

A Targeted Household Stimulus Demi-Grant based on each State's AGI Distribution

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Each household whose AGI (or Economic Income, ECI) is at or below the 25th percentile of that state's AGI (or ECI) in 2019 would receive at an annual rate 20% of median state AGI (or ECI). This takes into account differences in state by state living standards, labor markets, and cost of living.

Overall, for the US 2019 annual AGI was \$45,144¹, so the maximum annual stimulus payment would be 20% of \$45,570 or \$9,114. If the stimulus is intended to be for 3 months, then then the payment would be $3/12 * \$9,114 = 1/4 * \$9,114 = \$2,278$. Phaseout would begin at the 25th percentile of AGI(or ECI) and be complete at the 75th percentile of AGI(ECI) in each state e.g phased out within the inter-quartile range of AGI (ECI). I estimate cost for a quarterly demi-grant to be about \$337 B. (See table below).

Explicitly, let:

AGI = Adjusted Gross Income in 2019 as reported on federal income tax returns

i'th person , j'th state

ECI = Economic Income in 2019 as constructed from the SOI compliance warehouse:

$$= \text{AGI} + \text{Refundable EITC} + \text{TANF} + \text{UI} + \text{Public Assistance} + \text{Cash Value of Food Stamps} + \text{Social Security Excluded from AGI}$$

AGI_Q1 = the value of the 25th percentile of AGI

AGI_Q2 = the value of the 50th percentile of AGI

AGI_Q3 = the value of the 75th percentile of AGI

G_{ij} = demigrant or stimulus payment to i'th household in j'th state

α = fraction of median income construct to be paid, $0 < \alpha < 1.0$ for 12 months, consider $\alpha=.2$

m = number of months represented in first demi-grant or stimulus payment, consider $m=3$

12 = number of months periods for which the stimulus package or demi-grant is intended to be in place

Annually, in algebraic form the demi-grant, G_{ij} , becomes:

$$G_{ij} = \alpha * \text{AGI_Q2}_j \quad \text{for } \text{AGI}_{ij} < \text{AGI_Q1}_j \quad [1]$$

For $\text{AGI}_{ij} > \text{AGI_Q1}_j$

$$G_{ij} = \alpha * \text{AGI_Q2}_j - \alpha * \text{AGI_Q2}_{ij} * [(\{\text{AGI}_{ij} / \text{AGI_Q3}_j\})] \quad [2 \text{ revised}]$$

The demi-grant in quarterly form, $G_{ij4} = (1/4)* G_{ij}$ [3]

¹ See IRS.Gov, Tax Stats March 2020. Table 2 Individual Income Tax Returns by state, using 1.06 inflation from 2017-2019.

