The following appendices are supplemental to a Commonwealth Fund report, C. Eibner and J. Liu, *Options to Expand Health Insurance Enrollment in the Individual Market* (The Commonwealth Fund, October 2017), available on the Fund's website at: http://www.commonwealthfund.org/publications/fund-reports/2017/oct/expand-insurance-enrollment-individual-market.

APPENDIX A. MODELING APPROACH

COMPARE Overview

COMPARE is a microsimulation model that uses economic theory, nationally representative data, and evidence from past experience to estimate how consumers and business will respond to health policy changes.[1] The model creates a synthetic population of individuals, families, health expenditures, and firms using data from the April 2010 wave of the 2008 Survey of Income and Program Participation, the 2010–2011 Medical Expenditures Panel Survey (MEPS), and the 2009 Kaiser Family Foundation/Health Research and Educational Trust Employer Health Benefits Survey. While the data sources predate the implementation of the ACA, we update them to reflect population growth based on factors reported by the U.S. Census Bureau, and to reflect health care cost growth using the CMS National Health Expenditures Accounts.

We assign each individual in the Survey of Income and Program Participation a spending amount using the spending of a similar individual from the MEPS. We then augment spending imputations with data on high-cost claims from the Society of Actuaries. These adjustments account for the fact that the MEPS underrepresents individuals with high spending.

In COMPARE, individuals' decisions about health insurance enrollment are simulated by algorithms that weigh the costs and benefits of available options, an approach that is referred to by economists as "utility maximization." The utility-maximization framework accounts for the following:

- premium costs
- anticipated out-of-pocket health care spending
- the value of health care consumption
- the risk of incurring a financially devastating health care bill, and
- any penalties the individual would face by remaining uninsured, including the risk of facing denial or being charged higher premiums at a later date.

Premium costs are adjusted to account for tax credits, if such credits are available to the enrollee. All else being equal, higher premiums reduce an individual's probability of enrolling in health insurance. In contrast, several factors encourage enrollment, such as a lower risk of catastrophic spending, reduced out-of-pocket spending, the avoidance of penalties, and increases in health care utilization.

In the model, businesses' decisions are simulated by algorithms that consider the value of health insurance to their workers. Tax credits for individual-market coverage and Medicaid eligibility expansions may reduce the value of health insurance to workers, leading firms to drop insurance. However, mandates requiring individuals to enroll in insurance, as well as mandates requiring firms to offer coverage, tend to increase the likelihood that a firm will offer insurance.

We calibrate the model to ensure that it accurately predicts outcomes for years in which complete data exist. As new data emerge, we update the model to reflect this information. For example, we added an adjustment to our Medicaid enrollment algorithm to account for the "welcome mat effect," whereby people previously eligible but not enrolled sign up because of the ACA. This adjustment is described in more detail below.

The Approach to Modeling the ACA

To model individual and family health insurance enrollment decisions under the ACA, COMPARE uses a utility-maximization approach, in which simulated decision-makers weigh the costs and benefits of available options. The utility-maximization framework accounts for the tax penalty for not purchasing insurance, the value of health care consumption, premium costs, expected out-of-pocket health care spending, and financial risk associated with out-of-pocket spending.

We scale each of these components of utility to dollars and assume that they are additively separable.[2] We further assume that individuals' utilities are separable in consumption and health. The health-related component of the utility function is modeled as follows:

$$U_{ijk} = u(H_{ij}) - E(OOP_{ij}) - p_{ij}^{(H)} - \frac{1}{2} rVAR(OOP_{ij}) - (0.8 * Penalty_j) + Calibration_{jk}$$

Within this equation:

- $u(H_{ij})$ is the utility associated with consuming health care services for individual i under insurance option j
- k represents an individual's demographic group based on age, health status, and income
- OOP_{ij} is the out-of-pocket spending expected
- $p^{(H)}$ is the individual's premium contribution (after adjusting for tax credits), and
- r is the coefficient of risk aversion.

Possible health insurance enrollment choices (j) under the ACA may include employer coverage, Medicaid or Children's Health Insurance Program (CHIP) coverage, an ACA-compliant individual-market plan (including plans available on and off the marketplaces), or another source of coverage.[3] Individuals can also choose to forgo insurance. Not all individuals will have access to all forms of coverage. For example, access to Medicaid is contingent on eligibility, and individuals will have access to employer coverage only if they (or their spouse or parent) work for a business that offers insurance.

