About the WP (Working Paper) series on the Math Stagnation Nations (& what MMU1 can do about this quickly)

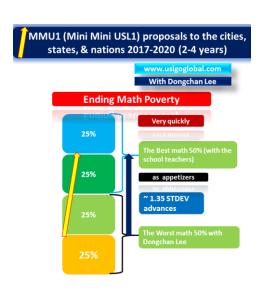
By Dongchan Lee

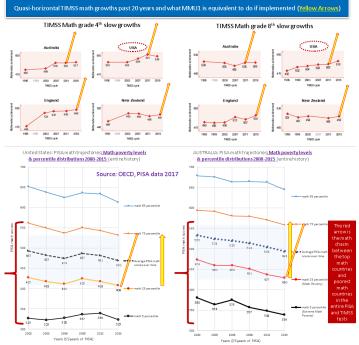
This paper is a part of the WP (Working Paper) series by Dongchan Lee about the math stagnations in the OECD, all the developed English-speaking or the majority of the Latin American countries.

<u>In the WP series on the math stagnation nation series, for the USA</u>, we observed and analyzed the following in part 1-5 in the USA series:

- 1) the math stagnations of the USA internationally (from the PISA 2000-2015, TIMSS 1995-2015);
- 2) the math stagnations of the 50 USA states;
- 3) the math stagnations of at least 85-90% of the big cities (or school districts) that have participated in the TUDA program of NAEP;
- 4) the math stagnations impacted by the Common Core math or not;
- 5) Key summaries of this series.

NOTE: throughout the math stagnation nations series, we use the yellow arrows for the MMU1 impacts.





To boost the math poverty (math poorest 25 percentile) to the math prosperity (math richest 25 percentile)

Math saturations of all English-speaking countries

### WP series: Mathematics Stagnation Nation series: for the USA (Part 4)

Math Education stagnations in the USA played more roles than the Common Core math standards impacts for the stagnations on the NAEP 2015, but the math dipping (especially the grade 8) were most likely were due to the Common Core math

By Dongchan Lee (Date: February 5, 2017, Version 1)

#### **Abstract**

This paper is an extension of the previous paper by the author on the theme of the math stagnations in almost all developed (OECD) nations internationally, for all developed English-speaking and most of the Latin American countries. The author has covered this theme for the USA math stagnations in the international math assessments, national NAEP's national math growth stagnations, most of the states' math stagnations, and at least 90-95% of the large districts' (or cities') math stagnations over the past 5-10-15-20 years. In this paper, the author observes and demonstrates the following: 1) the longer the states had stayed with the Common Core math standards, the math grade 4 average and 25 percentile had declined more than the USA states that had never participated in the Common Core math or those that had opted out by the end of 2014 or so before the NAEP 2015 math dipping happened for both the grade 4 and 8; 2) The similar pattern was also observed for the grade 4, however, with much less effect; 3) Although the negative impacts of the Common Core math on the NAEP 2015 was not negligible for the grade, the dips for the grade 8 was more likely caused by the Common Core more so than for the grade 4<sup>th</sup> math. Regardless, the math stagnations are persistent with or without the Common Core math's overall negative effects for math for both grades will be as such. There were math dips in the grade 8 math for the states that had been out of the Common Core math, which means that the math stagnations in the USA may enter a worse phase in 2017 on even if the negative effect of the Common Core math is overcome.

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**Key words:** Math stagnations, math crisis, USL, MMU1, math education innovation, Education reforms, math crisis in the United States, Common Core Math



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**Critical Note:** Throughout in this observational report with timelines from the NAEP math scores, all the data were gathered from NAEP's The National Report Card data. As such, all the data 1990-1996 had "Accommodations Not Permitted" while the data from 2000 on, I used the data with the Accommodations Permitted.

#### Introduction

The 2015 years were a tricky or catastrophic year for the math stagnations or collapses to most of the developed countries, be it English-speaking countries or the top tier math countries from the Eastern Asian countries. For the USA, the PISA 2015 math declined further and the TIMSS 2015 math grade 4 declined. For the NAEP 2015 math, it dropped for both of the grades 4 and 8 for the first time since more than 20 years. There have been various wild controversies to find out what had causes this and many have speculated that the Common Core Math standards had caused this. Although the Common Core math started around 2011, many states started joining around 2012 or 2013 and more than 10 pulled out of it by 2013 and 2014. This paper focused on which may have caused the math average declines more: simply that natural math stagnations that seemed to have

happened all across most of the developed countries or in the case of the USA, was it the Common Core math?

# Part 1. The USA states that pulled out of the Common Core math before the NAEP math 2015

Section 1. The USA states that had opted out of the Common Core math standards by the end of 2014 so that they had less or minimal impacts on their performance of math in NAEP 2015.

No	13 States effectively out of the CCSS math by 2015 NAEP math	Adoption stance	Notes (from https://en.wikipedia.org/wiki/Common_Core_State_Standards_Initiative )	Author's notes for the CCSS math relevance for NAEP math 2015
1	Alaska	Non-member		
2	Florida	Non-Member	Dropped in favor of "Florida State Standards", which are based on Common Core standards.(83)	
3	Nebraska	Non-member	[57]	
4	Texas	Non-member		
5	Virginia	Non-member	[97]	
6	Minnesota	Partially Adopted	English standards only, math standards rejected.	
7	Indiana	Repealed	Implementation paused by law for one year in May 2013 and under public review. **I formally withdrew in March 2014, but retained many of the standards. **I	basically out of CCSS math in 2013-2014
8	Oklahoma	Repealed	Legislation restoring state standards signed June 5, 2014,[94]	June, 2014
9	Alabama	Formally adopted	State school board voted to rescind the agreement that commits the state to adoption.  However, state standards are still aligned with Common Core State Standards (81)	November, 2013
10	Louisiana	Formally adopted	Governor signed executive order to withdraw state from PARCC assessment program. (June 2014) [80]	June, 2014
11	Massachusetts	Formally adopted	Delayed Common Core testing for two years in November 2013.45 Ballot question on future of standards in 2016 has been ruled against by Massachusetts Supreme Judicial	delayed CCSS for 2 years in Novebmer, 2013
12	New York	Formally adopted	Full implementation of assessment delayed until 2022.[92]	February, 2014
13	Pennsylvania	Formally adopted	Paused implementation in May 2013.[95]	May, 2013
	Mississippi	Formally adopted	Withdrew from PARCC testing on January 16, 2015.[90]	January, 2015
	South Carolina	Repealed	A bill to repeal the Standards beginning in the 2015-2016 school year was officially signed by Governor Nikki Haley in June 2014 after deliberation in the state legislature."	
	Arizona	Formally adopted	The Arizona State Board of Education voted to reject Common Core on October 26, 2015.  The vote was 6–2 in favor of repeal [82]	October, 2015

Source: based on the Wikipedia article on CCSS (the author adjusted the states to simplify the appearances here.) <a href="https://en.wikipedia.org/wiki/Common Core State Standards Initiative">https://en.wikipedia.org/wiki/Common Core State Standards Initiative</a>, Lee found out about these 13 states that effectively hadn't really participated on CCSS for math at least by the end of 2014 as the NAEP math took place.

