ISSUE BRIEF

The Realities of Federal Disaster Aid

The Case of Floods

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The Realities of Federal Disaster Aid

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Carolyn Kousky and Leonard Shabman[1]

Introduction

Both media accounts and political rhetoric surrounding disaster aid suggest that it is generous and that disaster victims receive substantial sums of money to help replace and repair damaged property. Headlines such as “Pa. Gets $420 M in Disaster Aid, Total Should Rise” (Associated Press 2011a) and news story leads such as “Vermont is expected to get a total of about $240 million in federal assistance to help recover from Tropical Storm Irene… more than $72 million has already been paid” (Associated Press 2012) suggest generous amounts of post-disaster aid. Government statements further perpetuate this idea. For instance, press releases issued by the Federal Emergency Management Agency (FEMA) tout the large amounts being spent—“Disaster Assistance for North Dakotans Nears $450 M” (FEMA 2011)—and politicians make broad statements about the impact of disaster aid—for example, “[victims] will have the federal help they need and deserve” (PRNewswire 2011) or “these funds bring meaningful relief and hope for the people” (Seward 2011).

Building on this perception of generous post-disaster grants, scholars and advocates often note that disaster aid causes a moral hazard problem, disincentivizing the purchase of flood insurance, discouraging the adoption of risk reduction measures, and encouraging people to locate in floodplains. For example, Wildasin (2008, 512) writes that the “assignment of disaster relief responsibility to the Federal government, coupled with significant subnational government responsibility for disaster avoidance policy, creates a potentially serious misalignment of incentives in the U.S. federation.” Lichtenberg (1994, 42) notes that “[f]ederal post-disaster aid

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creates enormous disincentives against purchasing insurance because it essentially provides insurance for free." Commenting on an estimate that uninsured losses from disasters range from 57 to 95 percent, Niehaus (2010, 94) writes: "[d]isaster assistance at this level is likely to have an important moral hazard effect on where people decide to locate and the amount of private insurance that they purchase."

With this issue brief, we demonstrate that disaster aid is not nearly as generous or as readily accessible as the headlines and scholarly papers often imply. Instead, there appears to be a gap between perceptions of disaster aid and the realities of such aid. The assertion that aid affects choices on floodplain occupancy and use or the purchase of flood insurance may be true, but this could be because of misperceptions about disaster aid as opposed to the generosity of the aid itself. We suggest, therefore, that federal risk communication programs should make greater efforts to describe the limits of aid. However, we cannot say whether communities, homeowners, and businesses that are made aware of the realities of aid would change behavior, since there are many other drivers of risk-related choices. The impacts of perceptions about aid are a question in need of empirical investigation, and we offer some preliminary hypotheses to guide that work.

We show that direct aid to reimburse for damages is limited and subject to many restrictions. Sometimes the popular press picks up on these limitations of disaster relief. For example, one *Wall Street Journal* story about hurricanes Irene and Lee discussed the bureaucratic red tape associated with receiving aid and offered more correct numbers on the amount of aid individuals can expect from FEMA: average FEMA checks are around $5,000, and the maximum receivable for total loss of a house in 2011 was $30,200 (Associated Press 2011b). Indeed, if a reader looked beyond the headline about Pennsylvania mentioned in the first paragraph, the article notes that 94,000 people registered for the aid, which would mean on average less than $4,500 per person (Associated Press 2011a). Most accounts also fail to mention the requirements that are coupled with receiving aid, particularly concerning insurance, and the restrictions on who can receive it.

In the sections that follow, we first provide some background on the federal disaster relief process, and then present detailed information on the post-disaster aid available to individuals, businesses, and local governments. We then offer a brief example of how the realities of federal aid might change the way scholars and practitioners think about the trade-off between aid and insurance. We conclude that closing the gap between the perception and realities of federal aid would be a useful focus of policy, but caution that it is not possible to predict ex ante the impacts this would have on individual decision making. Individual risk management decisions depend not only on one's perceptions of aid, but also on one's expectation of damages sustained, the likelihood of a flood event, one's attitudes toward risk, budget constraints, and other variables.