The *Penalty* term represents the tax penalty associated with insurance status j, and it is 0 for all but the uninsured insurance status. We downweight the tax penalty by a factor of 0.8 to capture the fact that, on average, the Internal Revenue Service collects only about 80 percent of taxes owed.[4]

The term $Calibration_{jk}$ is a factor that adjusts utilities to match enrollment patterns observed in pre-ACA data. The term accounts for nonpecuniary factors that may influence preferences for different types of insurance. Such factors include the convenience associated with enrolling in employer coverage and access constraints associated with Medicaid. Specific modeling strategies for each source of coverage j are described next.

Small-Group Employer Coverage. Small employers in the model choose whether to offer coverage based on worker preferences and a small set of other factors, including the employer's industry and whether workers are unionized. Under the ACA, all small firms are part of a single risk pool with guaranteed issue, and restrictions that allow insurers to charge different premiums to different groups based only on age (with three-to-one ratios allowed among older and younger enrollees), geography, family size, tobacco use, and plan generosity.

In the current version of the model, small-group market regulations apply to all firms with 50 or fewer employees, regardless of year. Earlier versions of the model expanded the small-group market to include firms with 100 or fewer workers after 2015, as originally intended by the ACA. We revised the definition because the Protecting Affordable Coverage for Employees Act, signed into law in late 2015, amended the ACA's definition of a *small employer* to include firms with one to 50 employees in perpetuity, unless states opt to extend the small-group market to firms with up to 100 workers.

Small firms in the model are permitted to purchase a 60 percent, 70 percent, 80 percent, or 90 percent actuarial value plan on the ACA's regulated small-group market, which includes the Small Business Health Options Program (SHOP) marketplaces. Small firms in the model may retain grandfathered status, which exempts them from the ACA's rating regulations, although we assume that a certain percentage of small firms will lose grandfathered status each year.

The ACA also offers a small-business tax credit to small firms with low-wage workers who obtain coverage through the SHOP marketplaces. Because firms can take advantage of these credits for only two years, we assume that all small firms will have exhausted their tax-credit eligibility by 2020 (the year modeled in this analysis).

Large-Group Employer Coverage. Like small employers, large employers choose whether to offer coverage based on worker preferences and several other characteristics, including union status and industry. We allow large firms that offer coverage to choose between four different plans, which are distinguished by plan generosity and rated based on enrollees' expected health expenditures. We estimate premiums for the large-group market based on a regression. The firm's decision to offer is modeled using structural econometric techniques.

Medicaid. We model state Medicaid expansion decisions as of January 1, 2017,and include North Carolina as a Medicaid expansion state.[5] We assume that, under the ACA, states with Medicaid eligibility thresholds that exceeded 138 percent of the federal poverty level (FPL) before 2014 will roll back their eligibility thresholds to 138 percent because of federally funded tax credits and cost-sharing subsidies that become available to this group. In states that did not expand Medicaid, individuals who would have qualified for Medicaid expansion and have income above FPL can obtain tax credits on the market-

places. However, those with incomes below FPL are ineligible for tax credits. Through our calibration process, the model accounts for the fact that not all Medicaid-eligible individuals chose to enroll, perhaps because of stigma, lack of information, or transaction costs associated with enrolling. To account for the fact that the ACA increased Medicaid enrollment among the previously eligible population, we increase the calibration parameter by a factor of approximately $200 in the post-2014 period.

Individual Market. Under the ACA, the individual market consists of two components: 1) the insurance marketplaces where individuals can receive tax credits, and 2) off-marketplace plans that comply with the ACA's rating requirements. Because the ACA requires all plans in the individual market to be rated together, we model on- and off-marketplace plans that are ACA-compliant as a single risk pool. Hence, we do not distinguish between enrollment in on-marketplace plans and off-marketplace plans that comply with the ACA. In the ACA-compliant individual market, modeled individuals and families can purchase plans with a 60 percent, 70 percent, 80 percent, or 90 percent actuarial value, corresponding to bronze, silver, gold, and platinum plans on the marketplaces, respectively. We do not model catastrophic plans, which are available only to those under age 30 or who qualify for a hardship exemption from the individual mandate. According to a 2015 fact sheet published by the Centers for Medicare and Medicaid Services (CMS), less than 1 percent of all marketplace enrollees have selected catastrophic coverage.[6]

ACA-compliant individual-market premiums are calculated endogenously in the model based on the health expenditure profile of those who choose to enroll. The total, unsubsidized premium is based on enrollees' age, smoking status, and market-rating reforms implemented under the ACA.[7] We model three-to-one rate-banding on age for adults ages 21 and older, with a separate age-band for children and young adults under age 21. We also account for the ACA's risk-adjustment requirements, which transfer funds from plans with lower-than-average actuarial risk to plans with higher-than-average actuarial risk.