Thus, out of the 51 jurisdictions of the USA (50 states and DC), 13 were not really involved with CCSS math assessments till the end of 2014. So these 13 states' math stagnations or declines in NAEP 2015 math should have nothing to do with the Common Core impacting the math scores.

#### For PARCC

PARCC test participations by states. Source: taken from Wikipedia article.

	States from the PARCC of the	Current Participation Status		References [edit]
No	ccss	ouroner and parent ordina	dropped yr before NAEP 2015 math	<ol> <li>*** a c "About PARCC" P. Partnership for Assessment of Readiness for College and Careers. Retrieved March 1, 2015.</li> </ol>
1	Alabama	dropped February, 2013[12]	2013	<ol> <li>A * * * Powerpoint Infographic &amp; Partnership for Assessment of Readiness for College and Careers Web site (October 11, 2011).</li> </ol>
-	Kentucky	dropped January, 2014[19]	2014	<ol> <li>A Hain, Bonnie (2011) "PARCC Consortium - A Five Component Assessment Model." Reading Today, 29(1): 24. Academic Search Premier. Web. Available on-line at: Reading Today.</li> </ol>
-	Oklahoma			4. ^ [1] @ parcc selects open source platform for nonsummative assessments  5. ^ Web site of Governor of Florida: Florida withdraws from PARCC @
		dropped July 2013[26]	2013	<ol> <li>a. Wed site of Governor of Frionda: Frionda witindraws from PARCCEP</li> <li>b. a. Cory Tumer and Robert Siegel (July 25, 2013) "Common Core Could Be Disrupted As States Drop Out Of PARCC", NPR (National Public Radio), Available on-line at: NP</li> </ol>
4	Georgia	dropped July, 2013[16]	2013	7. A Strauss, Valerie (January 16, 2015). "Mississippi withdrawing from Common Core PARCC consortium" & Washington Post. Retrieved March 1, 2015.
5	North Dakota	dropped July, 2013[24]	2013	8. * http://www.cleveland.com/metrofindex.ssf/2015/06/ohio_dumps_the_parcc_common_core_tests_after_woeful_first_year.htmld*
6	Indiana	dropped June 2014[18]	2014	
-	Pennsylvania	dropped June, 2013[27]		10. A "Bureau of Indian Education Strateoic Plan" IA PDPs.
	_		2013	11. * http://www.cricagotribune.com/news/iocal/breaking/ct-parcc-test-migh-school-met-2016b0/11-story.htmls*
8	Tennessee	dropped June, 2014[28]	2014	
9	Arizona	dropped May, 2014[13]	2014	<ol> <li>A "Arizona withdraws from PARCC testing group" B. The Arizona Republic, May 30, 2014. Retrieved December 7, 2015.</li> </ol>
10	Florida	dropped September 2013[15]	2013	14. A "UPDATED: State Board of Education votes to change school test from PARCC to ACT" Arkansas Times, July 9, 2015. Retrieved December 7, 2015.
-				15. A "Gov. Rick Scott calls for Florida to drop out of PARCC" 9. Tampa Bay Times, September 23, 2013. Retrieved December 7, 2015.  16. A "Georgia The Latest State To Back Out Of K-12 PARCC Tests" 9. http://ncx.org/9. Updated July 25, 2013. Retrieved December 7, 2015.
1	Arkansas	dropped July, 2015[14]	2015	17. A "Answer Sheet - Two more states pull out of Common Core" 9. Washington Post, June 5, 2014. Retrieved December 7, 2015.
2	Mississippi	dropped January, 2015[23]	2015	
3	Ohio	dropped June 2015[25]	2015	19. * "Kentucky Withdraws From PARCC Testing Consortium" @. Education Week, January 31, 2014. Retrieved December 7, 2015.
				<ol> <li>*Louisiana To Try Blend of PARCC and State-Developed Assessments - THE Journal* # THE Journal Retrieved 2016-07-05.</li> </ol>
	District of	current user		21. A "PARCC Is Down to DC Plus Ten States, and Louisiana Isn't One of Them" #. Hulf Post Education, December 8, 2014. Retrieved December 7, 2015.
1	Columbia	our on acci		<ol> <li>*Next-Generation MCAS - Massachusetts Comprehensive Assessment System* #. www.doe.mass.edu. Retrieved 2016-07-05.</li> </ol>
2	Maryland	current user		<ol> <li>"State withdraws from testing consortium" 9. djownal.com, January 17, 2015. Retrieved December 7, 2015.</li> </ol>
3	New Jersey	current user		24. A "North Dakota Drops Out of PARCC, Commits to Smarter Balanced" & Education Week, May 17, 2013. Retrieved December 7, 2015.
4	New Mexico	current user		<ol> <li>A "Ohio dumps the PARCC Common Core tests after woeful first year" d. The Plain Dealer, June 30, 2015. Retrieved December 7, 2015.</li> <li>A "Oklahoma Pulls Out of PARCC" d. "Truth In American Education." July 2013. Retrieved February 6, 2016.</li> </ol>
5	Illinois	current user grades 3-8[17]		27. A "A July 21, 2014, Update on Common Core, PARCC, and Smarter Balanced" & deutsch29 Blog, July 21, 2014. Retrieved December 7, 2015.
6	Colorado	current user grades 3-9		28. * "Who will develop Tennessee's next standardized test? Here are some contenders" . Chalkbeat Tennessee, September 17, 2014. Retrieved December 7, 2015.
	Rhode Island	current user grades 3-9		29. **** "Elementary and Secondary Education Act" 9, Office of Superintendent of Public Instruction. OSPI, n.d. Web (October 11, 2011).  30. * "California Department of Education." Adequate Yearly Progress. N.p., n.d. Web. 11 Oct 2011. Available on-line at: California Dept. of Education 9
	Louisiana	uses hybrid PARCC/state test		31. ^ Au, Wayne (June 2007) "High-Stakes Testing and Curricular Control: A Qualitative Metasynthesis", Educational Researcher, 36(5): 258–267. Available on-line at: Sage P
				32. Adams, Marisa; Lyons, Julie (2014). PARCC Guidebook: Success Strategies for Teachers. Lumos Learning. pp. 3-4. ISBN 1940484563.
9	Massachusetts	current user[22]	I A	

Source: Wikipeida on PARCC. <a href="https://en.wikipedia.org/wiki/PARCC">https://en.wikipedia.org/wiki/PARCC</a> (the author adjusted the states to simplify the appearances here.)

According to the PARCC article from the Wikipedia, there seem to be 10 states (in grey color) that had been out of the Common Core math by 2013-2014.

So, the 10 states that dropped out of PARCC effectively 1-2 years before 2015 NAEP math declines:

## Section 2. Merged list of the 6-13-18 USA states that had spent much less time on the Common Core math standards before the NAEP 2015 math took place

When I combined these 2 tables from Wikipedia data about CCSS, I got this merged table.