State	First Quartile 2019 AGI	Median 2019 AGI	Third Quartile 2019 AGI	20% of Median AGI	Maximum Quarterly Demigrant	# Beneficiaries Getting Maximum	Total Quarterly Payments of Maximum Amount	Q3-Q1 Density	Avg Quarterly payment for Phaseout	Estimated Total Payments in Phase out Range	Total Quarterly Cost
Total US	22,090	45,144	89,725	9,029	2,257	105,653,717	238,483,366,126	70,435,811	1,406	99,066,135,199	337,549,501,324
Alabama	19,306	38,704	77,732	7,741	1,935	1,434,577	2,776,177,630	956,385	1,208	1,155,226,776	3,931,404,406
Alaska	25,865	52,528	99,827	10,506	2,626	238,419	626,187,238	158,946	1,653	262,810,780	888,998,018
Arizona	21,773	42,017	83,259	8,403	2,101	2,127,908	4,470,451,696	1,418,605	1,325	1,879,847,661	6,350,299,357
Arkansas	19,245	37,554	73,719	7,511	1,878	860,582	1,615,901,052	573,721	1,184	679,251,487	2,295,152,539
California	23,180	47,346	97,728	9,469	2,367	12,690,977	30,043,324,470	8,460,651	1,464	12,389,769,720	42,433,094,190
Colorado	25,842	51,237	99,156	10,247	2,562	1,886,381	4,832,645,915	1,257,587	1,615	2,030,706,451	6,863,352,366
Connecticut	26,082	55,761	110,103	11,152	2,788	1,210,814	3,375,828,135	807,209	1,724	1,391,842,100	4,767,670,235
Delaware	23,678	47,801	93,087	9,560	2,390	322,579	770,975,100	215,053	1,499	322,362,404	1,093,337,504
DC	27,502	56,447	107,208	11,289	2,822	250,808	707,809,464	167,205	1,773	296,484,778	1,004,354,242
Florida	18,971	38,097	77,901	7,619	1,905	7,113,999	13,551,264,617	4,742,666	1,184	5,616,265,989	19,167,530,606
Georgia	19,450	40,031	82,235	8,006	2,002	3,159,776	6,324,433,854	2,106,517	1,237	2,606,756,549	8,931,190,403
Hawaii	24,685	47,917	90,156	9,583	2,396	485,297	1,162,706,097	323,531	1,526	493,686,727	1,656,392,823
Idaho	22,143	43,354	81,685	8,671	2,168	528,131	1,144,829,569	352,087	1,378	485,057,703	1,629,887,272
Illinois	23,363	48,502	95,086	9,700	2,425	4,201,251	10,188,542,026	2,800,834	1,510	4,230,649,799	14,419,191,825
Indiana	21,281	43,047	82,422	8,609	2,152	2,151,425	4,630,576,570	1,434,283	1,354	1,942,046,342	6,572,622,913
Iowa	25,680	49,253	90,178	9,851	2,463	998,691	2,459,421,398	665,794	1,582	1,053,258,570	3,512,679,968
Kansas	23,279	46,203	88,064	9,241	2,310	912,917	2,108,987,988	608,611	1,460	888,824,601	2,997,812,589
Kentucky	20,403	40,519	77,808	8,104	2,026	1,325,586	2,685,537,817	883,724	1,279	1,129,913,219	3,815,451,036
Louisiana	18,542	38,112	77,886	7,622	1,906	1,379,027	2,627,894,537	919,351	1,180	1,084,497,423	3,712,391,959
Maine	22,560	43,334	81,614	8,667	2,167	455,778	987,531,002	303,852	1,383	420,169,469	1,407,700,471
Maryland	25,333	54,024	106,351	10,805	2,701	2,084,726	5,631,257,702	1,389,817	1,672	2,324,210,120	7,955,467,821
Massachusetts	27,748	56,774	111,489	11,355	2,839	2,355,684	6,687,033,057	1,570,456	1,773	2,783,773,626	9,400,806,683
Michigan	20,301	43,076	85,825	8,615	2,154	3,262,821	7,027,509,549	2,175,214	1,332	2,896,600,790	9,924,110,340
Minnesota	27,406	53,282	99,713	10,656	2,664	1,888,322	5,030,674,864	1,258,881	1,698	2,137,783,130	7,168,461,994
Mississippi	17,609	33,956	67,500	6,791	1,698	863,381	1,465,849,989	575,587	1,070	615,912,273	2,081,762,261
Missouri	21,117	42,447	82,352	8,489	2,122	1,937,977	4,113,030,602	1,291,985	1,333	1,722,573,442	5,835,004,044
Montana	21,177	42,413	82,481	8,483	2,121	348,064	738,117,049	232,043	1,333	309,209,247	1,047,326,295
Nebraska	25,250	47,676	88,933	9,535	2,384	615,398	1,466,974,000	410,265	1,530	627,827,576	2,094,801,636
Nevada	21,823	41,067	79,072	8,213	2,053	1,001,884	2,057,194,466	667,923	1,310	874,989,257	2,932,183,723
New Hampshire	27,923	55,063	104,073	11,013	2,753	481,894	1,326,720,683	321,263	1,746	560,892,824	1,887,613,508
New Jersey	25,532	55,423	111,993	11,085	2,771	3,034,424	8,408,868,343	2,022,949	1,701	3,441,973,511	11,850,841,854
New Mexico	18,048	36,363	73,095	7,273	1,818	648,436	1,178,963,640	432,291	1,134	490,018,503	1,668,982,143
New York	21,542	46,267	93,425	9,253	2,313	6,767,069	15,654,558,469	4,511,379	1,423	6,421,416,984	22,075,975,452
North Carolina	20,548	40,926	81,568	8,185	2,046	3,185,422	6,518,255,774	2,123,615	1,281	2,720,098,014	9,238,353,788
North Dakota	27,575	52,245	96,834	10,449	2,612	249,114	650,571,534	166,076	1,678	278,687,273	929,438,807
Ohio	22,577	44,132	81,688	8,826	2,207	3,866,744	8,532,365,044	2,577,829	1,408	3,630,181,469	12,162,546,513
Oklahoma	20,800	41,162	79,776	8,232	2,058	1,134,518	2,334,946,958	756,345	1,299	982,129,263	3,317,076,221
Oregon	23,457	46,784	90,691	9,357	2,339	1,356,062	3,172,111,079	904,041	1,472	1,330,851,585	4,502,962,664
Pennsylvania	22,739	46,898	90,661	9,380	2,345	4,275,845	10,026,339,148	2,850,563	1,467	4,180,366,359	14,206,705,507
Rhode Island	23,269	46,783	90,276	9,357	2,339	367,454	859,531,861	244,969	1,471	360,359,802	1,219,891,663
South Carolina	20,179	39,565	78,850	7,913	1,978	1,553,071	3,072,323,879	1,035,381	1,242	1,286,196,416	4,358,520,295
South Dakota	24,852	46,848	86,877	9,370	2,342	283,157	663,263,559	188,771	1,506	284,331,225	947,594,784
Tennessee	20,248	40,040	77,677	8,008	2,002	2,104,790	4,213,835,885	1,403,193	1,262	1,770,753,704	5,984,589,589
Texas	20,824	42,423	85,658	8,485	2,121	8,689,160	18,431,150,761	5,792,773	1,318	7,637,279,313	26,068,430,073
Utah	25,168	49,460	91,200	9,892	2,473	903,939	2,235,423,068	602,626	1,578	950,769,737	3,186,192,805
Vermont	23,188	45,224	85,874	9,045	2,261	225,440	509,763,124	150,293	1,436	215,802,369	725,565,494
Virginia	24,879	52,144	104,462	10,429	2,607	2,754,302	7,180,950,071	1,836,201	1,614	2,963,735,024	10,144,685,095
Washington	27,590	54,882	104,817	10,976	2,744	2,501,787	6,865,091,162	1,667,858	1,733	2,890,701,115	9,755,792,277
West Virginia	18,903	38,559	76,002	7,712	1,928	538,049	1,037,319,732	358,699	1,204	431,772,484	1,469,092,216
Wisconsin	24,405	48,179	89,687	9,636	2,409	1,900,343	4,722,380,032	1,306,895	1,532	2,002,476,156	6,724,856,188
Wyoming	24,589	51,060	94,407	10,212	2,553	187,165	477,834,117	124,777	1,609	201,763,509	678,597,626