The U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation (ASPE) reports the average second-lowest-cost silver premium for a 27-year-old to be $296 per month in 2017.[8] This compares with our estimate of $341 per month for 2020, which reflects an average of 4.8 percent growth per year from 2017. We do not account for possible changes to the individual market that may occur given uncertainties, such as possible funding cuts to cost-sharing reductions and not enforcing the individual mandate.

Under the ACA, the actual premium an enrollee pays is adjusted to account for tax credits available to qualifying individuals with incomes between 100 percent and 400 percent of FPL who do not have affordable offers of insurance from another source (e.g., employer coverage, Medicaid). We apply the ACA's subsidy formula using the benchmark silver premium and the individual's income. Eligible individuals who have incomes between 100 percent and 250 percent of FPL can also receive cost-sharing subsidies that help to lower out-of-pocket spending. As required by the ACA, individuals receiving cost-sharing subsidies in COMPARE must purchase a silver plan (70 percent actuarial value), and out-of-pocket spending is reduced to an equivalent of 94 percent, 87 percent, or 73 percent actuarial value plan if the individual's income is between 100 percent and 150 percent, 150 percent and 200 percent, or 200 percent and 250 percent of FPL, respectively. Note that out-of-pocket spending enters the individual's utility function; hence, individuals receiving cost-sharing subsidies are more likely to purchase coverage.

Comparison to Congressional Budget Office (CBO) Estimates. We also compared the current COMPARE insurance estimates for 2020 under current law with those of the CBO (Exhibit A1). We consider both CBO's March 2016 baseline,which they used in their estimates of the potential effects of the American Health Care Act, and a subsequent update from January 2017.[9] The January update revised downward CBO's estimate of the number of enrollees in the individual market. Although the January update reported only individual-market coverage and the number of uninsured individuals, the text stated that the reduction in estimated individual market enrollment was largely offset by revising upward the number of enrollees in employer-sponsored coverage.

After accounting for these changes, RAND's estimates are very similar to CBO's. One remaining difference is that CBO allows people to have more than one source of health insurance coverage, so the numbers in its 2016 baseline do not sum to population totals. RAND assigns everyone a primary insurance category, and does not account for multiple sources of coverage. This accounting difference may explain why CBO estimates more Medicaid enrollees than does RAND's COMPARE.

Exhibit A1. Insurance Enrollment by Source of Coverage Under the ACA, CBO and COMPARE, 2020

	CBO March 2016 (millions)	CBO January 2017 (millions)	COMPARE August 2017 (millions)
Total insured	249	—	252.5
Employer	152	—	155.7
Medicaid	68	—	62.0
Individual market	27	21	22.3
Other	14	—	12.5
Uninsured	27	28	25.5
Total population	276	—	278.1
Share uninsured	9.8%	—	9.2%

Note: Estimates reflect current law (the ACA), assuming the individual mandate is enforced and cost-sharing reductions are funded. CBO's numbers do not sum to population totals because they allow individuals to be assigned to more than one source of insurance coverage. CBO's January 2017 update reported estimates only for individual-market coverage and the number uninsured.

Source: CBO estimates from 2016 and 2017.

Scenarios Modeled

Enhance APTCs for Young Adults

Under the ACA, individuals and families are eligible for APTCs on the marketplaces if they have incomes between 100 percent and 400 percent of the federal poverty level and no access to an alternative affordable plan through an employer or public source. The APTC amount is equal to the premium for the second-lowest-cost silver plan in the individual's rating area, minus a required percentage contribution that scales with income. For the 2018 plan year, the required percentage contribution will range from 2.01 percent of income for those with incomes between 100 percent and 133 percent of FPL to 9.56 percent of income for those with incomes between 300 percent and 400 percent of FPL.[10] The contributions are adjusted over time based on health care cost growth relative to general inflation, and — in 2020 — we estimate that contributions will range from 2.09 percent to 9.95 percent of income.