Our discussion does suggest that new empirical research on the actual impacts of federal aid on decision making is needed in light of the facts we present here.

Background

Although Congress appropriated funds for disaster relief as early as 1790 (Dauber 2005), before 1950, all disaster relief was considered on a case-by-case basis. In 1950, this began to change with the passage of the Disaster Assistance Program. This act gave the president the authority to issue emergency and disaster declarations for events that overwhelmed state and local resources. Current procedures for federal disaster relief are outlined in the 1988 Robert T. Stafford Disaster Relief and Emergency Assistance Act.

Releasing federal funds for disaster aid is a multistep process. After a disaster occurs, a governor[2] may request a declaration from the president. Before making a request, the governor must have activated the state emergency plan and ensured that state and local action is underway (Beauchesne 2001). FEMA then undertakes a rapid assessment of the impact of the disaster and makes a recommendation to the president. The president then either issues an emergency declaration, a disaster declaration, or no declaration.[3] For emergencies, federal response is limited to immediate and short-term assistance, and expenditures by FEMA may not exceed $5 million (Government Accountability Office [GAO] 2001). Disaster declarations have no spending limits. FEMA is the federal agency at the heart of federal relief. Once a disaster declaration is approved, FEMA distributes money from the Disaster Relief Fund and coordinates the federal response. Each year, funds are appropriated into the fund. Supplemental appropriations may add to the fund and could also direct funds to other agencies to disburse to the affected areas.

The number of disaster declarations has been increasing over time (see Figure 1). According to public data from the Public Entity Research Institute available on their website, 2,363 requests for a Presidential Disaster Declaration were made—including 1,362 for floods—between 1953 and

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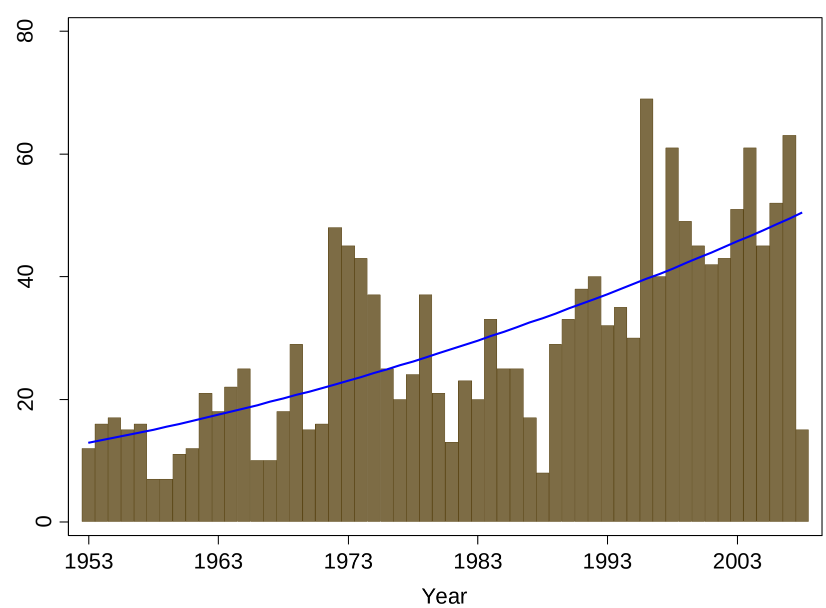
[2] In addition to the governors of all 50 states, the mayor of Washington, DC, and the heads of U.S. trust or commonwealth territories may also request declarations. For ease of discussion, we will simply use the term "governor."

