

# **The Global Financial Crisis**

## **Module 9 The Common Causes of Financial Crises**

### **01 United States Financial Capacity**

## Money in the Window



March 2014

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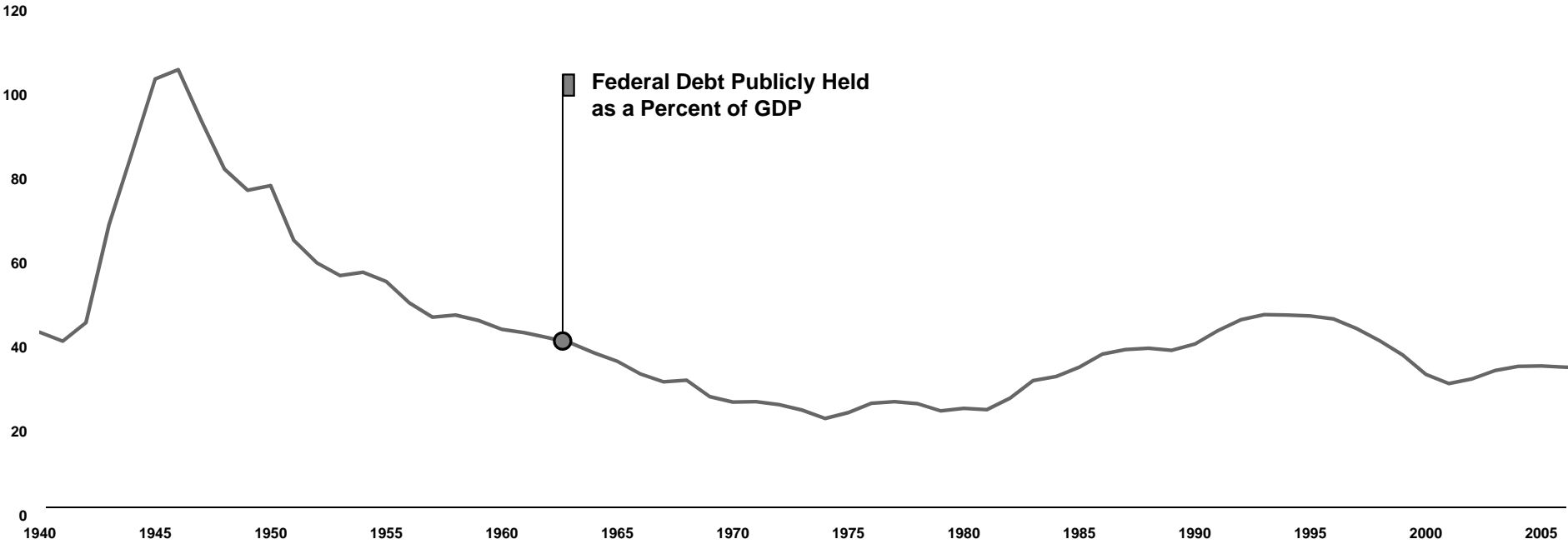
Bank in Yancheng, China

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Stacks of money behind teller window  
to try to calm people who are rushing to  
make withdrawals