To model the enhancement, we increase the monthly APTC for eligible enrollees between the ages of 19 and 30 by $50. The enhancement amount scales down linearly for enrollees between the ages of 30 and 35, declining to $0 at age 35. APTC-eligible enrollees in the specified age-range receive the full amount of the enhancement, regardless of their income level, with the caveat that the total credit (original APTC plus enhancement) may not exceed the cost of the second-lowest-cost silver plan available to the enrollee.

Another commonly discussed way to reduce costs for young adults is to enact five-to-one rate banding, a policy that allows insurers to charge older adults up to five times as much as younger adults (under current law, insurers may charge older adults only three times as much as younger adults). In prior work, we found that five-to-one rate banding would lead to slightly larger gains in insurance coverage than would enhanced APTCs for young adults.[11] However, it would lead to substantially larger deficit increases then the enhanced APTC approach. This is because five-to-one rate banding would increase premiums for older adults, and hence increase federal APTC spending. It also would cause some older adults to become uninsured.

We modeled this policy, based on suggestions made in 2016 by members of the Obama Administration, in a previous analysis.[12]

Extend APTCs to All Incomes

To model the expansion of tax credits to individuals with incomes over 400 percent of FPL, we simply extend the tax credits to this population in our model. The change influences the chance of enrolling in the individual market by reducing the premium contribution that the enrollee faces (in the equation shown in the prior section). In addition, the tax credit reduces premium spending for eligible individuals who would have enrolled in the individual market without the tax credit, and increases government spending.

As under current law, we continue to assume that those with affordable employer coverage are ineligible for tax credits. Affordability is defined as having an employer premium contribution for single coverage that is no greater than 9.95 percent of income in 2020. Further, we assume that those with incomes under 100 percent of FPL remain ineligible for tax credits, even if their states opted not to expand Medicaid.[13] The possibility of extending tax credits to people with higher incomes has been proposed several times, including by Senators Heidi Heitkamp and Dianne Feinstein.[14] We modeled this proposal in a previous report.[15]

Increase the Value of APTCs

Under current law, those with incomes between 100 percent and 400 percent of poverty and no other affordable source of coverage are eligible for APTCs, which cap their contribution toward a benchmark health insurance plan on the ACA's marketplaces. We considered a scenario that would reduce the contribution level for those with incomes between 300 percent and 400 percent of FPL from 9.95 percent to 8.5 percent of income for a benchmark plan, with commensurate reductions for lower-income individuals. To incorporate this change, we adjusted the maximum percentage contributions by a factor of (8.5/9.95) = 0.8543. After these adjustments, the percentage contribution amounts ranged from 1.79 percent of income for those with incomes between 100 percent and 138 percent of poverty and no other affordable source of coverage to 8.5 percent of income for those with incomes between 300 percent and 400 percent of poverty. We modeled this policy, which is similar to a proposal Hillary Clinton suggested during the 2016 presidential election campaign, in a previous report.[16]

Reinsurance

Reinsurance pays insurers some or all the expenses incurred by enrollees with costly conditions. Reinsurance reduces insurers' risk of experiencing a catastrophic financial loss. Further, if individual market reinsurance is funded through external sources (e.g., from government investment or through taxes levied outside of the individual market), it reduces the average cost of insuring an individual-market enrollee, leading to lower premiums. Under the ACA, a transitional reinsurance program was available from 2014 to 2016. The reinsurance program was funded by a per capita contribution from individuals covered by individual and employer health plans, including self-insured plans. We consider two reinsurance scenarios. The standard reinsurance scenario is based on the ACA's 2016 payment parameters: individual-market insurers would be eligible for reinsurance payments for enrollees whose annual claims exceed $90,000; the payments would cover 50 percent of claims between $90,000 and $250,000.[17] The generous reinsurance scenario is based on the ACA's 2014 payment parameters: individual-market insurers would be eligible for reinsurance payments for enrollees whose annual claims exceed $45,000; the payments would cover 100 percent of claims between $45,000 and $250,000.[18] We used the annual expenditures of individual-market enrollees to calculate the costs of the reinsurance programs.