[3] The Stafford Act requires that, to receive federal funds, a disaster must be judged to exceed state and local capacity to respond. It also, however, specifically prohibits funding being allocated based on "an arithmetic formula or sliding scale based on income or population." To find middle ground, in 1999, FEMA published criteria that it would use in recommending whether or not to issue a declaration. To consider whether a disaster exceeds state capacity, FEMA considers per-capita damages and total statewide damages from the preliminary assessment. In 1999, it set a trigger of $1 for the former number, to be adjusted for inflation annually, and $1 million for the second, but not adjusted for inflation (GAO 2001). Beyond those financial measures, FEMA considers five other criteria before issuing its recommendation (see FEMA 1999). First, FEMA considers how concentrated damages are at a local level. Second, FEMA reduces the amount of anticipated assistance if more insurance is in-force in a state (or if more insurance should have been in-force based on current laws and regulations). Third, if a state has adopted mitigation efforts, such as a building code, FEMA is more likely to grant assistance even if damages fall below the triggers above. Fourth, FEMA considers whether there have been many recent disasters with which the state has had to cope. And finally, FEMA examines whether relief from other federal agencies, such as the U.S. Department of Agriculture or the Federal Highway Administration, would be more appropriate.

2008. Out of the 2,363 requests, 729 were denied; of those denied, 305 were for floods. The amount spent per declaration has also increased, but less steeply. Of note, the spending in 2005 for Hurricane Katrina vastly overwhelmed the spending for any other disaster.

The increase in the number of disaster declarations may contribute to a belief that disaster aid is generous and forthcoming, as it suggests that aid may be mentioned by the press and political leaders more frequently. Much disaster spending is focused on emergency response, whereas in this issue brief we are focused on grants given to individuals, businesses, or local governments to help compensate them for damages sustained. As seen in the next section, even with more declarations being issued, the amount of aid an individual or business can receive is quite limited. An analysis of federal disaster spending between 1975 and 1994 found that most disaster losses were for events too small to qualify for a declaration and most damages were not insured, thus forcing individuals and businesses to bear the cost of these events (Mileti 1999, 66). This may be changing slightly with increases in declarations, but the total individuals can receive is still capped.

Figure 1. Number of Declarations by Year with Trend Line



Source: Created by authors with data from the Public Entity Risk Institute, available for download from their website (www.riskinstitute.org).

The Facts on Federal Post-flood Disaster Aid

As already stated, we do not address emergency response spending, but instead focus on grants to individuals, businesses, or local governments to help with repair and rebuilding. FEMA is the primary agency that provides disaster relief. In addition, relief is provided by the U.S. Department of Housing and Urban Development (HUD) and the Small Business Administration (SBA). In some disasters, other agencies may receive relief funding (e.g., the U.S. Department of Transportation has a Highway Emergency Relief fund to cover the repair of roads and federal highways, and the U.S. Army Corps of Engineers has a program [84-99] to rebuild damaged levees), but we focus on FEMA, HUD, and SBA as they are responsible for the bulk of spending. We discuss aid from each of these three sources in turn.[4] The overall conclusion from this examination of the relief available is that it is relatively small and certainly does not make people whole after devastating events. It is also coupled to flood insurance and other requirements.

FEMA

FEMA provides disaster relief through two programs: the Individual and Households Program (IHP) and the Public Assistance Program. The IHP provides grants to individuals for either housing assistance (HA) or other needs assistance (ONA). HA can be used for repair and rebuilding or to cover the costs of temporary housing. Grants are limited to $31,400 (in 2012 dollars) per person or household; this number is indexed to inflation. The average aid for repair of a damaged home is just over $4,000 (McCarthy 2010). Amounts given in any category are based on an inspection by FEMA of the damage and work necessary to make a home habitable. It appears that for large flood events (and/or areas with higher housing costs) the caps on aid will not fully compensate people for disaster losses, although it might for small levels of damage. ONA can be used for replacing personal property, transportation, medical costs, or funeral expenses. States must match 25 percent of ONA funds and share in administration of the program. Other FEMA programs provide disaster housing, disaster unemployment assistance, disaster legal assistance, and crisis counseling. All of these funds are available only in presidentially declared disaster areas.

Eligibility rules apply to individual assistance, as outlined in FEMA's (2008) booklet, *Help after a Disaster: Applicant's Guide to the Individuals & Households Program*. FEMA stresses that the IHP is not designed to restore damaged property to pre-disaster conditions, but only to make houses safe and inhabitable. The program does not cover losses that are covered by insurance. It does not cover business-related losses. Applicants for the IHP may need to show that they applied for an SBA loan and were rejected, as that is often considered the first line of help. In addition, the applicant must demonstrate that (a) the damage is not covered by insurance, (b) he or she is a U.S. citizen (or qualified alien), and (c) the property is his or her primary residence. After an application for aid, an inspector will visit the property to confirm facts before aid is disbursed to the individual. The aid is tax free and not counted as income.

