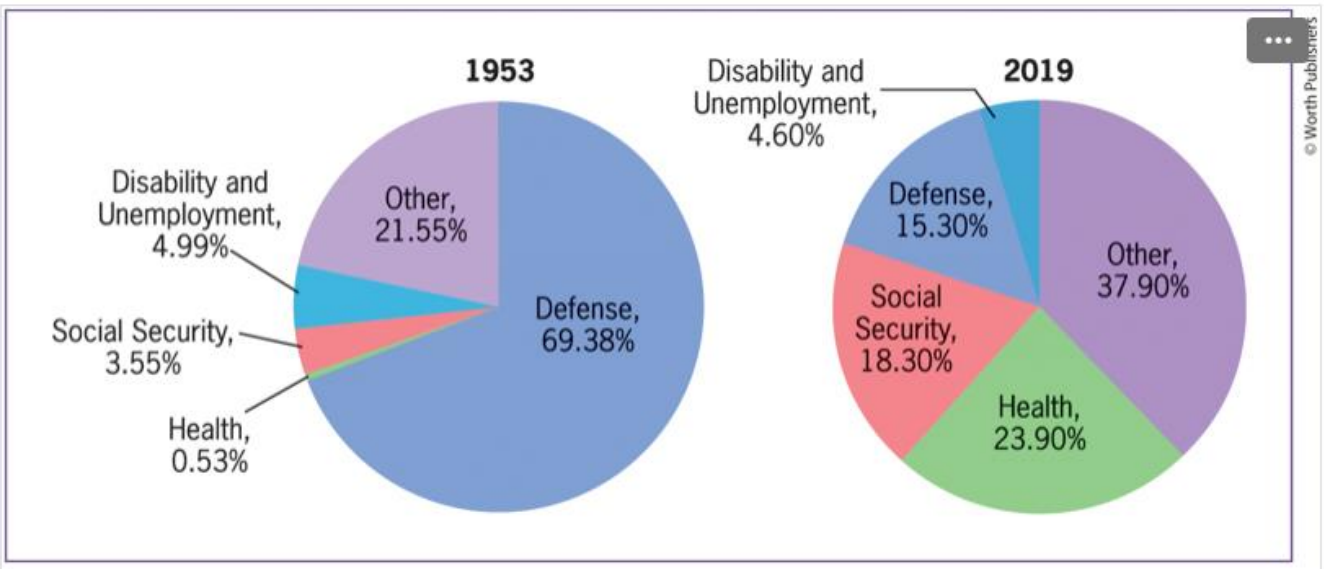

FIGURE 12-1 Government Spending by Function, 1953 and 2019 • Government today devotes a much larger portion of its budget to social insurance than it did nearly 70 years ago.

Data from: Office of Management and Budget (2014); Bureau of Economic Analysis (2021), Table 3.16.

TABLE 12-1 The Expected Utility Model

If Mimi ...	And Mimi is ...	Consumption (C)	Utility $\sqrt{C}$	Expected Utility
Doesn't buy insurance	Not hit by a car ($p = 99\%$)	$30,000	173.2	$0.99 \times 173.2 + 0.01 \times 0 = 171.5$
	Hit by a car ($p = 1\%$)	0	0	
Buys full insurance (for $300)	Not hit by a car ($p = 99\%$)	$29,700	172.34	$0.99 \times 172.34 + 0.01 \times 172.34 = 172.34$
	Hit by a car ($p = 1\%$)	$29,700	172.34	
Buys partial insurance (for $150)	Not hit by a car ($p = 99\%$)	$29,850	172.77	$0.99 \times 172.77 + 0.01 \times 121.86 = 172.26$
	Hit by a car ($p = 1,$)	$14,850	121.86	

Mimi has a choice over how much insurance to buy against the risk of getting hit by a car. This table shows the consumption and associated utility for the states of the world where Mimi is and is not hit by a car. Expected utility, the weighted average of utility in the two states of the world (weighted by the odds of each state of the world), is higher with the purchase of insurance.

TABLE 12-2 Insurance Pricing with Separate Groups of Consumers

Information	Pricing Approach	Premium per Careless (100 people)	Premium per Careful (100 people)	Total Premiums Paid	Total Benefits Paid Out	Net Profits to Insurers
Full	Separate	$1,500	$150	$\$165{,}000(100 \times \$1{,}500 + 100 \times \$150)$	$165,000	0
Asymmetric	Separate	$1,500	$150	$\$30{,}000(0 \times \$1{,}500 + 200 \times \$150)$	$165,000	$-\$135{,}000$
Asymmetric	Average	$825	$825	$\$82{,}500(100 \times \$825 + 0 \times \$825)$	$150,000	$-\$67{,}500$

If the insurer has perfect information about whether insurance purchasers are careful or careless (first row), then he will charge $1,500 to the careless and $150 to the careful, making a net profit of zero. If the insured know whether they are careless or careful, and the insurer does not, then the insurer may try setting separate premiums for the groups (second row) or one common premium for all individuals (third row). In either case, the insurer loses money due to adverse selection, so the insurer will not offer insurance, leading to market failure.

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