In the baseline reinsurance scenarios, we assume that the reinsurance program is fully funded by a per capita tax levied on all individual market, group, and self-insured health plan enrollees. In the alternative reinsurance scenario with federal investment, we assume the federal government would contribute up to $10 billion and adjust the per capita tax rate downward to meet the remaining cost of the reinsurance program. In the alternative reinsurance scenario with the employer mandate threshold moved from 50 to 500 employees, we assume the program would be fully funded by the per capita tax without federal investment. To estimate the change in revenue from this scenario, we reduce the employer mandate revenue estimated in the baseline scenario by the change in the number of workers at nonoffering firms subject to the mandate.[19]

We estimate that the total cost of the reinsurance programs would range from $6.2 billion in the standard scenario to $34.1 billion in the generous scenario. As modeled, the reinsurance program would be funded through a tax levied on all health plans, including group, self-insured, and nongroup plans. On a per enrollee basis, the tax would be $35 per enrollee in the standard scenario and $189 per enrollee in the generous scenario. Because the tax would be levied on all plans, including marketplace plans, a portion of the tax would be paid by the federal government as part of the APTC. As shown in Exhibit 4 above, the change in federal APTC spending reflects the net effect of the reinsurance tax and the premium reductions caused by the reinsurance program. Despite the new tax, federal spending on APTCs would fall because the additional cost of the reinsurance tax would be more than offset by premium reductions caused by the inflow of reinsurance funding into the nongroup market from taxes on group and self-funded health plans.

When we estimate the total cost of the reinsurance program to taxpayers, we consider the change in the deficit plus the cost of the reinsurance tax to health plan enrollees (Exhibit 5). Because taxes levied on subsidized marketplace plans are incorporated into APTC spending, they are reflected in the deficit change, and need to be removed from the reinsurance tax calculations to avoid double counting. For enrollees who receive APTCs, we model the federal contribution to reinsurance taxes as *Min(Reinsurance Tax, APTC)*. To calculate the nonfederal cost of the reinsurance program, we subtract these federal payments from the total cost of the reinsurance program. Exhibit A2 reports the total cost of the reinsurance program, and shows the amount incorporated into APTC spending (federal reinsurance payments) and the amount paid by private health plan enrollees. In calculating the cost to taxpayers, we sum the deficit impact and private reinsurance payments.

Exhibit A2. Cost of Reinsurance Options (in billions), 2020

	Standard reinsurance (policy option 5)	Generous reinsurance (policy option 6)
Total cost of the reinsurance program	$6.23	$34.1
Federal reinsurance payments (incorporated into federal APTC spending)	$0.26	$2.2
Private reinsurance payments (paid by all health plan enrollees)	$5.97	$31.9

Notes: APTC = advance premium tax credit. Analysis assumes reinsurance is funded through a per capita tax on all group, nongroup, and self-funded health plans. The federal government bears the majority of the cost of the tax for people who are enrolled in APTC-eligible marketplace plans. The remaining costs are born directly by health plan enrollees.

Data: Analysis based on the RAND COMPARE microsimulation model.

Differences from Previous Estimates

As mentioned above, we have previously modeled many of the policies considered in this report. While the results presented here are generally similar to our earlier estimates, some numbers have changed slightly because of model updates. The figures in the current report are for calendar year 2020, while several of our prior estimates considered outcomes for 2018 or other years. We have also updated our health care cost inflation factors to reflect the most recent projections from the National Health Expenditure Accounts. These adjustments affect both health care cost estimates as well as the applicable percentage contributions used to calculate tax credit amounts and, for those with access to employer coverage, whether that coverage is affordable. We made a change to the model's budget constraint, which now precludes individuals with incomes below 400 percent of FPL from spending more than 25 percent of their income on health insurance (previously, this constraint applied only to those with incomes at or below 138 percent of FPL). Finally, for the scenario in which APTCs are extended to those with higher incomes, our deficit effect now includes a small change in employer mandate revenue, which we had not reported in our previous report.

APPENDIX B. SUPPLEMENTAL EXHIBITS

Exhibit B1 shows estimated enrollment by source of coverage under the ACA (current law) and the six policies considered.