[4] Our description of these programs has been informed by the websites and written materials publicly available from the agencies themselves.

Notably, if the applicant lives in a 100-year floodplain (referred to by FEMA as a Special Flood Hazard Area) and in a community that does not participate in the National Flood Insurance Program (NFIP), IHP aid will *not* be available to cover flood damage. This is to encourage NFIP participation by communities (more on the NFIP below). The applicant could, however, still potentially qualify for rental assistance or for coverage for items that are specifically excluded from NFIP policies, such as septic systems and health expenses related to the disaster. Further, for homeowners located in 100-year floodplains in NFIP participating communities, the purchase of a flood insurance policy is a requirement to receive aid. Even homeowners who had thus forgone insurance would be required to purchase a policy post-disaster; indeed, FEMA may purchase it for them with ONA funds.

Disaster aid can be disbursed up to 18 months from the date the disaster declaration is made. After 18 months, FEMA halts payments, and, if individuals continue to inhabit FEMA-provided disaster housing beyond the 18 months, FEMA begins to charge rent, which can be garnished from individuals' social security if they fail to pay (Rice 2012). This is intended to ensure that individuals do not take advantage of federal relief and to provide an incentive for people to get back on their feet and not continue to rely on the federal government. But some argue that it is unfair to low-income homeowners or those who face massive losses from a disaster.

Public Assistance Program grants are provided to local governments in seven categories: debris removal; emergency protective measures; roads and bridges; water control facilities; building and equipment; utilities; and parks, recreational, and other items. To receive funding, the repair work to be done must be (a) required as a result of the disaster, (b) located in a designated disaster area, (c) done in a certain time frame post-disaster, and (d) the legal responsibility of the applicant. If another federal agency has authority to repair facilities, FEMA will not provide funds to do so. Costs must be "reasonable and necessary" to do the work and must comply with local, state, and federal procurement policies. There is a 25 percent matching requirement, but the president can waive it. The state usually decides how this 25 percent is split between the state and the local community. Further, if the damage was insurable (meaning that the damage was to buildings, contents, vehicles, or equipment), flood insurance must be purchased and maintained as a requirement of the aid, regardless of whether the property was in the 100-year floodplain. (The required insurance must be to cover the type of damage sustained, so if a public building sustained earthquake damage, earthquake insurance would be required, and for floods, flood insurance is required.) A Public Assistance Coordinator works with local governments to help them through the steps necessary to obtain funding.

HUD

HUD offers two primary sources of disaster relief. The first is the Mortgage Assistance Program. HUD insures mortgages made by qualified lenders to victims of a major disaster who have lost their homes and are in the process of rebuilding or buying another home. This program provides insurance to homeowners in a declared disaster area to help them qualify for loans for a principal residence that they may not otherwise be able to obtain. The insurance is not free; lenders collect an upfront payment for the insurance, as well as monthly premiums. The Federal Housing Administration (FHA) restricts the types of fees lenders can charge borrowers and limits the amount of mortgage that can be insured. The FHA limit ranges from $200,160 to $362,790.

Second, HUD offers aid to communities through the Community Development Block Grant (CDBG) Program to help them recover from a presidentially declared disaster. Although the CDBG Program is a non-disaster program, it has historically been used to funnel relief money following a disaster, in part because Congress views it as a convenient, already established vehicle to disburse funds. The grants are used to help rebuild the affected areas and provide seed money to start the recovery process. Allocations are made by a formula that considers disaster recovery needs unmet by other federal disaster assistance programs. Eligible activities for funds include housing, economic development, clean-up, infrastructure, and the prevention of further damage to affected areas. Following the 1993 floods on the Missouri and Mississippi River systems, CDBG funds were used in combination with funds from FEMA's Hazard Mitigation Grant Program to acquire floodplain property and convert it to open space (Boyd 2010). When used as an emergency program, many statutory and regulatory constraints on the use of CDBG funds are waived, such as the requirement that a certain percentage of funds help low- or moderate-income households, although four provisions are generally not waived: nondiscrimination, environmental review, labor standards, and fair housing (Boyd 2010). CDBG funds can be used to fill in gaps to local governments for disaster relief costs not covered by FEMA or SBA (Boyd 2010).

