may start later**, By Laura Diamond, The Atlanta Journal-Constitution, June 18, 2008

³ <http://www.savetennesseesummers.org/legislative.html>

⁴ The Second Year of a later School Start, By Leslie Postal, Orlando Sentinel, July 21, 2008

⁵ <http://www.savetennesseesummers.org/State%20School%20Start%20Date%20Laws.pdf>

Alabama School Start Dates

A cursory examination of the school start date for 2009 academic year in Alabama shows that an overwhelming majority of schools started on 6th or 7th of the August. Indeed, 70% of all schools in Alabama started their instructional phase by August 7. By August 11 of 2008, almost 96 percent of all schools in Alabama have already started classes.

Table 2: School System Start Dates⁶

School Start Date	Number of School Systems
8/4/2008	1
8/5/2008	1
8/6/2008	40
8/7/2008	49
8/8/2008	3
8/11/2008	32
8/12/2008	1
8/13/2008	1
8/14/2008	3

As a method of comparison, we attempted to determine how school calendars have changed over the last few years. Ideally, a comparison between 2008-2009 calendar and a 1980 or 1970 calendar would have been a good start. We could not, however, find a central source that contained such information for all (or even a majority) of school systems; nonetheless, we were able to find school calendar information on only one school system for the time period from 1997-98 to 2007-2008 academic years. We removed the identifying characteristics from the data and presented the two calendars in Figure 1.

The left panel in Figure 1 represents the 07-08 school calendar and the right panel highlights the 96-97 calendar. The school system in 1996 started on August 20th and ended on May 28th. A total of 175 instruction days was conducted in that year. As a method of contrast, in 2007-2008 academic year the school system started on August 6th and ended on May 22nd. In that year a total of 180 instruction days (new Alabama school days law) were conducted. The break down between the two semesters shows that the length of the first semester was extended from 83 days to 89 days (+6 instruction days) and the length of the second term was shortened from 92 days to 91 days (-1 instruction days). Five additional instruction days and two days of student holidays (fall holiday) was added to the 2007 school calendar. One day of teacher conferences was switched from October (in 1997) to December 21st in 2007 (this is after during the student winter holidays).

This sample calendar highlights the existing school calendar practices and preferences. Alternatively, the entire additional 6 days could have been added toward the end of the calendar (closing the school on May 28 2007) and to have started the school calendar on the 15th 2006. Instead, the entire additional instructional days were front loaded to the

⁶ Alabama State Department of Education

school calendar. This approach, most likely, is rooted in the philosophy that more teaching days prior to standardize achievement can produce better system-wide student achievement results. This issue, as stated earlier, is emerging to be a significant issue for many school systems in the U.S.

Figure 1: School Calendar Comparison for one Sample School System

6-Aug-07	Teacher Workday (Monday)	18-Aug-97	Teacher Institute
7-Aug-07	Teacher In-Service (Tuesday)	19-Aug-97	Teacher Workday
8-Aug-07	Teacher Institute (Wednesday)		graders
9-Aug-07	First Day For Students (Thursday)		& 8th students
August 9 - 10, 2007	Kindergarten Students Released at Noon		Middle School Orientation for 6th grade
3-Sep-07	Labor Day - Schools Closed	20-Aug-97	First Term Begins
October 8 - 9, 2007	Fall Holidays - Schools Closed	1-Sep-97	Labor Day Holiday
23-Oct-07	Parenting Day - Students Dismissed At Noon	23-Oct-97	Teacher Conferences
12-Nov-07	Veteran's Day - Schools Closed	11-Nov-97	Veterans' Day Holiday
November 21 - 23, 2007	Thanksgiving Holidays - Schools Closed	November 26-28, 1997	Thanksgiving Holidays
20-Dec-07	First Term Ends (89 days)	19-Dec-97	First Term Ends (83 days)
December 21, 2007 **	Teacher Workday - Students Do Not Attend	December 22 - January 2, 1998	Winter Holidays
December 21, 2007 - January 3, 2008	Winter Holidays - Schools Closed		
3-Jan-08	Teacher Workday - Students Do Not Attend		
4-Jan-08	Teacher In-Service - Students Do Not Attend	5-Jan-98	Teacher Workday
7-Jan-08	Second Term Begins (Monday)	6-Jan-98	Second Term Begins
	Martin Luther King, Jr. Holiday - Schools Closed	19-Jan-98	Martin Luther King Jr. Holiday
21-Jan-08		16-Feb-98	Teacher In-Service Day
18-Feb-08	President's Day - Schools Closed		Elementary Early Release for Teacher Conferences
	Elementary Early Release For Teacher Conferences	26-Mar-98	
6-Mar-08		March 30 - April 3, 1998	Spring Holidays
March 17 - 21, 2008	Spring Holidays - Schools Closed	10-Apr-98	Spring Holiday**
		24-Apr-98	Spring Holiday**
25-Apr-08	Spring Holiday - Schools Closed	8-May-98	Spring Holiday**
		25-May-98	Memorial Day Holiday
22-May-08	Last Day For Students (91 days)	28-May-98	Last Day for Students (92 days)
22-May-08	High School Graduation	29-May-98	Graduation
23-May-08	Teacher Workday (Friday)	29-May-98	Last Day for Teachers
23-May-08	Graduation (Friday)		

