The Treatment of Disasters in the National Income and Product Accounts
Disasters affect economic activity

- Current production is affected
- Structures, equipment, and other assets are damaged
- Transactions, such as payments of insurance benefits or government disaster relief, take place
Impacts on current production

• The effects on GDP, GDI, and personal income (PI) are generally embedded in our source data

  – The effects are not separately identifiable

  – The effects may be spread out over a long period of time

  – Source data agencies (Census, BLS): data collection issues were generally minor
Insurance services in GDP (without disasters)

• Estimated as premiums less “expected losses”
  – Expected losses are a moving average of past actual losses
  – Mitigates large swings arising from variation in actual losses

• Actual less expected losses are recorded as current transfers in the current account

• Transactions are recorded in the current account
  – Included in GDP, GDI, PI
When a major disaster occurs

• Actual losses far exceed expected losses

• Disaster-related insurance payouts are not recorded as current income
  – Not recorded as current transfers for the claim holders
  – Not recorded as a charge against insurance companies’ current profits
  – Classified as capital transfers in the capital account

• Disaster losses are not recorded as depreciation (as a current expense)
  – Disaster losses are classified as “other changes in the volume of assets”
Why are disaster-related transactions and damages in the capital account?

- Capital losses and insurance payouts do not affect current production

- Removing losses and payouts from current accounts preserves their focus on major macroeconomic flows of ongoing business activity

- Depreciation (CFC) should reflect “normal” accidental damage, wear and tear, aging, obsolescence

- Insurance payments for disaster losses are not financed from current revenue of insurance companies

- Recipients generally use insurance payments to pay for rebuilding of lost assets (investment), not for current consumption

- Capital account provides a better picture of investment activity:
  - Funding for replacing capital assets aligned with capital investment

- NIPAs more in line with updated international guidelines (SNA 2008)
The definition of disasters in the NIPAs

- Property loss or insurance payouts exceed 0.1 percent of GDP

- Threshold is currently about $19 billion

- Hurricanes Harvey and Irma meet the threshold

- Hurricane Maria also damaged Puerto Rico and USVI
BEA publishes estimates of damages to fixed assets

• Based on publicly available estimates from the insurance industry and other sources
  — For example: AIR, Core Logic, FEMA, Insurance Information Institute, Moody’s, Morgan Stanley, RMS

• See Table 5.1 Saving and Investment by Sector
  — Table 5.1q (quarterly table) shows estimates at an annual rate (multiplied by 4)
Estimated damages to the stock of fixed capital

**Table 5.1. Saving and Investment by Sector**
[Billions of dollars]; Quarterly rates

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<td>58</td>
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<tr>
<td>Disaster losses</td>
<td>29.5</td>
<td>103.6</td>
<td>19.1</td>
<td>46.0</td>
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<td>92.3</td>
<td>19.1</td>
<td>38.3</td>
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<td>60</td>
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<td>Domestic business</td>
<td>17.4</td>
<td>45.0</td>
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<td>17.5</td>
<td>36.0</td>
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<td>Households and institutions</td>
<td>12.1</td>
<td>47.3</td>
<td>8.3</td>
<td>20.9</td>
<td>85.0</td>
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<td>62</td>
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<tr>
<td>Government</td>
<td>0.0</td>
<td>11.3</td>
<td>0.0</td>
<td>7.6</td>
<td>10.4</td>
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<td>63</td>
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<tr>
<td>Federal</td>
<td>0.0</td>
<td>0.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>64</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State and local</td>
<td>0.0</td>
<td>10.8</td>
<td>0.0</td>
<td>7.6</td>
<td>10.4</td>
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*Capital stocks (fixed assets)*

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<td>Total</td>
<td>35,681.5</td>
<td>39,294.7</td>
<td>45,856.4</td>
<td>48,806.0</td>
<td>62,080.5</td>
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<td>Private</td>
<td>27,741.6</td>
<td>30,609.2</td>
<td>34,833.9</td>
<td>36,284.1</td>
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<td>7,939.9</td>
<td>8,685.5</td>
<td>11,022.5</td>
<td>12,521.9</td>
<td>13,759.7</td>
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</table>

2004: Hurricanes Charley, Frances, Ivan, Jeanne
2005: Hurricanes Katrina, Rita
2008: Hurricane Ike
2012: Superstorm Sandy
2017: Hurricanes Harvey and Irma
Disaster-related insurance payments from private companies and government

• These payments are mostly for rebuilding, repair, and replacement of assets
  – From private insurance companies
  – From the federal government: National Flood insurance Program (NFIP)
  – From state governments: Florida Citizens Property Insurance Corporation (CPIC)

• BEA publishes estimates of disaster-related capital transfers
  – Based on publicly available estimates from the insurance industry and other sources
  – See Table 5.11U Capital Transfers Paid and Received, by Sector and by Type
Disaster-related insurance payments to and from the rest of the world

• These payments are recorded in both the International Transactions Accounts (ITAs) and the NIPAs
  — Capital transfers in both accounts

• The treatment of payments to Puerto Rico and the territories differs in the NIPAs and ITAs
  — NIPAs: The “U.S. estimates” cover the 50 states, DC
    • Puerto Rico is part of the rest of the rest of the world
  — ITAs: The “U.S. estimates” also include Puerto Rico and the territories
The territorial adjustment

• This adjustment is made to the ITAs to make their geographical coverage consistent with that of the NIPAs

• For the estimates of exports and imports for the NIPAs, the territorial adjustment....

  – Removes the flows between territories/Puerto Rico and the rest of the world that are recorded in the ITAs

  – Adds flows between the 50 states/DC and the territories/Puerto Rico that are not recorded in the ITAs
Territorial adjustment and insurance payments

• Hurricanes caused extensive damages to Puerto Rico and USVI

• NIPAs (after the territorial adjustment):
  – Include insurance payments from US to Puerto Rico and USVI (as a capital transfer to the rest of the world)
  – Exclude insurance payments from rest of world to Puerto Rico and USVI

• ITAs:
  – Exclude insurance payments from US to Puerto Rico and USVI
  – Include insurance payments from rest of world to Puerto Rico and USVI

• For details on the territorial adjustment, see table 43BU “Relation of Foreign Transactions in the NIPAs to the Corresponding Items in the ITAs”
Estimates of capital transfers from disasters, NIPAs

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<td>4</td>
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<td>4</td>
<td>Financial corporations</td>
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<td>6,978</td>
<td>16,550</td>
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<td>200</td>
<td>2,800</td>
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<td>19,000</td>
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<td>641</td>
<td>5,800</td>
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<td>22</td>
<td>Rest of the world</td>
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<td>6,170</td>
<td>7,668</td>
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<td>27</td>
<td>Financial corporations</td>
<td>945</td>
<td>188</td>
<td>398</td>
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<td>30</td>
<td>Nonfinancial corporations</td>
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<td>4,912</td>
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<td>3,039</td>
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<td>44</td>
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<td>9,285</td>
<td>13,533</td>
<td>37,234</td>
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<td>48</td>
<td>Rest of the world</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>20,561</td>
</tr>
</tbody>
</table>

Table 5.11U. Capital Transfers Paid and Received, by Sector and by Type

[Millions of dollars; quarterly rates]
Other BEA tools for assessing hurricane impacts

• Regional input-output modeling system (RIMS II)
  – Regional economic impact multipliers can be helpful in estimating the economic impact of hurricanes
  – Personal income, earnings, employment, GDP for affected areas

• Total requirements tables
  – Provide a way to examine supply chain relationships

• U.S. trade and balance of payments statistics