CDBG programs have been used to provide direct grants to individuals only twice: first, in New York City after 9/11 as an incentive for people to stay in the city, and second, in Louisiana and Mississippi following Hurricane Katrina (GAO 2009). This type of compensation is not generally allowed with CDBG funds unless the Secretary of Housing and Urban Development grants a statutory waiver (GAO 2009). In New York, renters and owners in certain lower Manhattan neighborhoods could receive a grant to cover up to 30 percent of their housing costs if they agreed to stay in the location for two years (Boyd 2010). Louisiana at first tried to tie the disbursement of CDBG funds for individuals to their choice to remain in Louisiana and rebuild. This, however, triggered the need for costly environmental reviews of each site and thus ultimately forced Louisiana to simply distribute grants not tied to rebuilding (GAO 2009). Mississippi began with a direct compensation program not tied to immediately rebuilding. Both states used the majority of their CDBG funds for these housing programs for individuals, spending a smaller percentage on economic development, repairing infrastructure, and other programs. In Louisiana, the Road Home Program, which was the vehicle to use the CDBG funds, put a cap of $150,000 on grants to each homeowner, penalized homeowners 30 percent of their grant if they were not carrying homeowners insurance and if they were not carrying flood insurance but were living in a 100-year floodplain at the time of Katrina, and required that all rebuilding comply with FEMA guidance regarding base flood elevations (GAO 2009). This amount of direct aid to individuals following Hurricane Katrina is unprecedented and demonstrates the enormity of the event. For smaller disasters, individuals should not expect grants above the FEMA individual assistance limits.

SBA

SBA has a disaster loan program available for homeowners and businesses in a presidentially declared disaster area. The program is designed to fund rebuilding and recovery efforts by homeowners, renters, businesses of all sizes, and nonprofit organizations. SBA disaster loans have lower interest rates and longer terms than those offered by conventional lenders. SBA offers home and personal property loans, business physical disaster loans (for damaged property), business economic injury disaster loans, and military reservist economic injury loans. In presidentially declared disaster areas, renters and homeowners can apply for loans of up to $40,000 to replace contents, and homeowners can apply for up to $200,000 to replace a primary residence or to repair it to its pre-disaster state. Upgrades are allowed with the loans only if they are required by a building code. Loans may be increased by 20 percent, however, if used to make improvements to the structure that would make it less at risk of damage in a future event. Secondary homes and vacation homes are not eligible for loans.

Recipients of SBA loans located in 100-year floodplains are required to carry flood insurance for the life of the loan. If an applicant was required to have purchased flood insurance, but did not, SBA will not make a loan.

Businesses in declared disaster areas can apply for up to $2 million to repair or replace property or equipment. Again, loans can be increased by up to 20 percent for mitigating activities. Businesses can also apply for economic injury loans if they cannot make business payments because of a disaster, regardless of property damage (including economic injury because an essential employee was called into duty). This is for businesses unable to obtain credit elsewhere.

SBA makes disaster loans directly, with no financial intermediary. On average, the agency makes disaster loans totaling approximately $1 billion each year and has an active portfolio of about $8.4 billion.

Example: Federal Post-disaster Aid versus Flood Insurance Purchases

As mentioned in the introduction, academics have postulated that the prospect of free federal aid after a flood event might deter some homeowners from purchasing flood insurance. We explore the trade-off between aid and insurance in more detail in this section by explicitly comparing what an individual, business, or local government can receive in post-disaster aid from the federal government with what they could receive as a payout from a flood insurance policy. We do this by analyzing a few simple scenarios, presented below. We assume that the flood is large enough to trigger a presidential disaster declaration and the aid that accompanies such a declaration. We look exclusively at the aid versus insurance question and so focus on direct damage to a structure and its contents. We also assume that the damaged sustained is substantial. Given the caps on direct aid by FEMA discussed above, if disaster damages were significantly smaller, it would make aid look more attractive over insurance. FEMA and other organizations provide aid for things such as health expenses, rental income, and so forth following a disaster, but we do not address that here.