13 States effectively out of the CCSS math by 2015 NAEP math	Adoption stanc	Notes (from https://en.wikipedia.org/wiki/Common_Core_State_Standards_Initiative )	Author's notes for the CCSS math relevance for NAEP math 2015	No	States from the PARCC of the CCSS	Current Participation Status	dropped yr before NAEP 2015 ma
Alaska	Non-member						
Florida	Non-Member	Dropped in favor of "Florida State Standards", which are based on Common Core, standards, 1831			Florida	dropped September	2013
Nebraska	Non-member	1911					
4 Texas	Non-member						
5 Virginia	Non-member	1971					
Minnesota	Partially Adopted	English standards only, math standards rejected.					
7 Indiana	Repealed	Implementation paused by law for one year in May 2013 and under public review: "I formally withdrew in March 2014, but retained many of the standards."	basically out of CCSS math in 2013-2014	Т	Indiana	dropped June 2014[18]	2014
Oklahoma	Repealed	Legislation restoring state standards signed June 5, 2014, 1941	June, 2014		Oklahoma	dropped July 2013[26]	2013
9 Alabama	Formally adopted	State school board voted to rescind the agreement that commits the state to adoption.  However, state standards are still aligned with Common Core State Standards (81)	November, 2013		Alabama	dropped February.	2013
0 Louisiana	Formally adopted	Governor signed executive order to withdraw state from PARCC assessment program.	June, 2014				
Massachusetts	Formally adopted	Delayed Common Core testing for two years in November 2013. ™ Ballot question on future of standards in 2016 has been ruled against by Massachusetts Supreme Judicial	delayed CCSS for 2 years in Novebmer, 2013				
New York	Formally adopted	Full implementation of assessment delayed until 2022.1921	February, 2014				
Pennsylvania	Formally adopted	Paused implementation in May 2013.[95]	May, 2013		Pennsylvania	dropped June. 2013[27]	2013
4 Arizona	Formally adopted	The Arizona State Board of Education voted to reject Common Core on October 26, 2015.	October, 2015	Ι.	Arizona	dropped May.	2014
Georgia	Formally adopted	The vote was 6-2 in favor of repeal, [82]	October, 2015	2	Georgia	2014[13] dropped July. 2013[16]	2013
Kentucky	Formally adopted			3	Kentuoky	<u>dropped</u>	2013
7 Tennessee	Under review	[79]		4	Tennessee	January. dropped June. 2014[28]	2014
North Dakota	Formally adopted			5	North Dakota	dropped July. 2013[24]	2013
							2010
Mississippi	Formally adopted	Withdrew from PARCC testing on January 16, 2015, [90]	January, 2015		Mississippi	dropped January. 2015[23]	2015
2 Ohio	Formally adopted	There is currently legislation in progress to repeal Common Core from the state.[93]			<del>Ohio</del>	dropped June 2015(25)	2015
3 Arkansas	Formally adopted				Arkansas	dropped July. 2015[14]	2015
South Carolina	Repealed	A bill to repeal the Standards beginning in the 2015-2016 school year was officially signed by Governor Mikki Halev in June 2014 after deliberation in the state legislature. 1911	repeals starting 2015-2016				

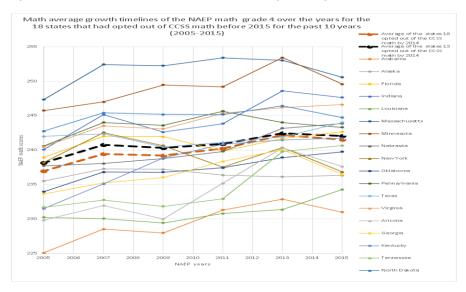
Source: the author merged the data together from the Wikipedia article on Common Core Standards Initiative and PARCC, focusing only on the CCSS implementation substantially before the NAEP 2015 tests for math.

In summary, according to this merged table, there were 6 states that had never been with the Common Core Math, other 7 states that had been out of it by 2013-2014, and another 5 states that dropped out according to the list from the PARCC (Wikipedia).

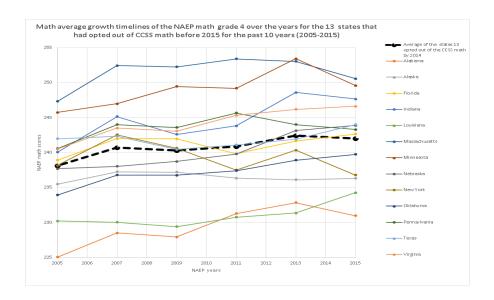
## Part 2. Math stagnations of the grade 4

Section 3. NAEP math scores of the grade 4 for the states that had opted out of the Common Core math standards before the NAEP 2015 math took place.

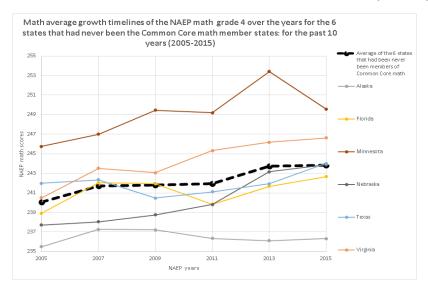
Math average growth timelines of the NAEP math grade 4 over the years for the 18 states that had opted out of CCSS math before 2015 for the past 10 years (2005-2015)



Math average growth timelines of the NAEP math grade 4 over the years for the 13 states that had opted out of CCSS math before 2015 for the past 10 years (2005-2015)

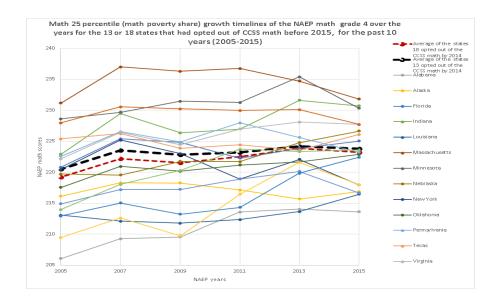


Math average growth timelines of the NAEP math grade 4 over the years for the 6 states that had never been the Common Core math member states: for the past 10 years (2005-2015)

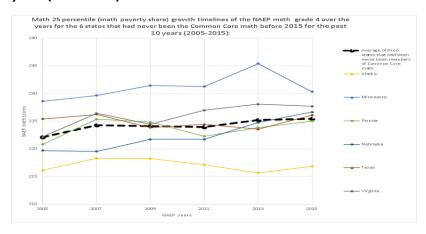


#### 25 percentile of math growth trajectories

Math 25 percentile (math poverty share) growth timelines of the NAEP math grade 4 over the years for the 13 or 18 states that had opted out of CCSS math before 2015, for the past 10 years (2005-2015)

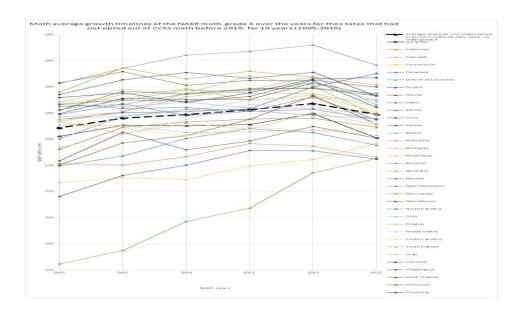


Math 25 percentile (math poverty share) growth timelines of the NAEP math grade 4 over the years for the 6 states that had never been the Common Core math before 2015 for the past 10 years (2005-2015)