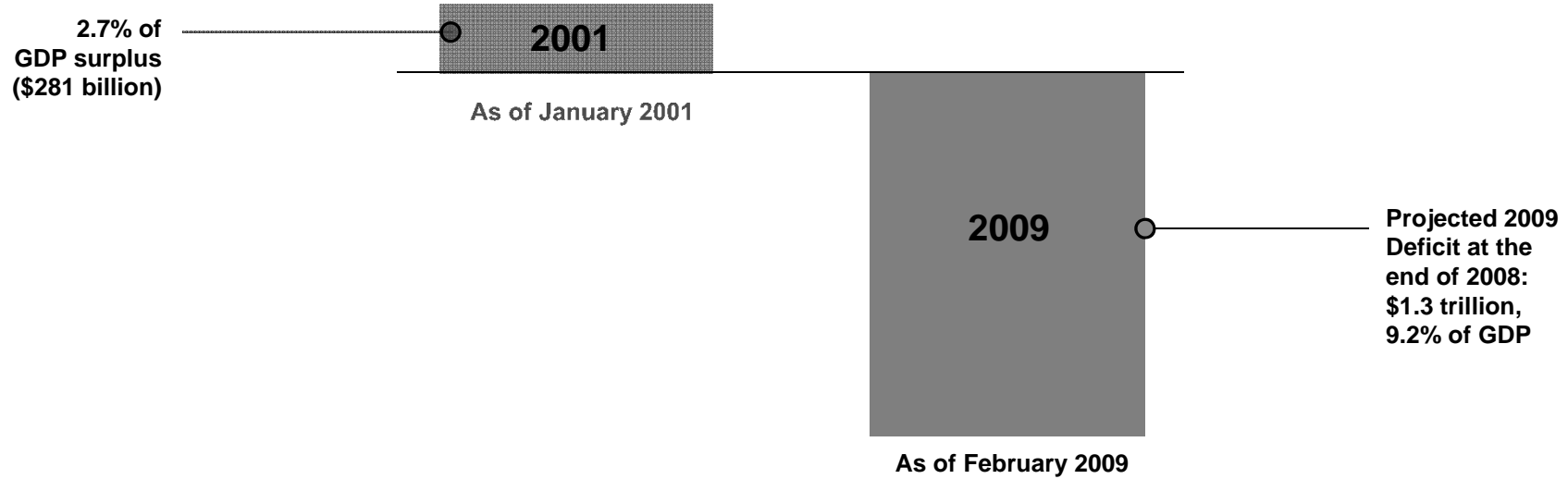
# Financial Capacity

Our overall public sector debt burden was low, but should have been lower



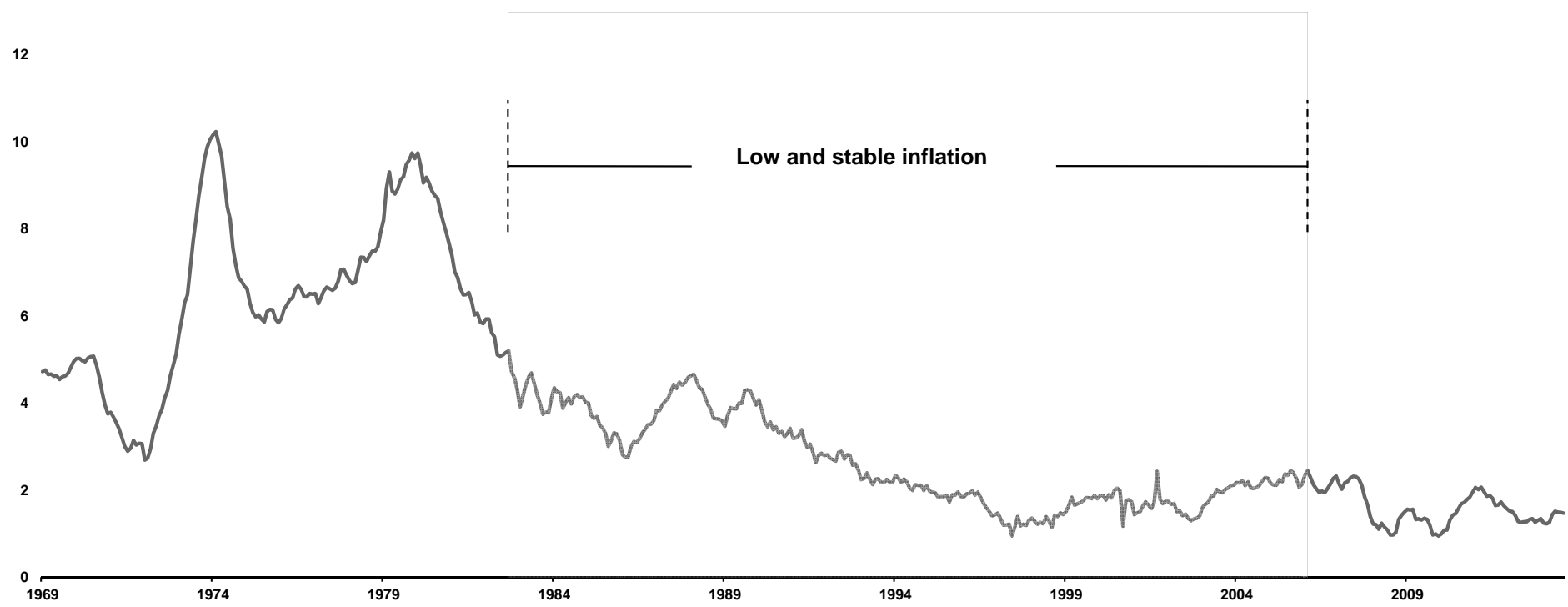
# Financial Capacity

Deficit expanded dramatically as a share of GDP



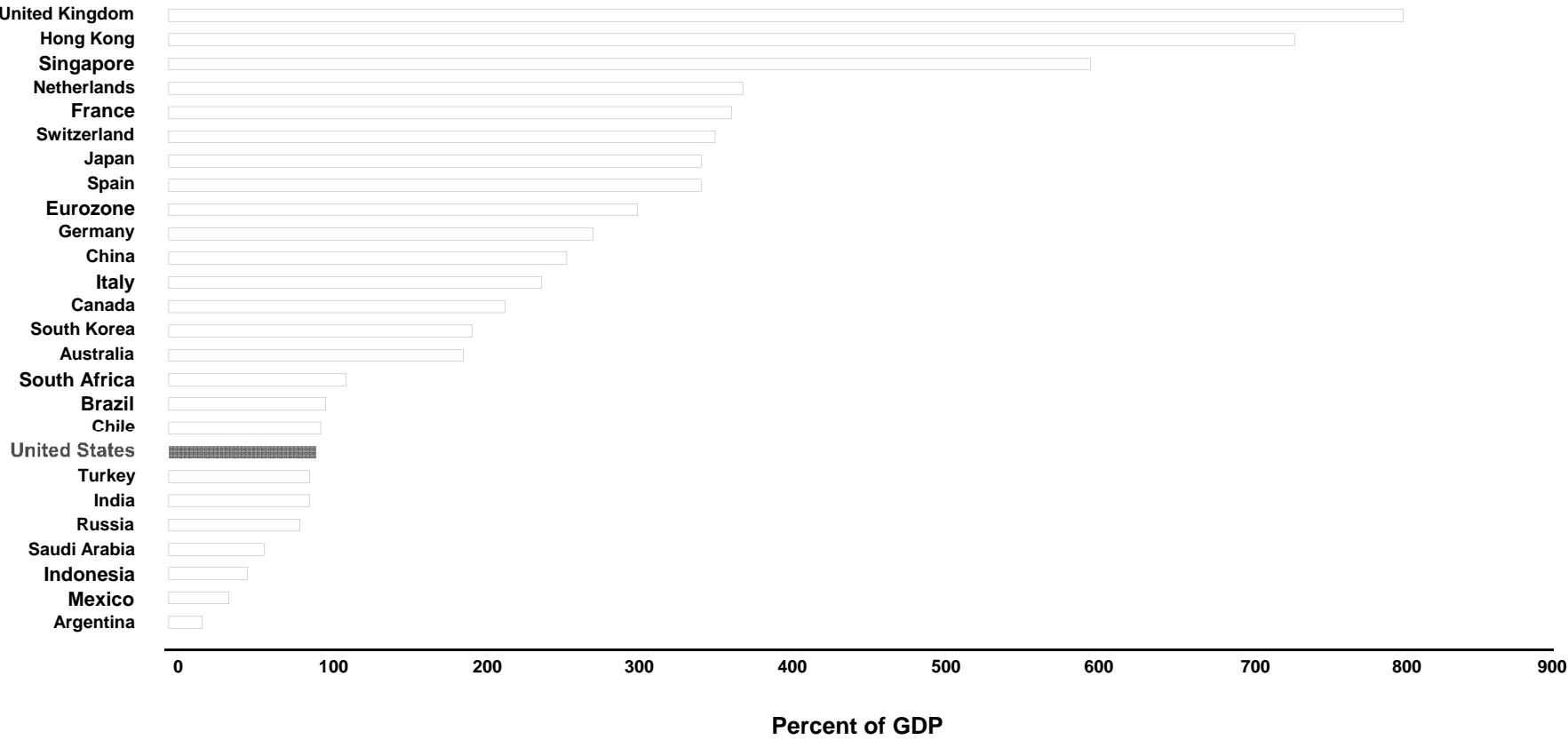
# Financial Capacity

Monetary policymakers' credibility for inflation-fighting was high



# Financial Capacity

The overall size of the banking system relative to national income was small



## **Weak Fire Fighting Tools: Capital and Resolution**

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### **Capital**

**No Treasury, FDIC, or Fed authority to inject capital**

### **Resolution Authority**

**FDIC could safely wind down failing banks but  
could not wind  
down complex banks or shadow banks**

## **Weak Fire Fighting Tools: Liquidity**

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### **Existing**

**Discount window lending to commercial banks**

### **Emergency Authorities**

**13(3) authority to lend to non banks in “unusual and exigent circumstances”**

**No authority to purchase financial assets other than Treasuries and Agencies**



## **Weak Fire Fighting Tools: Guarantees**

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### **Existing**