A NOTE ON FLOOD INSURANCE

Flood insurance is largely not available privately, but is available for purchase through the NFIP, which Congress established through the National Flood Insurance Act of 1968. The NFIP was intended to address the unavailability of flood insurance from private insurers, provide an alternative to federal disaster assistance, and create incentives for local governments to adopt floodplain management regulations. When communities agree to participate in the program, they must adopt minimum floodplain regulations; in exchange, residents can purchase insurance policies. However, for property owners in the FEMA-designated 100-year floodplain with a loan from a federally insured lender, the purchase of flood insurance is mandatory.

NFIP premiums are set based on mapped flood zones. Rates vary based on these flood zones as well as a few characteristics of the structure, such as whether it has a basement. In participating communities, structures in 100-year floodplains built before flood insurance rate maps (FIRMs) were prepared for the area (so-called "pre-FIRM properties") are charged discounted insurance rates, whereas new construction is charged actuarial rates. The discounts are set such that the combined revenue from all policies sold is enough to cover losses from the "average historical loss year." Structures outside of 100-year floodplains are also charged actuarial rates. A special lower-cost policy is available for properties outside of 100-year floodplains with a low loss experience.

In participating communities, NFIP insurance is made available (with limited exceptions) for residential structures and their contents, business structures, agricultural structures,[5] structures

[5] Note that the NFIP does not insure crops; crop insurance is available from the U.S. Department of Agriculture.

occupied by churches and nonprofit organizations, and structures owned by state or local governments. Eligible structures must have at least two solid walls and a roof, be principally above ground, and not entirely over water. Homeowners can insure buildings for up to $250,000 and contents for up to $100,000, whereas businesses can insure each building and its contents for up to $500,000. Deductibles vary by policy type. For Preferred Risk Policies (available to properties in lower-risk areas with a minimal loss history), the deductibles for building and contents coverage are $1,000 each. The standard deductible is $1,000 for post-FIRM properties and $2,000 for pre-FIRM properties. Higher deductibles are available.

CASE 1: HOMEOWNERS

Consider a homeowner located just outside of the 100-year floodplain.6 Assume that the home is worth $250,000. It sustains $75,000 in damage and $25,000 of damage to contents. We examine three scenarios for individual homeowners.

(1) The homeowner has purchased sufficient NFIP coverage for the home and its contents.

Assume that the homeowner is in a NFIP-participating community and insures the home for $150,000 and the contents for $50,000. Because she is located outside of the 100-year floodplain, the homeowner will pay $1,216 per year for the combined building and contents coverage if she does not have a basement and $1,450 if she does.[7] In this case, post-flood, the homeowner receives $75,000 from the NFIP for damage to the home and $25,000 for contents damage, minus the deductible of the policies, which we assume to be $1,000 each for building and contents. The homeowner receives a total, then, of $98,000. The homeowner may be eligible for FEMA aid to cover the deductible. In this case, the homeowner will have been paying a yearly fee for insurance, but between the NFIP payments and FEMA aid, could be 100 percent compensated for all damaged sustained.

(2) The homeowner has not purchased insurance, but is in a community that participates in the NFIP.

If the homeowner is in a community that participates in the NFIP, members of that community are eligible for FEMA aid. In this case, the homeowner could receive the maximum amount of FEMA aid of $31,400 (in 2012 dollars) to rebuild her home and replace the contents; but, on average, such a homeowner will receive less. This aid is available only for primary residences of U.S. citizens. The home will be inspected by FEMA, and aid will be given

[6] We do not focus on policies within the 100-year floodplain because we do not wish to discuss the mandatory purchase requirement, but simply to examine the payouts between insurance and aid when insurance purchases are fully voluntary.