Cost to the Alabama's Economy

There are four broad categories of economic costs and losses that can be attributed to early school start dates. They are as follows:

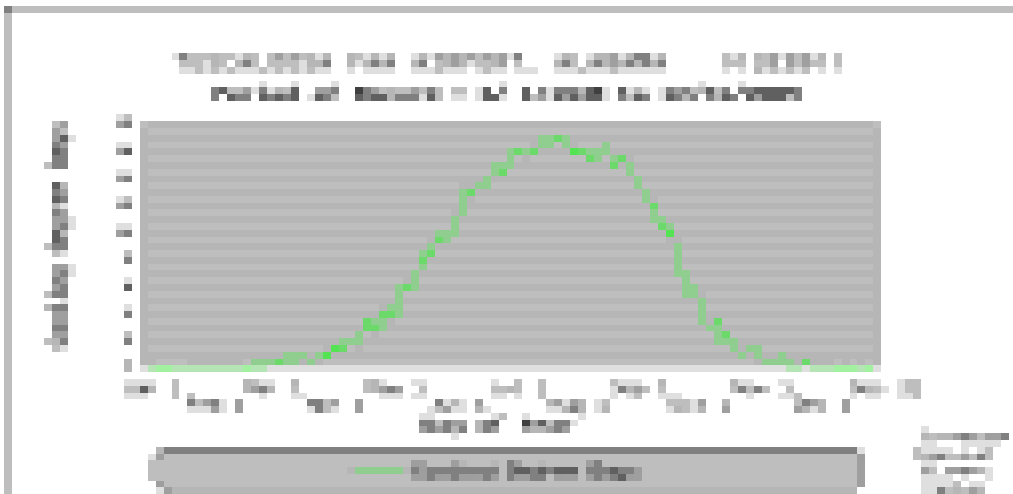
1. Earning foregone (potential earning loss to teachers, auxiliary staff, and students)
2. Higher school operation (wages) cost
3. Utility cost
4. Tourism loss

The concept of earning foregone is not a conceptual notion but a very straight forward one. One effect of compressed summer season is to reduce seasonal employment opportunity for students, teachers, and staff. Income is forgone when these individuals return to school early. For this cohort, the employment loss equates to a loss in personal income.

In regards to higher school operation cost, a sizeable number of school employees are classified as paraprofessional, support, and auxiliary staff. This group of employees works less than a typical year-round schedule. To the extent that the school year can be compressed, these employees will work less days, and payroll savings can be realized.

The link between higher utility costs and early school start date is established through cooling degree days (CDD) concept. As is evidenced in Figure2, the number of CDD, where more utility is required to control the climate for buildings and facilities is 4 times higher during the month of August than they are for month of May. By starting the school in early August and ending it in middle of May, schools effectively incur a higher utility cost that otherwise necessary.

Figure 2: Cooling Degree Days in Tuscaloosa, Alabama⁷



⁷ Source: <http://cirrus.dnr.state.sc.us/cgi-bin/sercc/cliFC2rec.pl?a18380>

Arguably, the most noticeable negative impact of early school start date has been its adverse impact on the summer travel and its impact on the tourism industry. By redrawing the summer holidays from June-August to May-July summer beach season has been compressed by one third. It is generally believed that a longer (and a hotter season) would improve the tourism sector.

Earning Foregone

As stated earlier, earning forgone captures the loss of income due to shortened summer employment season. In order to estimate this cost, we assume that half of the state’s 88,800 high school juniors and seniors could hold a 30 hour per week job at a rate of \$7.25 per hour. We also assume that one-third of teachers in the schools and auxiliary and support staff also hold part-time jobs (30 hours per week). For this cohort, we assume a prevailing wage rate of \$10.00 for teachers and \$7.25 for the auxiliary staff.

These assumptions yield a total estimated earning forgone of \$3.4 million per day for every day that the summer season is shortened. The results are presented in Table 3.

Table 3: Earning Foregone

Percent of Cohort that hold Part Time Jobs	Number of Hours	Pay Rate	Total Sample (2000-2001)	Lost Earning Per Day
Students (Jr & SR)	50%	\$7.25	88,849	\$1,932,466
Teachers	33%	\$10	5,1768	\$1,025,006
Auxiliary and support Staff	33%	\$7.25	3,270	\$466,109
Total				\$3,423,581

The estimates in Table 3 suggests that extending the summer by 10 more working days can potentially generate an additional \$34 million dollar for the Alabama’s economy. It is important to note that this estimate does not include the economic multiplier process. If that is taken into consideration this estimate can swell to approximately \$47 million per year.