**FDIC-insured deposits up to \$100k**

### **Not Included**

**Deposits above \$100k, business transaction  
accounts, foreign deposits, repo, commercial  
paper for banks**

**Any liabilities of shadow banks**

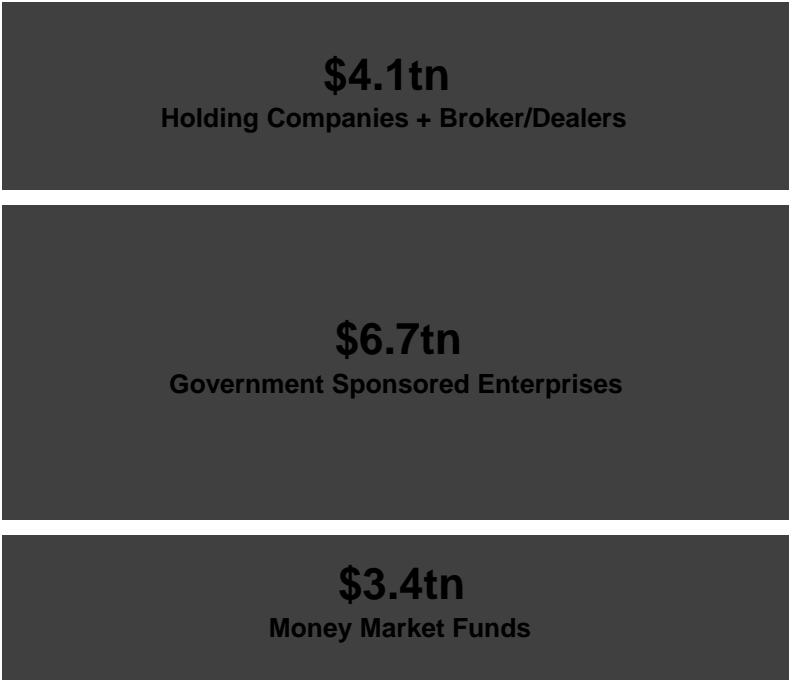
### **Emergency Authorities**

**FDIC's systemic risk exception**

**Treasury's Exchange Stabilization Fund**

# Pre-Crisis Reach of Our Tools

## Institutions



## Markets



**On the eve of the crisis, our financial capacity was strong,  
but our firefighting tools were weak.**

# **The Global Financial Crisis**

## **Module 9 The Policy Response**

### **02 Phase 01 Letting it Burn**

## Phases of the Crisis

Phase 01

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August 2007 to March 2008

**Letting It Burn**

Phase 02

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March 2008 to September 2008

**Early Escalation**

Phase 03

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September 2008 to January 2009

**Breaking the Panic**

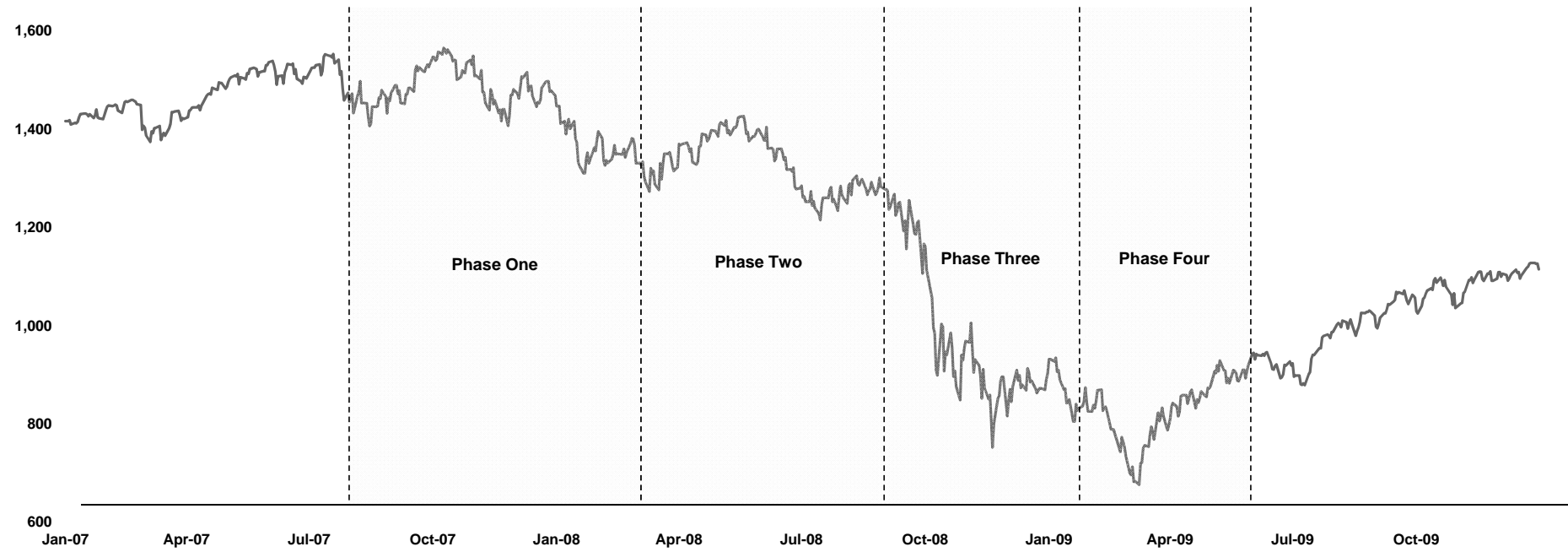
Phase 04

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February 2009 to June 2009

**Resolution**

# S&P and Phases



## Main Policy Choices

**01**

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How far to let  
the financial  
fires burn?