[7] Full rate tables are in the May 2012 *Flood Insurance Manual* available for download from the FEMA website. We use the manual to calculate all rates in this Issue Brief. Rates per $100 dollars of coverage are lower for building coverage in excess of $60,000 and contents coverage in excess of $25,000.

only to make the home safe and livable again. Money will not be given to improve the home above pre-disaster condition. In this case, if the homeowner gets the full $31,400, she will pay out-of-pocket $68,600 for unreimbursed damages.[8] She will have saved herself the yearly premium payments to date, but may be required to purchase a policy when she receives the aid and as a condition of that aid. A portion of ONA can be withheld to make this purchase on behalf of the homeowner for the first few years post-disaster.

The homeowner may also apply for an SBA loan (indeed, FEMA may actually require this over receiving aid if the homeowner is eligible.) If the home is the homeowner's primary residence, she could receive a favorable loan to cover all repairs. Had the homeowner been living in the 100-year floodplain without insurance, SBA loans would not be available.

Assuming that the home is a primary residence and that the homeowner is low-income, the homeowner could obtain insurance for a private loan through FHA's Mortgage Assistance Program. The insurance is not free; lenders collect an upfront payment for the insurance, as well as monthly premiums. The limit on these loans ranges from $200,160 to $362,790 to ensure that the program is serving low- and moderate-income individuals.

(3) The homeowner has not purchased insurance and is in a community that does not participate in the NFIP.

In this case, the homeowner is not eligible for FEMA grants. She may qualify for coverage from FEMA for items not covered by flood insurance, such as septic systems. Here, the homeowner will be out the full $100,000 of damages (unless some portion of the $25,000 of contents damage is for items not covered by insurance, in which case she could receive a small amount of aid for these items).

Again, the homeowner could, in this case, apply for an SBA loan. If this home is her primary residence, she could receive a favorable loan to cover all repairs. She will not receive a loan if the home is not her primary residence.

CASE 2: BUSINESSES

Consider a business outside of the 100-year floodplain that has a building worth $250,000 and contents worth $250,000. Assume that the structure and contents are a total loss. We consider two scenarios.

[8] Note, as already stated, in these scenarios we are considering high amounts of damage. Most flood claims would be quite a bit less than this as most flood events would be less severe.

(1) The business has purchased sufficient NFIP coverage for the structure and its contents.

Businesses can insure up to $500,000 for a building and $500,000 for contents under the NFIP. Rates for nonresidential contents coverage depend where the contents are located (e.g., a basement, first floor, higher floors, a combination, and so on). We will assume that the contents are on the first floor, but that this floor is above ground and the building has no basement. In this case, the yearly premium for the business would be $3,848. If the business purchased this coverage, then, post-flood, it will be reimbursed the full $500,000 of flood damage, minus the deductible. The deductible, however, can be reimbursed by FEMA aid. The business, in this case, is made completely whole for the damages, but is out the yearly premiums.

(2) The business has not purchased flood insurance.

In this case, the business can apply to the SBA for a loan because it was not required to have purchased insurance (had it been in the 100-year floodplain without insurance, it would be ineligible). The business will receive a discounted rate if approved for the loan.

CASE 3: LOCAL GOVERNMENTS

Here, we consider a police station that has a building value of $400,000 and has contents valued at $250,000. The flood damages are $150,000 to the property and $100,000 to contents. A road is damaged from the flood and needs to be repaired. Also, the city hall sustains $200,000 of damage. The police station is insured under the NFIP, but the city hall is not. All structures are outside of 100-year floodplains. We consider the costs for each facility.

(1) Damage to the road.

The road is uninsurable and FEMA covers all "reasonable costs" within their 75 percent share to completely repair the road. The local government will thus receive between 75 and 100 percent of the repair costs, depending on how the state and local government split the cost share. They may also receive CDBG funds to cover the cost share or to pay for road rebuilding if they do not receive such aid from FEMA. It is also possible that the U.S. Department of Transportation would provide funds for repairing the road.

(2) Damage to the insured police station.