Higher school operation (wages) cost

This cost elucidates the payroll savings from those employees who work less than year-round. These savings can be realized from compressing the school year and avoiding the payroll expense. We estimate that the non-professional employees’ payroll savings can amount to approximately \$2.6 million per day for each day spent not working associated with compressed school year.

Table 4: School Payroll Saving

Paraprofessional, Support, and Auxiliary Staff	34,663
Cohort Who Works Less Than 240 Hours a Year	32,470
Earning Per Day Per Staff	\$80.00
Payroll Saving Per Day	\$ 2,597,610

Utility cost

In any given year, June, July, August and September are the hottest months in Alabama. Any of these months can be the month with the peak electricity use of the year. Typically, May has never been the hottest month during this time, but the last two weeks of June are. Logically, a shift in school start dates from the last three weeks of August to the end of May and early June should result in lower electricity expenditures for Alabama school systems. In order to illustrate this point we have highlighted the average temperature for each month along with number of cooling degree days (CDD) for city of Huntsville.

Table 5: Climate Activity, Monthly Averages fro Huntsville

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Average High (°F)	48.2	53.5	62.8	72.5	79.3	86.6	89.0	88.8	82.8	73.0	62.4	52.6
Cooling Degree Days	0	0	11	32	147	324	434	412	229	56	6	0

As exhibited in Table 5, the temperature difference between August and May on average is about 10 degrees. More importantly, there are almost three times as many as CDD in August as there are in May.

We used the CDD and HDD data as our starting point to analyze the impact of shifting the school calendar from early August to early September. To do this, we assigned a weight of 1 to every month with exception of June and July of each year. These two months were assigned a weight of 0.75 (signifying the fact that less electricity will be used when schools are not in full session). The number of heating and cooling degree days was multiplied by their respective month-by-month weight. This scenario represented the current demand on the utility grid from the existing school calendar.

Next, we changed the monthly weights to account for shifting the school calendar. In this analysis, we assigned a weight of 1 to every month with exception of June, July, and August of each year. These three months were assigned a weight of 0.75. The number of HDDs and CDD was subsequently multiplied by their respective month-by-month weight. This scenario represented the current demand on the utility grid from the later school start date.

Our analysis shows that such a simple exercise can lead to lowering of the utility (electricity) demand by the school systems by approximately 6%. Next, we assumed that 50% of the total operation and maintenance expenses of the school systems are utility expense related, so we applied the 6% utility saving estimate to our estimated utility expenditures by all schools in Alabama. This rendered an electricity savings of approximately \$14 million for the school systems in Alabama.

Tourism loss

A compressed summer will, most likely, impact the tourism industry the hardest. Like many Southern states, tourism in Alabama peaks during the summer months. Shortening these peak summer months will adversely impact the tourism industry revenue and will lead to lower revenue and higher tourism related price. Because the tourism industry thrives on the peak season to recover all of their capital expenditures, a shortened peak summer season means lower tourism expenditure for the industry and higher tourism (attraction) prices for the consumer. This could lead to a vicious circle because industry will raise the price in order to recover the lost revenues. Furthermore, these higher prices will continuously dampen the demand for tourism products, which could lead to even further decreased revenues for the industry.

In order to compute the potential impact of the early school start date on the tourism industry, we began the analysis by incorporating the monthly state lodging tax collections. In our analysis, we omitted the post and pre-hurricane Ivan data, which removed the 2004 and 2005 data from our data sample.

Next, we replaced the actual August tax collections with an adjusted figure that was made to be equal to 75% of the July's collection throughout our sample. This exercise was repeated for the entire sample data. To complete the analysis, we calculated the tourism revenues with the original data and the adjusted database. The difference between the two estimates amounted to a total of \$260 million lost revenues for the tourism industry.

The Total Economic Cost of Early School Start Date

The total economic cost of shortened summer on State of Alabama is presented in Table 6. It is our estimate that on a per day basis the State stands to lose approximately \$26 million. This economic loss is directly attributed to early school start dates and compressed summer season.

Table 6: Total Economic Loss of Compressed Summer

Employment Earning Loss	Per Day	Two Weeks
Students	\$ 1,932,466	\$ 19,324,658
Teachers	\$ 1,025,006	\$ 10,250,064
Staff	\$ 466,109	\$ 4,661,086
School Operation Cost		
Auxiliary and Support Staff Payroll	\$ 2,597,610	\$ 25,976,096
Utility Cost	\$ 1,412,498	\$ 14,124,983
Tourism Loss	\$ 18,498,371	\$ 258,977,189
Total	\$ 25,932,059	\$ 333,314,076

Extending our analysis, we have estimated that if the schools could re-arrange 10 days of their academic year, the projected economic gain of such action can lead to approximately \$300 million of additional revenues for all constituents in the state of Alabama.