**02**

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How fast  
to escalate  
in deploying  
protection?

**03**

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How to break  
the panic once  
it starts?

**04**

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How to conduct  
the triage,  
where to draw  
the periphery of  
support?

**05**

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How to get the  
financial  
system working  
again?

**06**

---

How to balance  
the moral  
hazard risk in  
intervention  
with the  
economic costs  
of financial  
collapse?

## **Policy Considerations**

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**The reality of operating in extreme uncertainty**

**Hard to know what works; a lot of it is about confidence**

**We were living with the constant and acute fear that the crisis would get away from us**

**Our strategy was ultimately to decide to do too much, rather than risk doing too little**



# **The Framework for Crisis Resolution**

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## **Fiscal**

**Stimulus large relative to fall in private demand**  
**Quick and sustained**

## **Monetary**

**Negative real rates**  
**Sustained to help facilitate deleveraging**

## **Financial**

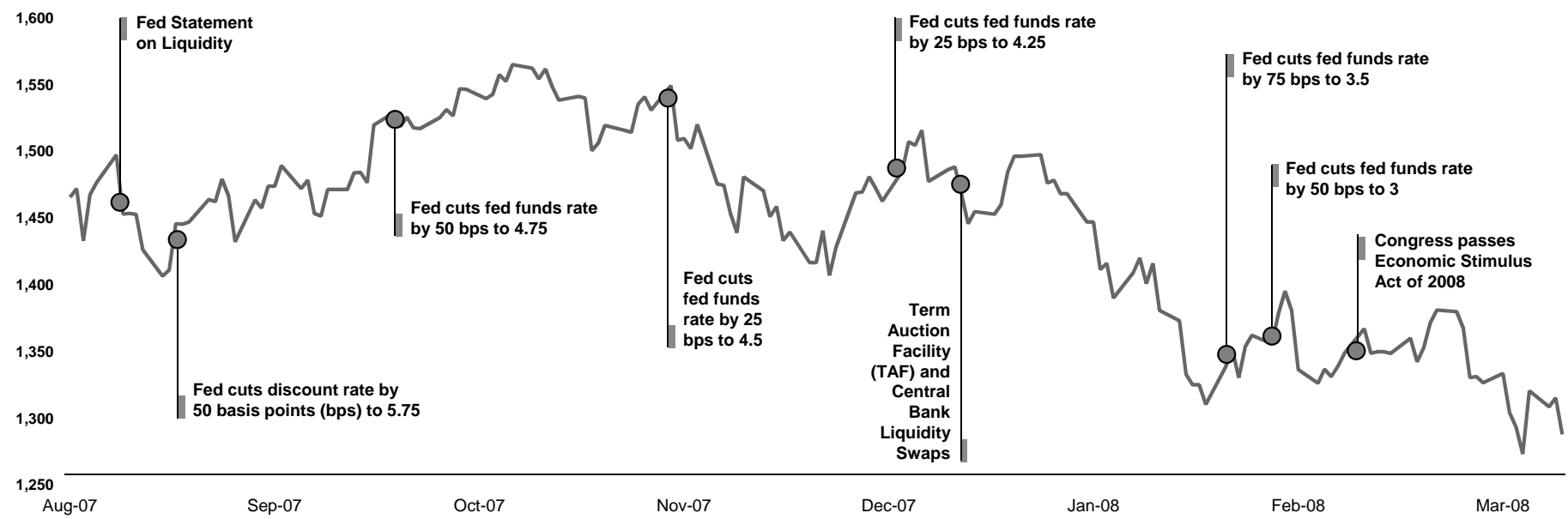
**Classic lender of last resort provision of liquidity**  
**Guarantees**  
**Support for funding markets**  
**Capital**  
**Resolution and restructuring**