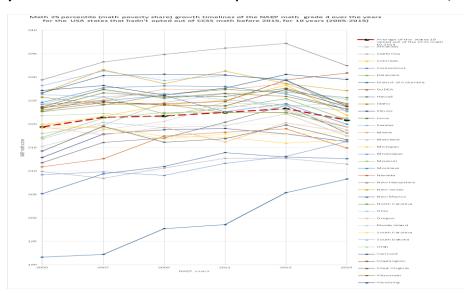


Section 4. For the USA states that <u>had not opted out of</u> the Common Core math grade 4 by the end of 2014

Math average growth timelines of the NAEP math grade 4 over the years for these states that had not opted out of CCSS math before 2015: for 10 years (2005-2015)

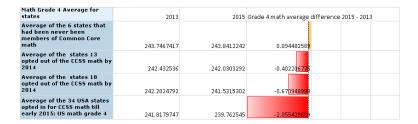


## Math 25 percentile (math poverty share) growth timelines of the NAEP math grade 4 over the years for the USA states that hadn't opted out of CCSS math before 2015, for 10 years (2005-2015)



Section 5. An undeniable pattern: the more and longer the states stayed with the Common Core math standards, their average math score declined more for the grade 4 math in NAEP 2015.

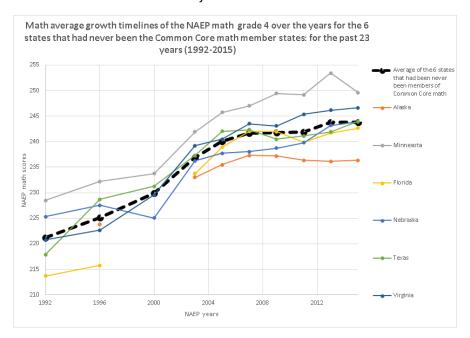
As we can see below in the table, the difference between the states that had opted out by the end of 2014 or never embraced the Common Core Math before the NAEP 2015 math is about 0.5-2 points in NAEP math grade 4, which are roughly 1.6-6.5% of a Standard Deviation differences. 3-7% of Standard Deviation is not a negligible effects although we can dismiss a few 5 of a standard deviations. So for the grade 4 math, the Common Core Math apparently impacted the math education negatively.



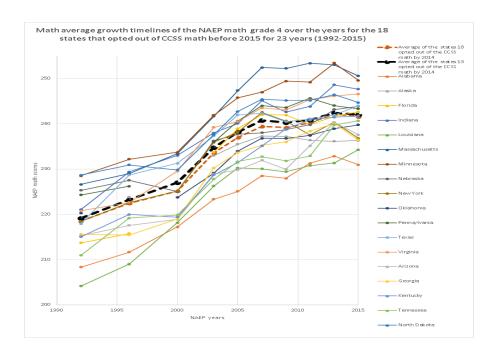
Section 6. Regardless of the impacts of the Common Core math on NAEP 2015 math's dipping, the undeniable fact is that the math stagnations nationwide in the USA over the past a decade or so already.

For the states that had opted out of the Common Core Math by the end of 2014, sufficiently before the NAEP 2015 math was administered, the black or red dotted lines are their average scores and they have reached their math saturations, but not the declines.

For the 6 states that had never joined the Common Core math standards:

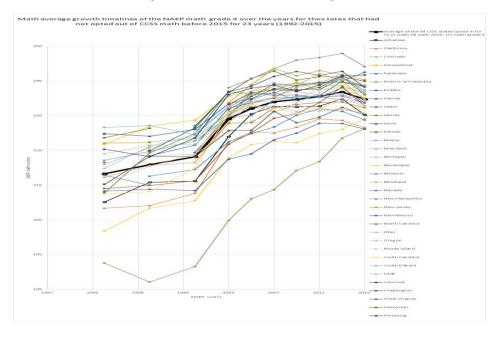


For the 13-18 states that had never joined or had joined the Common Core math standards but had opted out earlier before the NAEP math 2015:

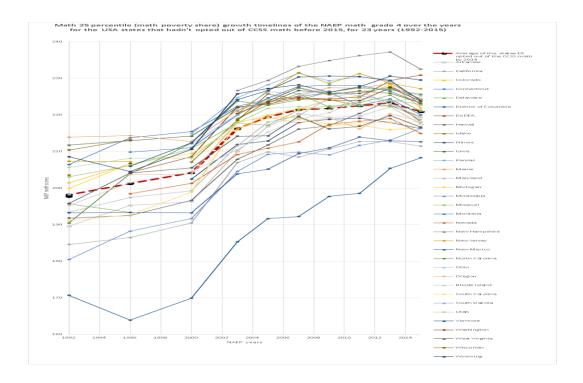


The states that had stayed with the Common Core math till at least nearly before the NAEP 2015:

For the states that had stayed with the Common Core math at least by the end of 2014 mostly declined in math average in NAEP math 2015 for the grade 4.



Their 25 percentile growth trajectories:

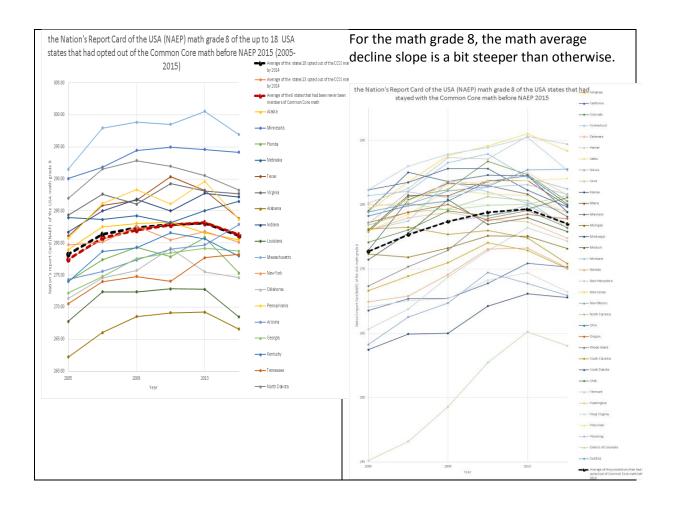


#### Conclusion for the math grade 4:

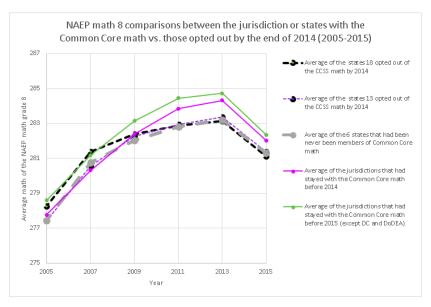
Regardless of the durations that the states stayed with the Common Core math, the inevitable math growth stagnations kicked in by around 2005-2007 for most of these USA states for the grade 4. The only real difference is that the states that had stayed with the Common Core math till around the time of the NAEP math 2015 had a dip stronger.

