- Market volatility refers to market fluctuation. The volatility assumption is based on a review of historical monthly returns for each key index (e.g. S&P 500) over a period of at least ten years. Volatility represents the dispersion of historical returns compared to the average historical return (standard deviation) for each index. The assumption is 18% to 24%, varying by equity fund type; 5% to 7%, varying by bond fund type; and 0% to 1% for money market funds. These volatility assumptions are used along with the mean investment performance assumption to project future return scenarios.
- The discount rate is 5.75%, which is determined based on the underlying and projected yield of the portfolio of assets supporting the GMDB liability.
- The claim mortality assumption is 65% to 89% of the 1994 Group Annuity Mortality table, with 1% annual improvement beginning January 1, 2000. The assumption reflects that for certain contracts, a spousal beneficiary is allowed to elect to continue a contract by becoming its new owner, thereby postponing the death claim rather than receiving the death benefit currently. For certain issuers of these contracts, the claim mortality assumption depends on age, gender, and net amount at risk for the policy.
- The lapse rate assumption (full surrender of an annuity prior to a contractholder's death) is 0% to 11%, depending on contract type, policy duration and the ratio of the net amount at risk to account value.

Reserve Strengthening: In each of the three years presented, the Company completed its normal review of reserves (including assumptions), and recorded additional other benefits expense to strengthen GMDB reserves. The amounts and primary drivers of the reserve strengthening in each year were:

2012: Reserve strengthening of $43 million ($27 million after-tax) was primarily due to reductions to the lapse rate assumptions, adverse interest rate impacts, and, to a lesser extent, an increase in the volatility and correlation assumptions, partially offset by favorable equity market conditions. The adverse interest rate impacts reflect management's consideration of the anticipated impact of continued low short-term interest rates. This evaluation also led management to lower the mean investment performance for equity funds from 4.75% to 4.00% for those funds not subject to the growth interest rate hedge program.

2011: Reserve strengthening of $70 million ($45 million after-tax) was driven primarily by volatility-related impacts due to turbulent equity market conditions, adverse interest rate impacts, and adverse impacts of overall market declines in the third quarter that include an increase in the provision for expected future partial surrenders and declines in the value of contractholders' non-equity investments.

2010: Reserve strengthening of $52 million pre-tax ($34 million after-tax) was primarily due to adverse interest rate impacts, and to a lesser extent, an update to the lapse assumption for policies that have already taken or may take a significant partial withdrawal.

Activity in future policy benefit reserves for these GMDB contracts was as follows:

(In millions)	**2012**	**2011**	**2010**
Balance at January 1,	$ 1,170	$ 1,138	$ 1,285
Add: Unpaid claims	40	37	36
Less: Reinsurance and other amounts recoverable	53	51	53
Balance at January 1, net	1,157	1,124	1,268
Add: Incurred benefits	17	138	(20)
Less: Paid benefits	102	105	124
Ending balance, net	1,072	1,157	1,124
Less: Unpaid claims	24	40	37
Add: Reinsurance and other amounts recoverable	42	53	51
Balance at December 31,	$ 1,090	$ 1,170	$ 1,138

Benefits paid and incurred are net of ceded amounts. Incurred benefits reflect the favorable or unfavorable impact of a rising or falling equity market on the liability, and include the charges discussed above. Losses or gains have been recorded in other revenues as a result of the GMDB equity and growth interest rate hedge programs to reduce equity market and certain interest rate exposures.

The majority of the Company's exposure arises under annuities that guarantee that the benefit received at death will be no less than the highest historical account value of the related mutual fund investments on a contractholder's anniversary date. Under this type of death benefit, the Company is liable to the extent the highest historical anniversary account value exceeds the fair value of the related mutual fund investments at the time of a contractholder's death. Other annuity designs that the Company reinsured guarantee that the benefit received at death will be:

- the contractholder's account value as of the last anniversary date (anniversary reset); or
- no less than net deposits paid into the contract accumulated at a specified rate or net deposits paid into the contract.

The table below presents the account value, net amount at risk and average attained age of underlying contractholders for guarantees in the event of death, by type of benefit as of December 31. The net amount at risk is the death benefit coverage in force or the amount that the Company would have to pay if all contractholders died as of the specified date, and represents the excess of the guaranteed benefit amount over the fair value