# **The Global Financial Crisis**

## **Module 9 The Policy Response**

### **03 Phase 01 Letting it Burn August 2007 to March 2008**

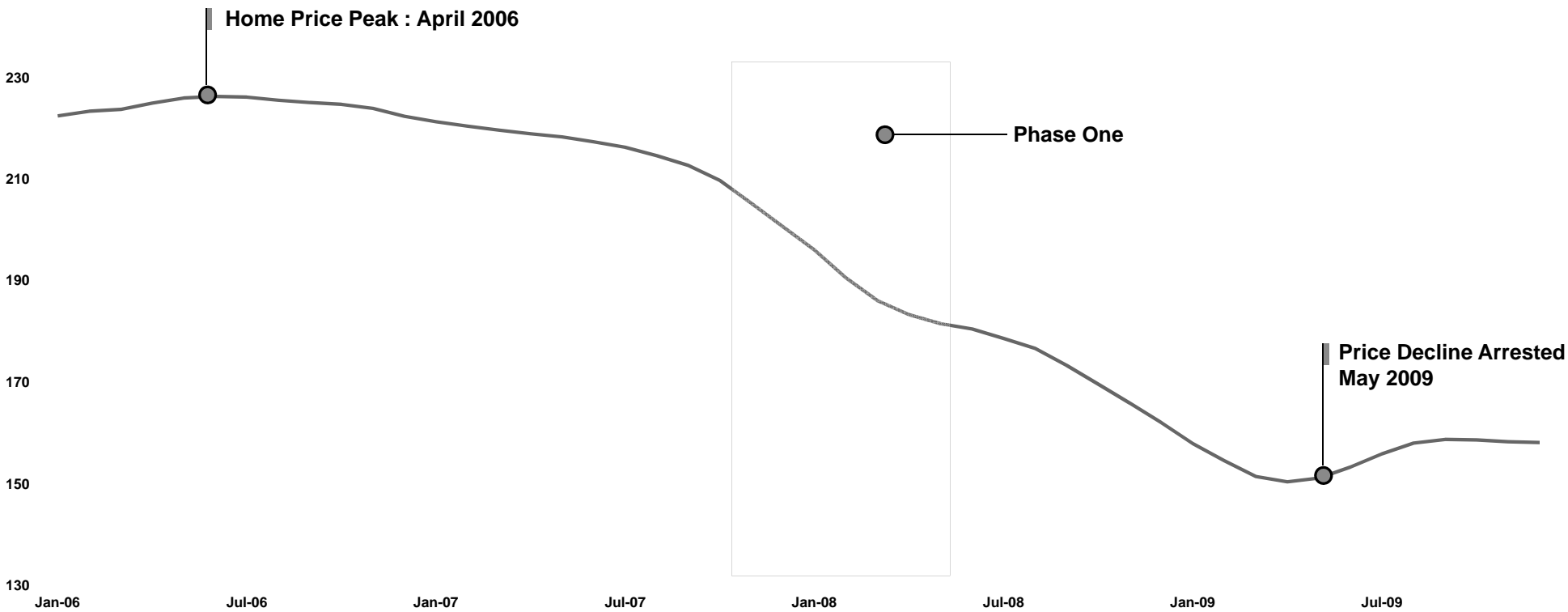
# Phase 01 Policy Actions



Support for Banks	
Shadow Banks + Markets	
Fiscal Policy	
Monetary Policy	
Rest of the World	