Part 3. Math stagnations of the grade 8

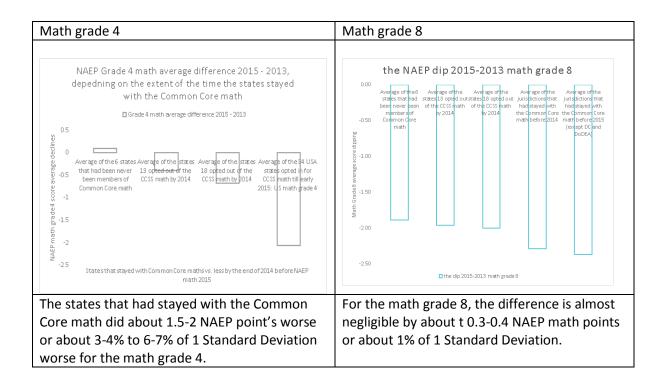
The USA states that had pulled out of the	USA states that had stayed with the Common
Common Core Math by the end of 2014 or	Core Math by the end of 2014 or later
earlier	



The overall comparisons of the states out of the Common Core Math vs. those stayed with it till at least early 2015 NAEP time for the math grade 8.



NAEP math grade 8 score dip 2013-2015	2013.00	2015.00 the	dip 2015-2013 math grade 8
Average of the 6 states that had been never been members of Common Core math	283.19	281.30	-1.88
Average of the states 13 opted out of the CCSS math by 2014	283.35	281.39	-1.96
Average of the states 18 opted out of the CCSS math by 2014	283.13	281.13	-2.00
Average of the jurisdictions that had stayed with the Common Core math before 2014	284.31	282.02	-2.29
Average of the jurisdictions that had stayed with the Common Core math before 2015 (except DC and DoDEA)	284.72	282.35	-2.37



#### Conclusion

The interesting patterns we saw here for the grade 4 math scores are the following:

- 1) For the grade 4, it seems that the Common Core Math have caused the math score decline in NAEP math for the first time since at least 20 years because the decline was none or negligible for the 6-13-18 states that had not in it or pulled out of it.
- 2) For the grade 8, the differences are much smaller than for the grade 8. Those that had stayed with the Common Core till at least around early 2015, however, did slightly worse than the states than those that had been out of it by then.
- 3) Regardless, the math stagnations had taken place in either cases as we can clearly see from the math stagnations starting around 2005-2007 for the grade 4; and for the grade 8, the math stagnations were starting around 2009-2011 mostly and then the sudden drops in 2015 were more likely due to the Common Core effects because as we demonstrated in our Part 3 of this series of math stagnations in the USA that there are usually about 4 years of time lag between the declines of the math stagnations of the grade 4 that may lead to the declines in the math grade 8. In 2015, the vast majority of the states suddenly dropped. So this is almost definitely caused by the Common Core math although the overall declines may have taken to various states for sure.
- 4) By 2017, the chances are that the states out of the Common Core math may continue stagnates and the who continued staying may depend on the efficiency improvements of the Common Core math implementations, but the chances are there may not be good improvements that the Common Core Math was originally promising to deliver.
- 5) There were math dips in the grade 8 math for the states that had been out of the Common Core math, which means that the math stagnations in the USA may enter a worse phase in 2017 on even if the negative effect of the Common Core math is overcome.

#### **APPENDIX**

## For the NAEP math grade 4 data

Data source: all from NAEP. The Nation's Report Card web pages.

The USA states that had opted out of the Common Core math before the 2015 NAEP math

Category	all students									
Year	1992	1996	2000	2003	2005	2007	2009	2011	2013	2015
Average of the states 18 opted out of the CCSS math by 2014	218.522386	222.4508966	225.1455881	233.6011067	236.9526027	239.4489576	239.2247426	240.2181113	242.2024792	241.5315302
Average of the states 13 opted out of the CCSS math by 2014	219.114377	223.2137345	227.0295828	234.7380595	238.1379276	240.7444463	240.3210596	240.8856639	242.432536	242.030329
Average of the 6 states that had been never been members of Common Core math	221.2395407	225.1150419	229.8993229	236.8993135	240.0637015	241.698934	241.8161853	241.9352459	243.7467417	243.841224
Alaska		223.8334546		232.9916543	235.5107055	237.2738932	237.2122843	236.359658	236.1220044	236.328417
Minnesota	228.4935963	232.1930884	233.7200903	241.9122956	245.7461911	246.9977624	249.4555342	249.1866861	253.4209611	249.57584
Florida	213.6897512	215.7635826		233.7288115	238.9306496	242.02025	241.9449094	239.826451	241.6758096	242.664320
Nebraska	225.3326475	227.5439927	225.0573925	236.2541084	237.7061785	238.0408086	238.7484634	239.8032687	243.1579291	243.863666
Texas	217.9187445	228.7129198	231.2783286	237.3059218	241.9909163	242.3397599	240.4646237	241.1017937	241.9262887	244.00247
Virginia	220.7629642	222.643213	229.5414802	239.2030891	240.4975682	243.5211298	243.0712969	245.3336181	246.1774569	246.612621
Alabama	208.3278759	211.6469735	217.2232192	223.3446426	225.0712362	228.520018	227.9626504	231.286019	232.8613325	230.977422
Indiana	221.0377425	229.3944436	233.0256168	237.9682799	240.0690988	245.144255	242.6168096	243.836876	248.5967774	247.652183
Louisiana	204.1402113	209.02067	218.1868241	226.2477291	230.2311964	230.0431193	229.4324555	230.7788693	231.3663086	234.281901
Massachusetts	226.5979178	228.9664026	233.3941162	241.6645274	247.337049	252.4303198	252.2547897	253.3964558	253.0337852	250.565777
New York	218.4455353	222.6340587	225.139222	235.9300755	238.1739767	242.5430182	240.6410988	237.5199426	240.3498169	236.79692
Oklahoma	220.3198059		223.7295381	229.0966213	233.9553288	236.8021942	236.7809856	237.4290823	238.9218775	239.760481
Pennsylvania	224.3057316	226.2120147		235.9470171	240.5729633	244.0012735	243.5878732	245.6549103	244.01262	243.312239
Arizona	215.253932	217.5759405	218.8676202	228.9113961	229.8006731	231.9369335	229.9911052	235.157597	240.3049115	237.611755
Georgia	215.5949062	215.4558617	218.9768855	230.2549768	233.6357378	235.2090171	236.0295729	238.3665421	240.0472366	236.4525193
Kentucky	215.0481577	219.988195	219.3802758	228.7263433	231.4923054	235.0879202	238.8359023	240.8307002	241.4699268	241.727761
Tennessee	210.9482274	219.176248	219.8471108	227.7550447	231.6880797	232.7537101	231.8254862	232.901117	239.774787	240.667395
North Dakota	228.6628153	230.9041832	229.8161019	237.5773868	242.7369951	245.4158542	245.1895263	245.156416	246.4247949	244.713830

