How Are Disasters (Such as Hurricanes and Earthquakes) Treated in the National Accounts?

Does BEA provide an estimate of the effects of a disaster on GDP?

BEA is not able to estimate the effects of a disaster on GDP because the effects may occur with a lag, and they cannot be disentangled from the regular source data that BEA uses to prepare its estimates. For example, if consumer spending in Florida is reduced by a disaster, or if construction activity in Alabama is stimulated, these impacts will be reflected in the Census Bureau data on consumer spending and on construction activity across the nation that BEA uses to prepare the GDP estimates.

How is GDP affected by a disaster?

GDP is a measure of the Nation's *current* production of goods and services; as such, it is not directly affected by the loss of property (structures and equipment) produced in previous periods. GDP may be affected indirectly by the actions that consumers, businesses, and governments take in response to disruptions in production or to the loss of property, but these responses are not amenable to precise quantification; moreover, the responses may be spread out over a long period of time. For example:

- Rebuilding activity, which may occur over many months following a disaster, will typically be reflected in the regular source data used to estimate residential and nonresidential investment. There is no way to disentangle the disaster-related rebuilding from other construction activity.
- Tourism and other types of consumer spending may be canceled or postponed in the face of a disaster; whether canceled or merely postponed, the effects will be embedded in the source data that are used to estimate personal consumption expenditures. Again, there is no way to disentangle disaster-related spending from other consumer spending.

As a measure of the Nation's current production of goods and services, GDP includes the value of insurance services produced for policyholders; under a new methodology adopted in the 2003 comprehensive revision, the value of insurance services is not directly affected by the payment of benefits in the wake of a disaster. (See "How are insurance services measured in GDP?" below.)

How does a disaster affect personal income, profits, and gross domestic income?

Accidental damage to structures and equipment (except for consumer motor vehicles and consumer durable goods) is reflected in the national accounts by an increase in the consumption of fixed capital (CFC), which is an expense that is subtracted in the calculation of several types of income. As a result, these types of income are reduced by accidental damage.

In personal income:

- The destruction of *uninsured* dwellings and other structures and equipment that are owned by households or unincorporated businesses reduces rental income of persons and proprietors' income. (The destruction of *insured* structures and equipment also tends to reduce these incomes, but this effect is offset by the insurance benefits that are received.)
- Insurance benefits received by households as compensation for damages to motor vehicles or other consumer durable goods are included in "other current transfer receipts, from business (net)."

Other personal income components are affected by government responses to a disaster and by disruptions to normal production schedules:

- Disaster relief assistance from the Federal Emergency Management Agency (FEMA) is included in "personal current transfer receipts" and in subsidies for housing.
- To the extent that the regular source data that BEA uses to estimate the national income and product accounts do not fully reflect the impact of the disaster, BEA may make judgmental adjustments as appropriate. For example, wage and salary disbursements may be reduced by the disruption of work schedules and may be increased as a result of rescue and clean-up operations. If these changes are not fully reflected in the source data on employment, hours, and earnings from the Bureau of Labor Statistics monthly employment survey, adjustments will be incorporated in the estimates.

In corporate profits:

- The destruction of *uninsured* structures and equipment that are owned by corporations increases CFC and therefore reduces the profits of those corporations. (The destruction of *insured* structures and equipment also tends to reduce profits, but this effect is offset by the insurance benefits that are received.)
- The profits of property and casualty insurance corporations are reduced by the payment of benefits. However, to the extent that domestic corporations are insured by foreign insurance carriers, and to the extent that domestic insurance carriers are reinsured by foreign carriers, domestic profits are not reduced; instead, "business current transfer payments to the rest of the world (net)" are reduced to reflect the receipt of insurance benefits from the foreign carriers.

In summary, the increases in CFC and in business current transfer payments to persons (net) offset the decreases in domestic corporate profits, rental income of persons, proprietors' income, and business current transfer payments to the rest of the world (net). Thus, there is no net effect from these items on gross domestic income or on GDP.

How does a disaster affect foreign transactions and the current account balance?

To the extent that losses are insured (or reinsured) by foreign carriers, "current taxes and transfer payments to the rest of the world (net)" are reduced to reflect the receipt of above-normal insurance benefits from the foreign carriers. As a result, the balance on current account moves in a positive direction. Under the new treatment of insurance adopted in the 2003 comprehensive revision of the national accounts, disasters no longer directly affect the estimates of trade in services; instead, they affect the estimates of current transfer payments to the rest of the world, which is also a component of the current account balance. (See How are insurance services measured in GDP?)

How are insurance services measured in GDP?

In the 2003 comprehensive revision of the national income and product accounts, BEA adopted a new measure of insurance services. The measure of insurance that is included in GDP is an estimate of the value of the services provided by the insurance company to its policyholders. Insurance companies provide financial protection to policyholders through the pooling of risk, and they provide financial intermediation services through the investment of reserves that are held to help cover extraordinary losses. After accounting for investment income, insurance companies set premiums to cover the expected costs of providing the services, of settling claims, of maintaining reserves against future claims, and of purchasing reinsurance.

Therefore, services of the property-casualty insurance industry are measured as direct premiums earned plus "premium supplements"—that is, the expected investment income earned from the investment of reserves that are directly attributable to policyholders because of prepayment of premiums or accrual of benefits—minus normal losses incurred and dividends paid to policyholders. The normal losses are calculated on the basis of historical experience. Because the measurement of insurance services now uses normal losses rather than actual losses, the measure no longer exhibits large swings when disasters take place. Additional information is available from the following articles:

> Brent R. Moulton and Eugene P. Seskin, "Preview of the 2003 Comprehensive Revision of the National Income and Product Accounts: Changes in Definitions and Classifications," *Survey of Current Business* 83 (June 2003): 17-34.
>
> Baoline Chen and Dennis J. Fixler, "Measuring the Services of Property-Casualty Insurance in the NIPAs: Changes in Concepts and Methods," *Survey of Current Business* 83 (October 2003): 10-26.
>
> Christopher L. Bach, "Annual Revision of the U.S. International Accounts," *Survey of Current Business* 84 (July 2004): 60-62.