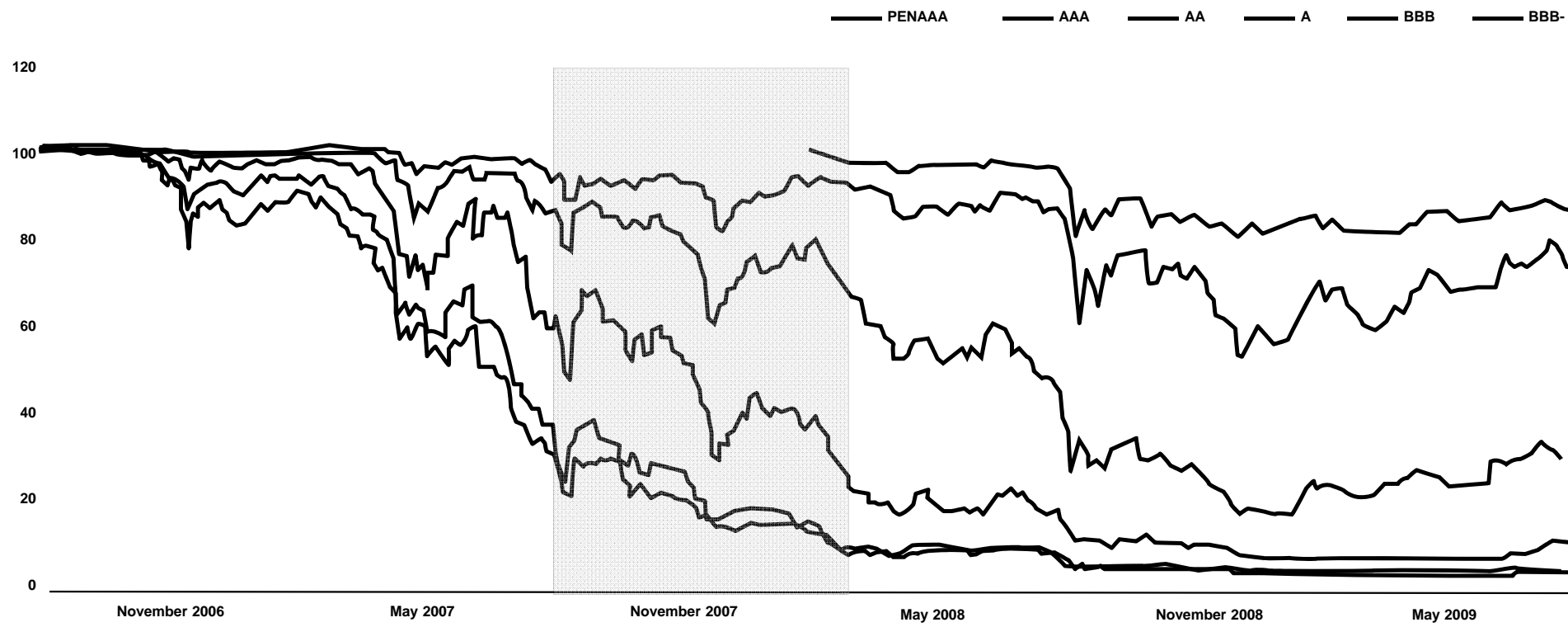
# Home Prices

S&P Case-Shiller 20-City Home Price Index



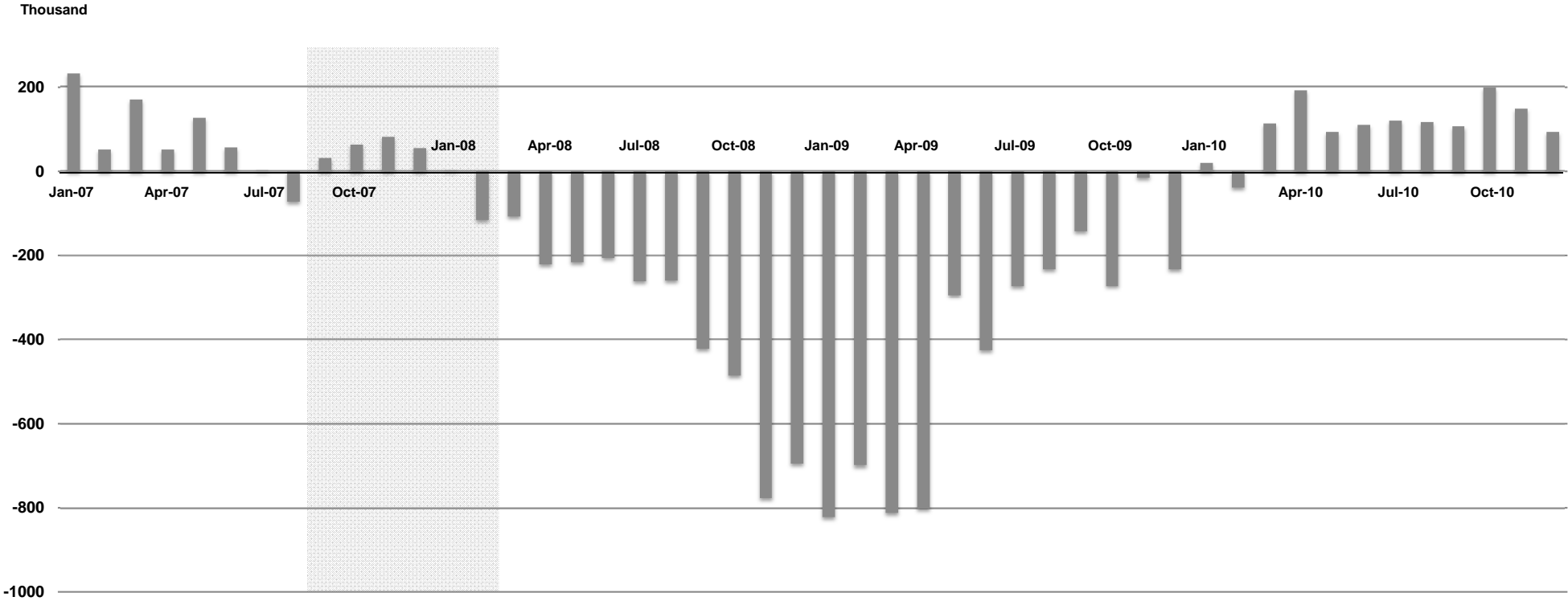
# Price of Mortgage Securities

ABX HE 06-1 Index of Subprime MBS



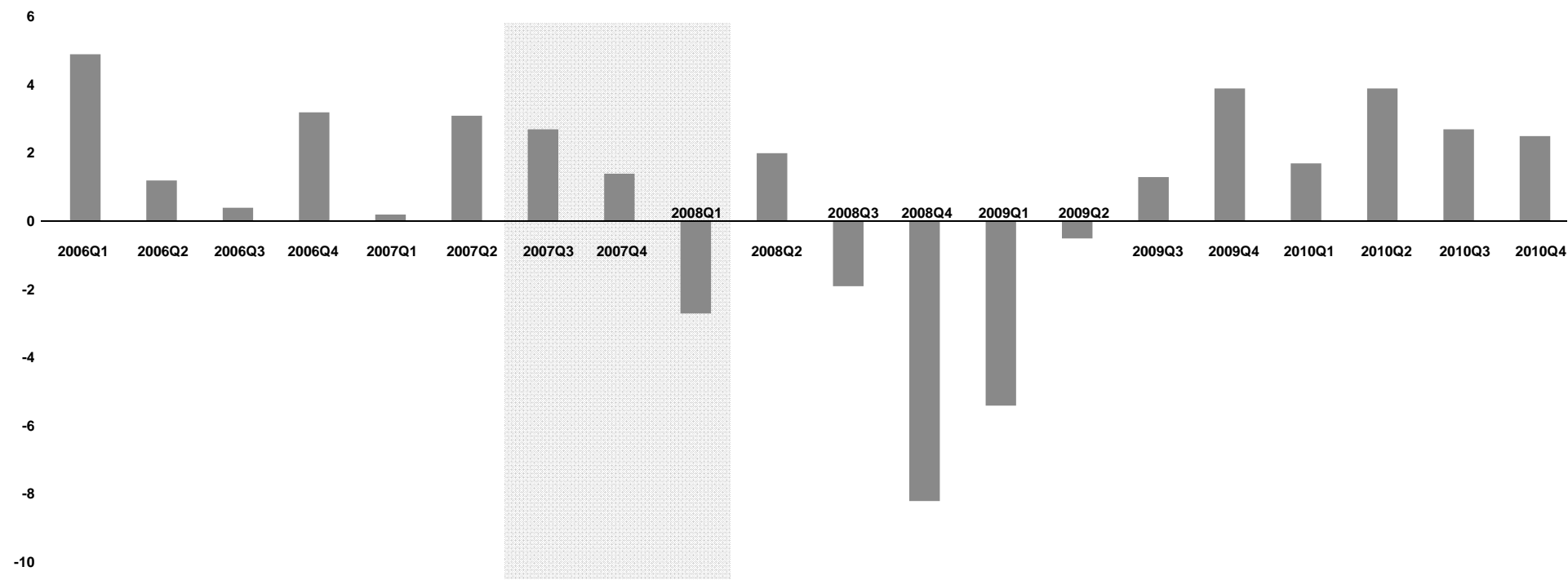
# Private Sector Job Growth/Losses

Monthly change in private nonfarm payrolls



# Economic Growth

Real quarterly GDP growth, seasonally adjusted at an annual rate



## **Phase 01 What We Did: Letting it Burn**

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**Standard monetary policy: lowered interest rates aggressively**