#### For the 25 percentile of math grade 4 in NAEP

Category				25 percentile							
Year	1992	1992	1996	2000	2003	2005	2007	2009	2011	2013	2015
Average of the states 18 opted out of the CCSS math by 2014	198.5444713	198.5444713	203.2392948	206.3848002	215.4983339	219.2098889	222.1875558	221.5108892	222.4883328	223.8610831	223.1916943
Average of the states 13 opted out of the CCSS math by 2014	199.103834	199.103834	203.9696676	208.7301996	216.7063082	220.506	223.537692	222.8092309	223.1884604	224.1985764	223.7841153
Average of the 6 states that had been never been members of Common Core math	201.1920001	201.1920001	205.6556676	211.3189987	218.8130005	222.1366664	224.2519999	224.0920008	223.9633321	225.2198332	225.4369998
Alaska			204.7500031		213.8200012	216.1399994	218.2859985	218.2519989	217.1279999	215.6750008	216.8599998
Minnesota	209.4800018	209.4800018	214.602002	215.4259979	223.776001	228.6160004	229.6640015	231.4480011	231.2679993	235.3955009	230.3229996
Florida	193.0700012	193.0700012	194.8899994		214.6119995	220.8059998	225.3679993	224.8100006	222.2679993	223.8544991	225.0240005
Nebraska	205.7200012	205.7200012	208.8679993	204.1799988	218.8600006	219.7039978	219.5440002	221.7300018	221.7119965	224.7565002	226.6319992
Texas	198.3279968	198.3279968	208.7780029	214.4699982	220.4840027	225.3940002	226.2160004	223.8620026	224.4279968	223.5584999	226.0774994
Virginia	199.3619995	199.3619995	202.0459991	211.2	221.3259979	222.1600006	226.4339996	224.45	226.976001	228.0789986	227.7055
Alabama	186.1880005	186.1880005	190.1160034	197.373999	205.1540009	206.0759979	209.2700012	209.5519989	213.5919983	214.0359993	213.6265015
Indiana	201.7560028	201.7560028	211.4800018	215.3540009	221.1220001	222.9099976	229.4899994	226.3399994	226.95	231.5959999	230.6915009
Louisiana	183.2620026	183.2620026	189.5639954	200.1700012	207.5779999	213.0679993	212.0819977	211.7860016	212.3459991	213.643499	216.4344986
Massachusetts	207.2000031	207.2000031	210.7920013	215.7660034	223.5240021	231.1600037	236.9900024	236.2859985	236.7359985	234.698999	231.7919998
New York	197.6820007	197.6820007	203.1880005	205.9519989	217.5180023	220.4220032	225.1779999	222.9960022	218.9160004	222.048999	217.9450005
Oklahoma	202.8259979	202.8259979		207.4099976	212.6540009	217.5480011	220.923999	220.1459991	221.1579987	221.6369995	222.8544998
Pennsylvania	204.3720001	204.3720001	208.5620026		216.7539978	222.573999	226.5439972	224.8619965	227.9719971	225.6019981	223.2274994
Arizona	194.6220001	194.6220001	197.9160004	198.4079987	209.1920044	209.4439972	212.6100006	209.726004	216.4639984	221.5775017	217.9500008
Georgia	193.7440002	193.7440002	195.3820007	198.402002	210.9100006	214.8920013	217.176001	217.2300018	218.8940002	220.1120018	216.6275002
Kentucky	195.2160034	195.2160034	200.6399994	199.5920013	211.6519989	213.9700012	218.0200012	220.276001	223.7120026	223.3214989	223.568499
Tennessee	190.5040009	190.5040009	199.2920013	199.5820038	208.6460022	212.9320007	215.0280029	213.2199982	214.3060028	219.8269989	222.4024994
North Dakota	211.923999	211.923999	214.2019989	212.4860016	221.3879974	227.9619995	230.552002	230.223999	229.9640015	230.0800003	227.7084999

The USA states that had not opted out of the Common Core math before the 2015 NAEP math

Category Year         all students         all studen all	2015 239.7625 005 235.2155 245 231.5493 257 241.5636
the 34 USA states on the discriminant with t	239.7625 005 235.2155 645 231.5493 257 241.5636
states optied in for CCSS math till in for CCSS (218.3337.23 220.9625 223.183)         234.117 237.1574 239.0156 239.055 239.695 240.624 241.           Arkansas (210.206028 215.8464 216.1756 229.0066 235.5455 237.6707 237.606 239.695 241.652 239.695 241.652 239.695 241.652 24	05 235.2155 645 231.5493 57 241.5636
Arkansas         210.206028         215.8464         216.1756         229.0066         235.5455         237.6707         237.5406         237.8102         239.8           California         208.398961         299.1291         212.6941         227.455         230.367         230.0341         231.6749         234.165         233.6           Colorado         221.023429         225.8059         235.1931         239.2159         240.2059         243.1324         244.4561         246.59           Connecticut         226.79848         232.0266         233.7682         240.6152         242.1207         242.7556         244.1177         242.4134         243.4	05 235.2155 645 231.5493 57 241.5636
California         208.398961         209.1291         212.6941         227.455         233.67         230.367         230.341         231.6749         234.165         233.6           Colorado         221.023429         225.8059         235.1931         239.2159         240.2059         243.1324         244.561         246.95           Connecticut         226.79848         232.0266         233.7682         240.6152         241.2107         242.7556         244.1777         242.4134         243.4	345 231.5493 57 241.5636
Colorado         221.023429         225.8059         235.1931         239.2159         240.2059         243.1324         244.561         246.5           Connecticut         226.79848         232.0266         233.7682         240.6152         24.21207         242.7556         244.7177         242.4134         243.4	57 241.5636
Connecticut 226.79848 232.0266 233.7682 240.6152 242.1207 242.7556 244.7177 242.4134 243.4	
	03 240.1595
Delaware 217.899972 215.0251 235.8594 239.7169 241.7949 239.4906 240.3598 243.1	78 238.678
District of Columbia 192.600553 187.1347 191.5821 204.9199 211.1223 213.6989 219.2601 221.8083 228.5	73 231.3075
DoDEA 223.5179 226.5843 237.1937 238.7762 240.0846 240.2891 240.821 245.	
Hawaii 214.056666 214.9656 216.3191 226.8346 230.0969 234.2861 235.6798 238.8219 243.3	86 237.8958
Idaho 221.562534 224.4718 234.9438 241.6501 240.9028 241.0428 240.3288 240.	22 238.7996
Illinois 222.976 232.8568 233.0675 237.287 238.2857 238.8369 239.0	
Iowa 229.884078 229.1262 231.0729 238.4767 239.8808 242.8196 242.5956 242.6049 245.7	
Kansas 232.0922 241.7474 245.782 247.9237 245.3087 246.2553 246.1	
Maine 231.63884 232.207 229.5451 237.6157 240.6915 242.3706 244.4557 244.257 245.	
Maryland 217.317708 220.695 221.5365 233.0799 238.4217 240.3282 243.795 247.1066 245.1	
Michigan 219.878352 226.2581 229.3096 235.687 237.706 237.6056 236.2797 236.4022 236.8	.98 235.7289
Mississippi 201.828261 208.4341 210.5576 222.8906 226.6988 227.6124 227.2623 229.868 231.1	57 234.2431
Missouri 222.2156 224.7345 227.801 234.8364 235.0355 239.4111 240.6844 240.4948 239.5	84 238.9649
Montana 227.5162 228.4718 235.7549 240.5755 243.6188 244.4008 243.7966 243.6	89 241.287
Nevada 217.6226 219.5508 227.5136 229.8716 231.7816 235.1523 237.0319 236.2	233.827
New Hampshire         229.664564         243.1101         245.6259         248.5715         251.0718         251.7788         252.9	35 249.1506
New Jersey 227.148047 227.2402 238.7765 243.9789 248.6215 246.5299 248.0042 246.8	09 245.3832
New Mexico 213.29909 213.844 213.4764 222.518 224.0272 228.0643 230.0296 232.8404 232.7	14 231.1672
Carolina 212.88449 224.3251 229.9018 242.0401 241.2355 241.618 243.7785 244.5179 244.8	17 243.7423
Ohio 218.711935 230.0075 237.7821 242.1059 244.5327 243.6876 244.0386 245.5	98 243.5986
Oregon 223.4762 223.9138 236.3059 238.3249 236.0397 238.0323 236.9145 240.0	93 237.7467
Rhode Island 215.449248 220.4181 224.0698 230.298 233.4368 235.8779 238.7669 241.6248 241.4	67 238.0017
Carolina 212.496714 213.1944 219.8694 235.7932 238.3027 237.1074 235.6683 237.303 236.6	237.0896
South Dakota 237.2648 241.5942 241.2134 242.0978 240.9798 240.9	11 239.7231
Utah 224.042248 226.5158 226.8088 234.783 238.7974 239.405 240.3187 242.5375 242.8	07 242.5628
Vermont         224.8811         231.5636         241.9261         243.5289         246.3574         247.7672         246.6397         247.8	33 243.2504
Washington         225.0533         238.2928         241.6847         242.5422         242.2571         243.1829         246.2	83 244.9814
West Virginia 215.268928 223.3501 223.2036 230.7677 230.8433 236.3378 232.9831 234.6558 237.4	06 235.2047
Wisconsin 228.692001 231.4119 236.7554 240.5686 244.1812 243.5853 244.6919 244.7	63 243.3102
Wyoming 225.377592 223.196 228.6266 241.0857 242.9559 243.8669 242.0092 243.8744 246.5	24 246.7598