In Exhibit B2 we report individual-market silver premiums (for a nonsmoker) by age under current law and under the six policies considered. While premium levels vary across ages, the proportional change in premiums due to each modeled policy is the generally the same because the ACA's age bands require that premiums vary proportionally across age category. One exception to this rule is that, in the reinsurance scenarios, we assume the health plan fee is the same for all age categories, and is levied after the age rating is applied. Because we assume insurers pass the fee on to consumers in the form of higher premiums, this lump-sum charge causes the proportional effect of reinsurance on premiums to vary slightly across age categories.

Exhibit B2 also shows the change in the enrollee-weighted average premium. Enrollee-weighted average premiums differ from age-specific silver premiums because they incorporate shifts in the age composition of enrollees, changes in the distribution of metal levels selected, and changes in the share of enrollees who are smokers.

Exhibit B1. Nonelderly Health Insurance Enrollment (in millions), 2020, ACA and Modifications to Expand Coverage

		Change in enrollment under modifications to expand coverage					
	ACA	Enhance APTCs for young adults	Increase APTCs	Extend APTCs	Increase and extend APTCs	Standard reinsurance	Generous reinsurance
Total insured	252.5	0.8	1.0	1.2	2.6	0.9	3.4
Individual market	22.3	1.0	1.4	1.6	3.4	1.2	5.4
Employer-sponsored	155.7	–0.1	–0.5	–0.4	–0.9	–0.4	–2.3
Medicaid	62.0	0.0	0.0	0.1	0.1	0.0	0.3
Other	12.5	0.0	0.0	0.0	0.0	0.0	0.0
Uninsured	25.5	–0.8	–1.0	–1.2	–2.6	–0.9	–3.4

Notes: APTCs = advance premium tax credits. Analysis assumes cost-sharing reductions are paid and the individual mandate is enforced. Individual-market plans include plans purchased on and off the marketplaces.

Data: Analysis based on the RAND COMPARE microsimulation model.

Exhibit B2. Individual-Market Premiums, 2020, ACA and Modifications to Expand Coverage

		Change in premiums under modifications to expand coverage					
Premiums	ACA	Enhance APTCs for young adults	Increase APTCs	Extend APTCs	Increase and extend APTCs	Standard reinsurance	Generous reinsurance
Silver plan, 21-year-old	$3,880	$3,850 (–0.8%)	$3,880 (–0.1%)	$3,790 (–2.3%)	$3,700 (–4.7%)	$3,740 (–3.5%)	$3,180 (–18.0%)
Silver plan, 30-year-old	$4,570	$4,530 (–0.8%)	$4,570 (–0.1%)	$4,460 (–2.3%)	$4,360 (–4.7%)	$4,400 (–3.7%)	$3,710 (–18.7%)
Silver plan, 40-year-old	$5,170	$5,130 (–0.8%)	$5,160 (–0.1%)	$5,040 (–2.3%)	$4,920 (–4.7%)	$4,970 (–3.8%)	$4,170 (–19.2%)
Silver plan, 50-year-old	$7,580	$7,530 (–0.8%)	$7,580 (–0.1%)	$7,410 (–2.3%)	$7,230 (–4.7%)	$7,280 (–4.0%)	$6,040 (–20.4%)
Silver plan, 60-year-old	$11,130	$11,050 (–0.8%)	$11,120 (–0.1%)	$10,870 (–2.3%)	$10,610 (–4.7%)	$10,670 (–4.1%)	$8,780 (–21.2%)
Enrollee-weighted average[a]	$6,180	$6,080 (–1.6%)	$6,130 (–0.7%)	$6,150 (–0.5%)	$5,960 (–3.4%)	$5,950 (–3.6%)	$5,090 (–17.6%)

Notes: APTCs = advance premium tax credits. Numbers in parentheses represent percentage changes in premiums relative to the ACA scenario. Premium estimates assume that CSRs are funded, and that the ACA's individual mandate is enforced. Silver plan premiums are for nonsmokers.

[a] The change in the enrollee-weighted average is different from the change in the age-specific silver premiums for several reasons. First, the enrollee-weighted average reflects changes in enrollment across metal levels. Second, the enrollee-weighted average incorporates changes in the age composition of enrollees, which varies across the policies considered (see Appendix C). Finally, enrollee-weighted average premiums vary depending on the share of smokers in the individual market, an outcome that varies across the scenarios.