**Tried to get liquidity into the banking system by reducing the stigma of the discount window**

**Liquidity swaps for foreign central banks**

**Fiscal stimulus through modest tax rebates...**

**But didn't lend beyond banks**

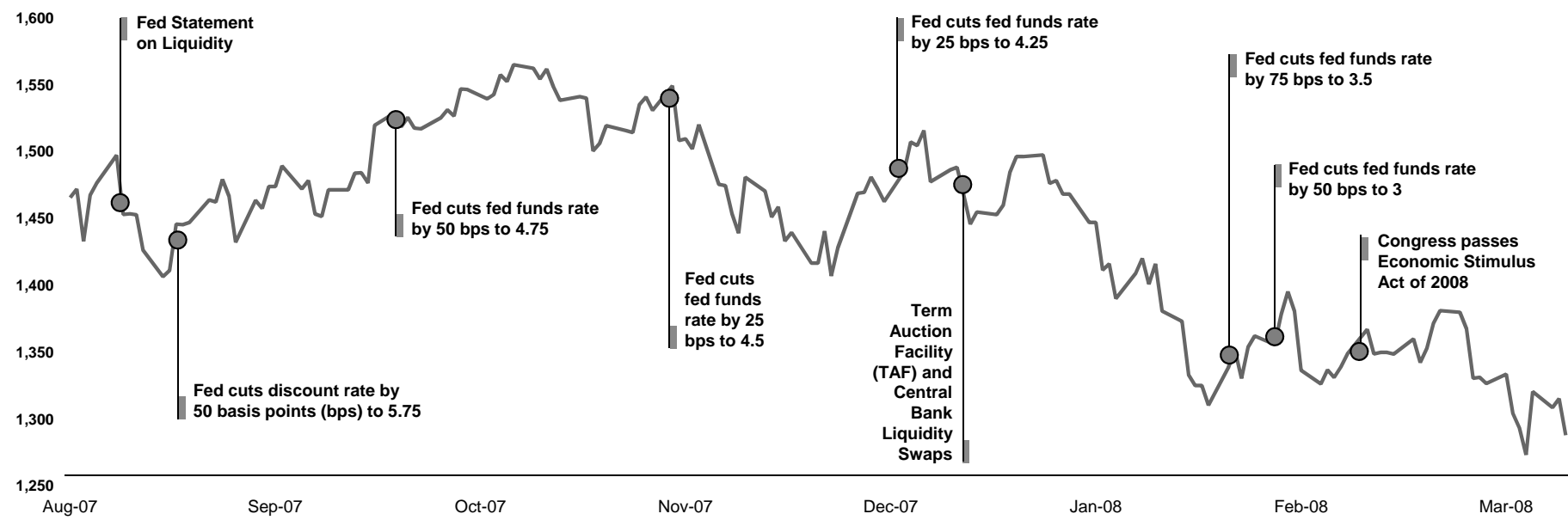
**We did not step in to finance the securities the market didn't want to finance**