## 25 percentile

Category							25 percen				
Year	1992	1992	1996	2000	2003	2005	2007	2009	2011	2013	2015
of the states 18											
opted out	197.7278	198.1616	201.2628	204,2092	216,1924	219.403	221,4638	221.767	222.5136	223,332	220,902
of the											
Arkansas	189.542	189.542	195.256	196.302	210.006	216.894	220.38	219.288	219.678	222.2215	217.501
California	184.594	184.594	186.484	190.466	206.964	209.874	208.47	210.658	212.712	212.703	211.4
Colorado Connectic	201.448	201.448	206.622		216.088	219.882	221.68	224.068	225.102	228.327	221.91
ut	206.414	206.414	213.742	215.452	222.344	224.224	224.972	226.11	222.67	224.3675	219.989
Delaware	195.682	195.682	193.376		219.084	222.694	225.824	222.182	223.372	225.4185	220.985
District of Columbia	170,704	170,704	163.91	169.902	185.296	191.666	192.238	197.742	198.586	205.4015	208,299
DoDEA	170.704	170.704	204.252	208.572	222.154	223.02	224.588	224.372	224.852	229,4215	230.89
Hawaii	191.796	191,796	192.542	196.64	207.868	211.778	216.098	217.044	220.404	224.025	218.13
Idaho	203.528	203.528	192.542	207.114	218,498	225.742	224.226	224.24	220.404	222.513	219.393
Illinois	203.320	203.320		202.448	211.908	212.902	217.898	218.802	219.092	217.9315	216.29
Iowa	211.758	211.758	212.984	214.21	221.98	223.338	226.662	225.938	225.87	227.659	224.37
Kansas	211./50	211./30	212.904	214.21	221.98	228.228	231.352	229.306	230.41	229,5525	222.68
Maine	213.902	213.902	214.336	214.046	221.278	223.764	231.352	227.456	227.284	229.5525	224.157
	193,404	193,404	197.438	199,258	211.578	218.024	219.782	224.62	227.264	222.862	218.726
Maryland		193.404	206.67	209.51	211.578	219.142	219.782	217.396	217.186	215.9435	
Michigan	199.932	199.932	206.67	209.51	216.144	219.142	219.292	217.396	217.186	215.9435	216.64
Mississippi	180.492	180.492	188.23	191.67	204.554	209.226	209.818	209.08	211.646	213.147	216.312
Missouri	203.074	203.074	206.176	210.778	217.806	217.21	221.272	222.496	222.534	222.3875	221.316
Montana			209.858	211.03	219.986	224.664	227.762	228.15	228.042	226.4345	223.210
Nevada			198.442	201.272	209.166	210.918	212.624	217.474	218.288	219.0155	214.929
New											
Hampshir e	211.654	211.654			226.668	229.45	233.272	234.864	236.198	237.2075	232.474
New											
Jersey New	207.372	207.372	207.176		220.296	226.654	231.588	228.62	231.314	228.66	227.138
Mexico	193.254	193.254	193.326	193.232	203.884	205.172	209.41	210.996	213.934	212.996	212.643
North Carolina	190,454	190.454	203.946	212.314	223.77	222.66	224.084	226.26	227.39	226.8435	225,6515
Ohio	198,218	198.218	203.540	212.032	220.14	224.326	227.288	225.432	226.444	227.171	225.2345
Oregon	130.210	150.210	203.686	203.838	218.078	219,414	217.718	219.334	216.18	220,2895	218.26
Rhode			203.000	203.030	210.070	219.414	217.710	219.554	210.10	220.2093	210.20
Island	195.244	195.244	201.53	204.438	210.498	215.26	218.792	220.62	224.032	223.1385	219.441
South Carolina	191.18	191.18	192.692	198.894	217.76	220.028	219.038	216.828	217.916	217.8975	218.24
South											
Dakota					220.996	226.318	225.826	226.564	225.18	224.107	222.87
Utah	205.632	205.632	208.136	208.212	217.868	221.802	222.266	221.46	224.644	223.8755	224.480
Vermont			205.962	212.354	224.142	226.666	230.358	230.628	230.48	229.3465	223.846
Washingto n			206.756		220.42	223.552	224.81	224.058	223.882	227.436	223.725
West											
Virginia	195.794	195.794	204.098	205.534	214.186	214.284	219.546	216.162	216.894	219.811	216.661
Wisconsin	210.394	210.394	213.188		218.664	223.724	227.448	225.62	226.568	225.9135	223.229
Wyoming		208.574	204.544	210.578	225.776	227.202	228.228	226.21	227.686	230.605	229.542

### For the NAEP math grade 8data

Data source: arranged by the author from the NAEP website for the math grade 8.