As with other structures, public buildings and contents can be insured up to $500,000 for the building and $500,000 for contents. For a policy of $400,000 building coverage and $200,000 contents coverage for a building that has no basement and contents on floor one above ground level, the premium would be $3,958. In this case, the local government receives the payout for damage from the NFIP, assumed here to be a total of $250,000 minus the chosen deductible. FEMA will cover any "reasonable costs" including the deductible and damage in excess of available coverage limits. In this case, the local government will receive 75 percent of the deductible (assume it is $2,000, so they receive $1,500) plus $248,000 from the NFIP. CDBG funds could potentially cover the remainder.

(3) Damage to the uninsured city hall.

If the local government has chosen to forgo insurance, FEMA will provide aid because the city hall is outside the 100-year floodplain. Had the city hall been uninsured within the 100-year floodplain, the city would not receive aid. The local government will receive 75 percent of the damages. If the state covers some of the 25 percent cost share, the city could receive more. Assuming no state aid, the local government will thus receive $150,000. Because the city hall could have been insured and damages are above $5,000, FEMA will require the local government to purchase and maintain insurance on the city hall as a condition of the aid. This is true whether or not the property is within the 100-year floodplain. CDBG funds could be allocated to them to cover the damage.

Conclusion

Our analysis challenges the widespread perception that federal disaster aid is extremely generous to individuals, businesses, and local governments. Disaster aid to individuals is capped at just over $30,000 (adjusted for inflation), and many requirements are in place to ensure that individuals do not use this aid to substitute for insurance or mitigation activities, or to improve their dwelling post-disaster. Even for victims of Hurricane Katrina, where an unprecedented amount of relief was given to individuals in Louisiana and Mississippi, a post-event survey of a sample of individuals found that only a quarter of them cited a government agency as providing the most assistance with recovery and rebuilding (Chappell et al. 2007). Businesses and individuals do have access to post-disaster loans at a low interest rate but those loans are not available to those who had been required to purchase insurance but failed to do so. The difference between the rate on the SBA loans and that in the private market may represent a substantial federal payment, but it is far from free dollars for all repairs. Local governments will probably receive funds for infrastructure damage but may not get compensated for properties they could have insured but did not. Of course, these statements only govern disasters for which a presidential declaration is made. For the bulk of smaller-scale events, the federal government does not cover any of the damage.[9]

[9] There are a few sources of aid that we have not addressed. For example, individuals can write off disaster damages on their tax returns. Still, our point remains that (a) a gap probably exists between the perception of the amount of this aid and

Recently, federal agencies (FEMA, the Corps of Engineers, the National Oceanic and Atmospheric Administration, and others) have made a significant commitment to flood risk communication. These efforts have been endorsed and encouraged by states, nongovernmental organizations, and academic articles calling for the improved communication of flood risk. The premise is that improved knowledge of the flood risk will lead to more informed decisions about floodplain occupancy and use and the adoption of risk reduction and management actions, including the decision to purchase flood insurance. We endorse the need for continually increasing knowledge of flood risk.

However, the perceived damages from flooding include not only the likelihood and consequences of the flood event itself, but also the expectations of disaster aid. Our argument is that limitations on disaster aid are not widely understood by the public or the research community and that those limitations must be part of any flood risk communication program.

We are not certain that improved understanding about the aid and insurance programs would lead to dramatic changes in decisions to locate in flood-prone areas or increase the purchase of flood insurance. Many other factors drive decision making apart from perceptions of disaster aid (Shabman et al. forthcoming). And it is possible that some individuals and businesses have a good understanding of the aid they could receive. That could explain why some empirical examinations of the issue found—in contrast to the arguments made in the introduction—that homeowners in flood- and earthquake-prone areas did not expect to receive aid after a disaster (Kunreuther et al. 1978; O'Grady and Shabman 1994). These studies are now dated because aid has been increasing in recent decades and so too may have expectations for aid. The impact of perceptions of aid and of an increased understanding of the limits of aid on the decisions made by individuals, businesses, and local governments should be treated as hypotheses in need of new and rigorous empirical research.

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the realities of it and (b) rigorous empirical work is needed on the influences of these sources of aid as their impact on decisionmaking cannot be assumed.

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