Data: Analysis based on the RAND COMPARE microsimulation model.

APPENDIX C. CHARACTERISTICS OF INDIVIDUAL-MARKET ENROLLEES

In this section, we describe how the characteristics of the insured population change in response to each of the policies considered.

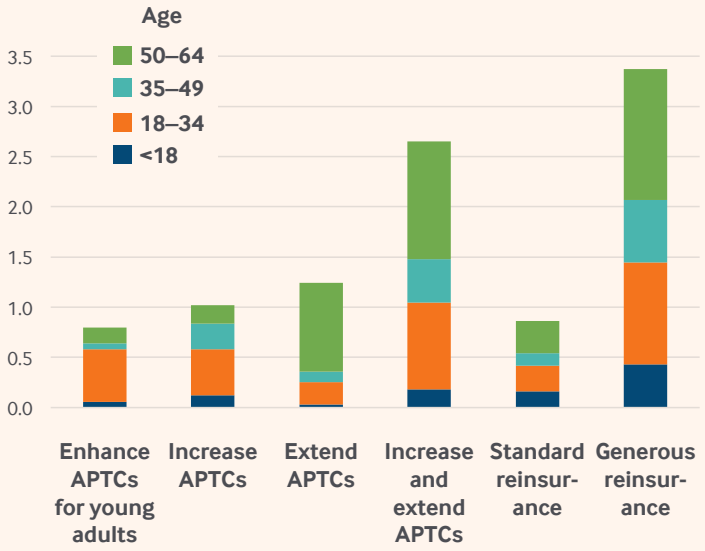
Age Distribution of the Newly Insured

Exhibit C1 shows the number of newly insured individuals, by age group, under each of the policies considered. Not surprisingly, providing enhanced tax credits for young adults primarily affects people ages 18 to 34, with little gain in insurance for other age groups. Extending APTCs to all incomes has a disproportionate effect on enrollees ages 50 to 64. Because older adults can be charged up to three times as much as younger adults for health insurance, they are more likely to have to pay more than 9.95 percent of their income for health insurance, and hence benefit more than younger adults from the tax-credit extension. The generous reinsurance option has the largest effect on enrollment at every age, primarily because this policy leads to substantial reductions in individual-market premiums.

Income Distribution of the Newly Insured

Two of the policies considered — enhancing APTCs for young adults and increasing APTCs for currently eligible enrollees — directly reduce costs only for those with incomes between 139 percent and 400 percent of FPL, or 100 percent and 400 percent of FPL in states that have not expanded Medicaid. In contrast, extending APTCs and adding reinsurance reduce costs primarily for those with incomes above 400 percent of FPL. One policy combines increased tax credits for currently eligible enrollees with extending tax credits to more people. Exhibit C2 shows that policies that reduce premiums for those with incomes above 400 percent of FPL tend to have the biggest effects on overall enrollment. This is because many uninsured individuals with incomes at or below 400 percent FPL already qualify for tax credits, and have chosen not to enroll (hence adding additional tax credits for the lower-income group targets a less-responsive group of individuals).

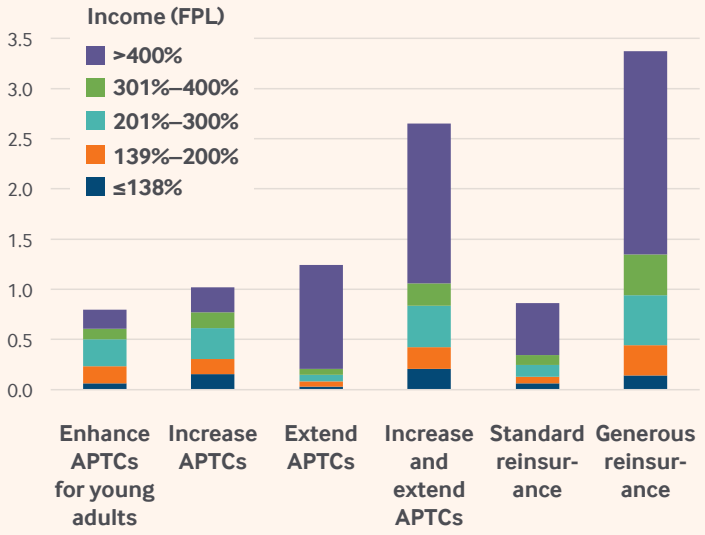
Exhibit C1. Number of Newly Insured Individuals (in millions), by Age, 2020, Modifications to Expand Coverage



Notes: APTCs = advance premium tax credits. Exhibit shows the estimated increase in total insurance enrollment, relative to the ACA, by age category, for each of the policy options considered.