Year for the NAEP math grade 8	1992	1996	2000	2003	2005	2007	2009	2011	2013	2015
Average of the 6 states that had been never been members of Common Core math	265.769	269.392	270.7872	275.9464	277.4518	280.7688	282.0288	282.8005	283.1867	281.3017
Average of the states 13 opted out of the CCSS math by 2014	266.2966	269.6872	271.3393	276.0997	277.4146	280.5534	282.2515	282.9353	283.3549	281.3905
Average of the states 18 opted out of the CCSS math by 2014	266.9791	270.3089	274.1005	276.832	278.2445	281.3703	282.3949	282.8665	283.1261	281.1255
Average of the jurisdictions that had stayed with the Common Core math before 2014	266.1891	270.2465	270.693	277.0602	277.7583	280.3209	282.4004	283.8428	284.3138	282.0245
Average of the jurisdictions that had stayed with the Common Core math before 2015 (except DC and DoDEA	267.4918	271.6676	271.9407	277.882	278.5833	281.1764	283.1522	284.4481	284.7182	282.3514

For the NAEP math grade 8. The 6-13-18 states are those above the red, horizontal line are those that had pulled out of the Common Core math by 2013-2014 or never tried. Those below the red line are those that had stayed with it at least till around the NAEP 2015 math.

C	ategory					all studen						its
o Y	ear	1992	1996	2000	2003	2005	2007	2009	2011	2013	2015	the dip 20:
А	verage of the states											
	8 opted out of the											_
C	CSS math by 2014	266.98	270.31	274.10	276.83	278.24	281.37	282.39	282.87	283.13	281.13	-2
						<b>1</b>						
A	verage of the states											
	3 opted out of the CSS math by 2014	266.30	269.69	271.34	276.10	277.41	280.55	282.25	282.94	283.35	281.39	-1
		200.50	209.09	2/1.54	270.10	2//.41	200.55	202.23	202.54	203.33	201.59	
	verage of the 6 states nat had been never											
	een members of											
	ommon Core math	265.77	269.39	270.79	275.95	277.45	280.77	282.03	282.80	283.19	281.30	-1
	laska		278		279	279	283	283	283	282	280	
	linnesota											
		282	284	287	291	290	292	294	295	295	294	
	lorida	260	264		271	274	277	279	278	281	275	
4 N	lebraska	278	283	280	282	284	284	284	283	285	286	
5 T	exas	265	270	273	277	281	286	287	290	288	284	
	'irginia	268	270	275	282	284	288	286	289	288	288	
	labama	252	257	264	262	262	266	269	269	269	267	
8 I	ndiana	270	276	281	281	282	285	287	285	288	287	
9 L	ouisiana	250	252	259	266	268	272	272	273	273	268	
10 N	lassachusetts	273	278	279	287	292	298	299	299	301	297	
	lew York	266	270	271	280	280	280	283	280	282	280	
			210									
	klahoma	268		270	272	271	275	276	279	276	275	
	ennsylvania	271			279	281	286	288	286	290	284	
14 A	rizona	265	268	269	271	274	276	277	279	280	283	
15	Georgia	259	262	265	270	272	275	278	278	279	279	
	entucky	262	267	270	274	274	279	279	282	281	278	
			-									
_	ennessee	259	263	262	268	271	274	275	274	278	278	
18 1	lorth Dakota	283	284	282	287	287	292	293	292	291	288	
4 4	ırkansas	256	262	257	266	272	274	276	279	278	275	
	California	261	263	260	267	269	270	270	273	276	275	-
	Colorado	272	276		283	281	286	287	292	290	286	
4 C	Connecticut	274	280	281	284	281	282	289	287	285	284	
5 C	Delaware	263	267		277	281	283	284	283	282	280	
6 F	lawaii	257	262	262	266	266	269	274	278	281	279	
	daho	275		277	280	281	284	287	287	286	284	
	linois			275	277	278	280	282	283	285	282	
_		000	004	213								
9 k		283	284		284	284	285	284	285	285	286	
10 K	Cansas			283	284	284	290	289	290	290	284	
11 N	Maine	279	284	281	282	281	286	286	289	289	285	
12 N	Maryland	265	270	272	278	278	286	288	288	287	283	
	1ichigan	267	277	277	276	277	277	278	280	280	278	1
	Mississippi	246	250	254	261	262	265	265	269	271	271	
	Missouri	271	273	271	279	276	281	286	282	283	281	
		211										-
_	Montana		283	285	286	286	287	292	293	289	287	
_	levada			265	268	270	271	274	278	278	275	
18 N	lew Hampshire	278			286	285	288	292	292	296	294	
19 N	lew Jersey	272			281	284	289	293	294	296	293	
	lew Mexico	260	262	259	263	263	268	270	274	273	271	
	lorth Carolina	258	268	276	281	282	284	284	286	286	281	
22 0		268	200	281	282	283	285	286	289	290	285	
_		∠08	070									٠
	Oregon		276	280	281	282	284	285	283	284	283	
	Rhode Island	266	269	269	272	272	275	278	283	284	281	
25 S	South Carolina	261	261	265	277	281	282	280	281	280	276	
26 S	outh Dakota				285	287	288	291	291	287	285	
27 L	Itah	274	277	274	281	279	281	284	283	284	286	
	/ermont		279	281	286	287	291	293	294	295	290	
				201				~~~~~				-
	Vashington		276	_	281	285	285	289	288	290	287	
_	Vest Virginia	259	265	266	271	269	270	270	273	274	271	
31 V	Visconsin	278	283		284	285	286	288	289	289	289	
32 V	Vyoming	275	275	276	284	282	287	286	288	288	287	
33	District of Columbia	235	233	235	243	245	248	254	260	265	263	
	DoDEA <sup>1</sup>		274	277	285	284	285	287	288	290	291	
۷.	verage of the jurisdiction	266	270	271	277	278	280	282	284	284	282	-5

Table: the USA 50 states and 2 jurisdictions (DC and DoDEA) and their math grade 8 of NAEP scores.

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#### Dongchan Lee's WP (Working Paper) Series on the math stagnation nations

Lee, Dongchan. 2017 February. WP series: Mathematics Stagnation Nation series: for the USA, Australia, New Zealand, UK, and Ireland (Part 1)

Math stagnation nations of all 5 developed, English-speaking countries according to PISA and TIMSS for the past 15-20 years of the math growth history: what does this mean for education and economy?

Lee, Dongchan. 2017 February. WP series: Mathematics Stagnation Nation series: for the USA (Part 2)

NAEP (National Report Cards) Math Grade 4 & 8 stagnations 1992-2015 of the 50 states of the United States: national, regional, and the past growth compared to the projected MMU1 impacts on math growths if fully implemented in 3-4 years

Lee, Dongchan. 2017 February. WP series: Mathematics Stagnation Nation series: for the USA (Part 3)

<u>The collective Math stagnations of the grades 4<sup>th</sup> and 8<sup>th</sup> in the big cities (or the School Districts based on TUDA of NAEP) of the USA over the 1 decade: their confirmations, time lags, math poverty shares, and the roles of the Common Core math</u>

WP series: Mathematics Stagnation Nation series: for the USA (Part 4)

Math Education stagnations in the USA played more roles than the Common Core math standards impacts for the stagnations on the NAEP 2015, but the math dipping (especially the grade 8) are most likely were due to the Common Core math

Lee, Dongchan. 2017 February. WP series: Mathematics Stagnation Nation series: for the USA (Part 5)

The quasi-universal math stagnations in developed countries are real and won't go away as the conventional EDU reforms are mostly futile: how to transcend them with MMU1 or at least 1/3 of its full version over the next 2-4 years

#### Lee's youtube video accompaniments

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