Data: Analysis based on the RAND COMPARE microsimulation model.

Exhibit C2. Number of Newly Insured Individuals (in millions), by Age, 2020, Modifications to Expand Coverage



Notes: FPL = federal poverty level. APTCs = advance premium tax credits. Exhibit shows the estimated increase in total insurance enrollment, relative to the ACA, by income category, for each of the policy options considered.

Data: Analysis based on the RAND COMPARE microsimulation model.

APPENDIX NOTES

1 A. Cordova, F. Girosi, S. Nowak et al., "The COMPARE Microsimulation Model and the U.S. Affordable Care Act," *International Journal of Microsimulation,* 2013 6(3):78–117.

2 This approach follows D. P. Goldman, J. L. Buchanan, and E. B. Keeler, "Simulating the Impact of Medical Savings Accounts on Small Business," *Health Services Research,* April 2000 35(1 Pt. 1):53–75.

3 Other sources of coverage include Medicare for the nonelderly with qualifying conditions and military-related sources of coverage, such as TRICARE.

4 Internal Revenue Service, *Tax Gap Estimates for Tax Years 2008–2010* (IRS, April 2016).

5 Kaiser Family Foundation, *Status of State Action on the Medicaid Expansion Decision* (Henry J. Kaiser Family Foundation, Jan. 1, 2017). North Carolina's governor announced plans to expand Medicaid, and — although there is uncertainty about whether the plans will move forward — we are assuming the state would expand by 2020. For a recent summary, see R. Craver, "U.S. House ACA Reform May Turn Up Heat on N.C. Medicaid Expansion," *Winston-Salem Journal,* March 8, 2017.

6 Centers for Medicare and Medicaid Services, *Fact Sheet: March 31, 2015 Effectuated Enrollment Snapshot* (CMS, June 2, 2015).

7 Patient Protection and Affordable Care Act; Health Insurance Market Rules; Rate Review, *78 Federal Register 13405,* Feb. 27, 2013.

8 Office of the Assistant Secretary for Planning and Evaluation, *Health Plan Choice and Premiums in the 2017 Health Insurance Marketplace,* ASPE Research Brief (U.S. Department of Health and Human Services, Oct. 24, 2016).

9 Congressional Budget Office, *Federal Subsidies for Health Insurance Coverage for People Under Age 65: 2016 to 2026* (CBO, March 24, 2016); and Congressional Budget Office, *Federal Subsidies Under the Affordable Care Act for Health Insurance Coverage Related to the Expansion of Medicaid and Nongroup Health Insurance: Tables from CBO's January 2017 Baseline* (CBO, 2017).

10 Internal Revenue Service, Rev. Proc. 2017-36 (IRS, 2017).

11 E. Saltzman and C. Eibner, "Insuring Younger Adults Through the ACA's Marketplaces: Options to Expand Enrollment," *To the Point,* The Commonwealth Fund, Dec. 16, 2016.

12 Ibid.

13 Arguably, it would make more sense to extend tax credits to lower-income individuals, rather than providing additional federal assistance to people with incomes above 400 percent of FPL. However, because extending tax credits to lower-income populations might cause some states to rescind Medicaid expansion, extending tax credits to lower-income individuals may be a less viable policy option than extending them to those with incomes above 400 percent of FPL.

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15 J. Liu and C. Eibner, *Extending Marketplace Tax Credits Would Make Coverage More Affordable for Middle-Income Adults* (The Commonwealth Fund, July 2017).

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17 Centers for Medicare and Medicaid Services, *Final HHS Notice of Benefit and Payment Parameters for 2016* (CMS, 2016).

18 Centers for Medicare and Medicaid Services, *Transitional Reinsurance Program: Pro Rata Adjustment to the National Coinsurance Rate for the 2014 Benefit Year* (CMS, June 17, 2015).

19 Specifically, we multiple the baseline employer mandate revenue by the number of employees at nonoffering firms with more than 500 workers divided by the number of employees at nonoffering firms with more than 50 workers.