**And we allowed the weaker non-banks to fail**

**More than two dozen mortgage lenders failed, including New Century in April 2007**

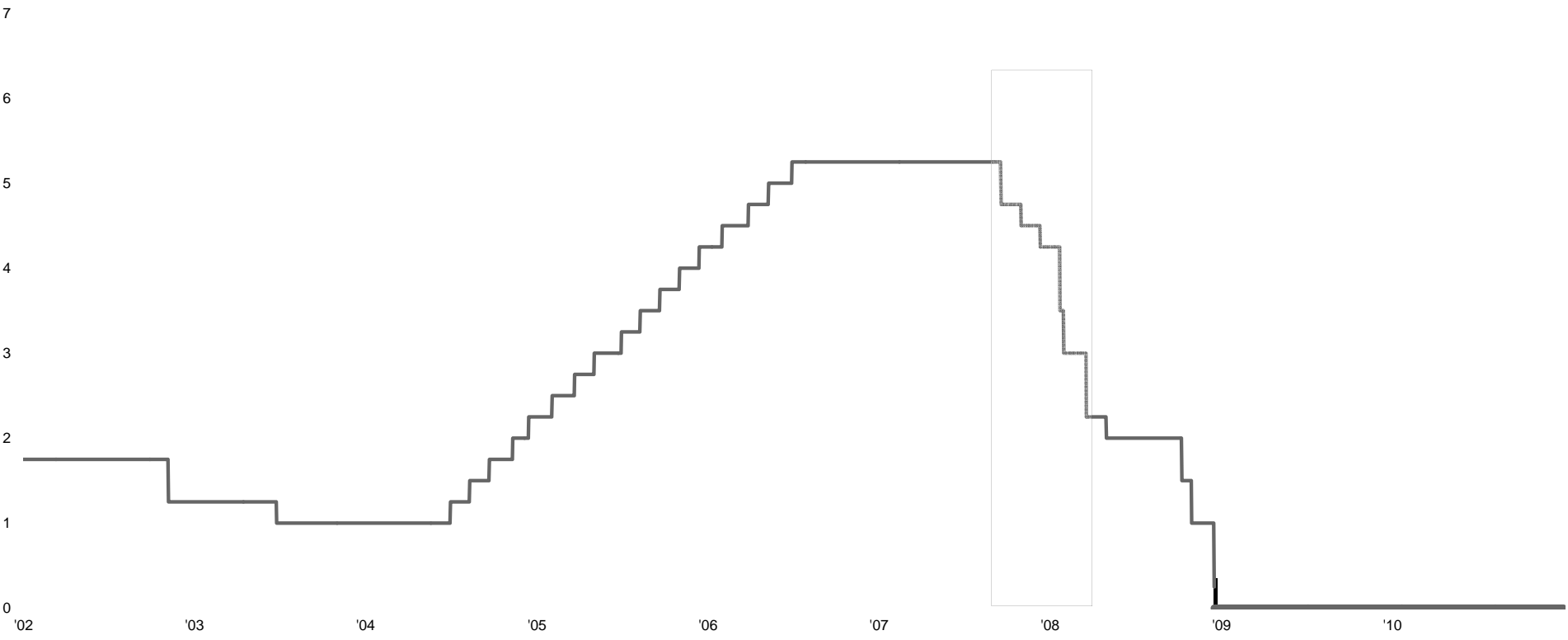


# Phase 01 Policy Actions

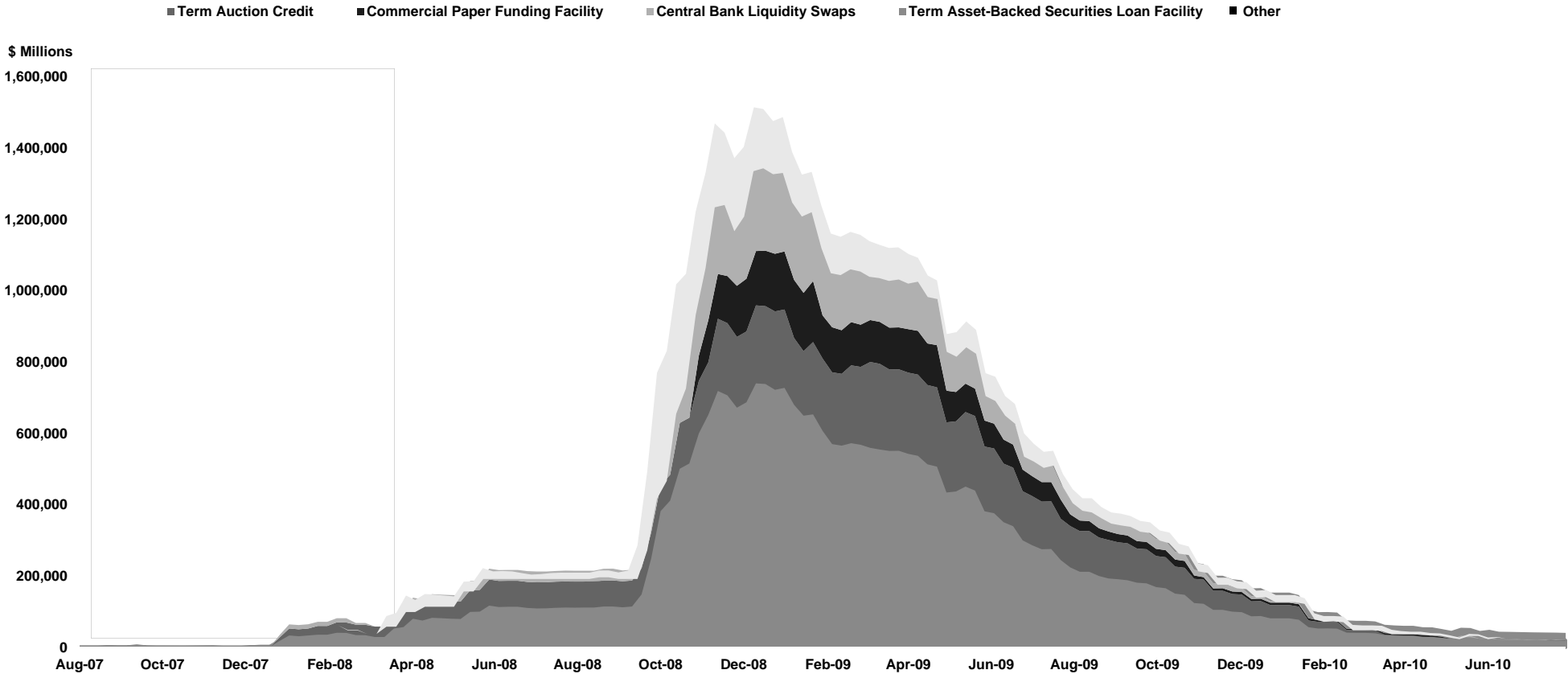


Support for Banks	
Shadow Banks + Markets	
Fiscal Policy	
Monetary Policy	
Rest of the World	

# Fed Funds Rate



# Fed Liquidity Facilities



# Reach of Tools

End of Phase 01: March 2008

## Institutions



## Markets



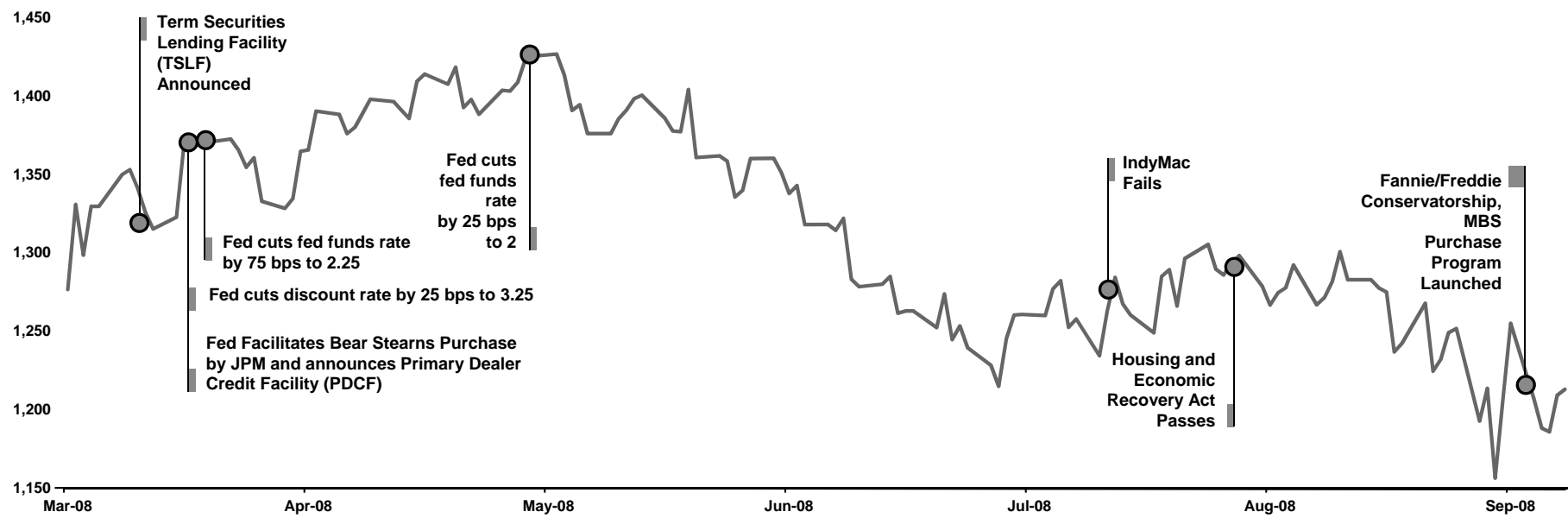
# **The Global Financial Crisis**

## **Module 9 The Policy Response**

### **04 Phase 02 Early Escalation March 2008 to September 2008**

# Phase 02 Policy Actions

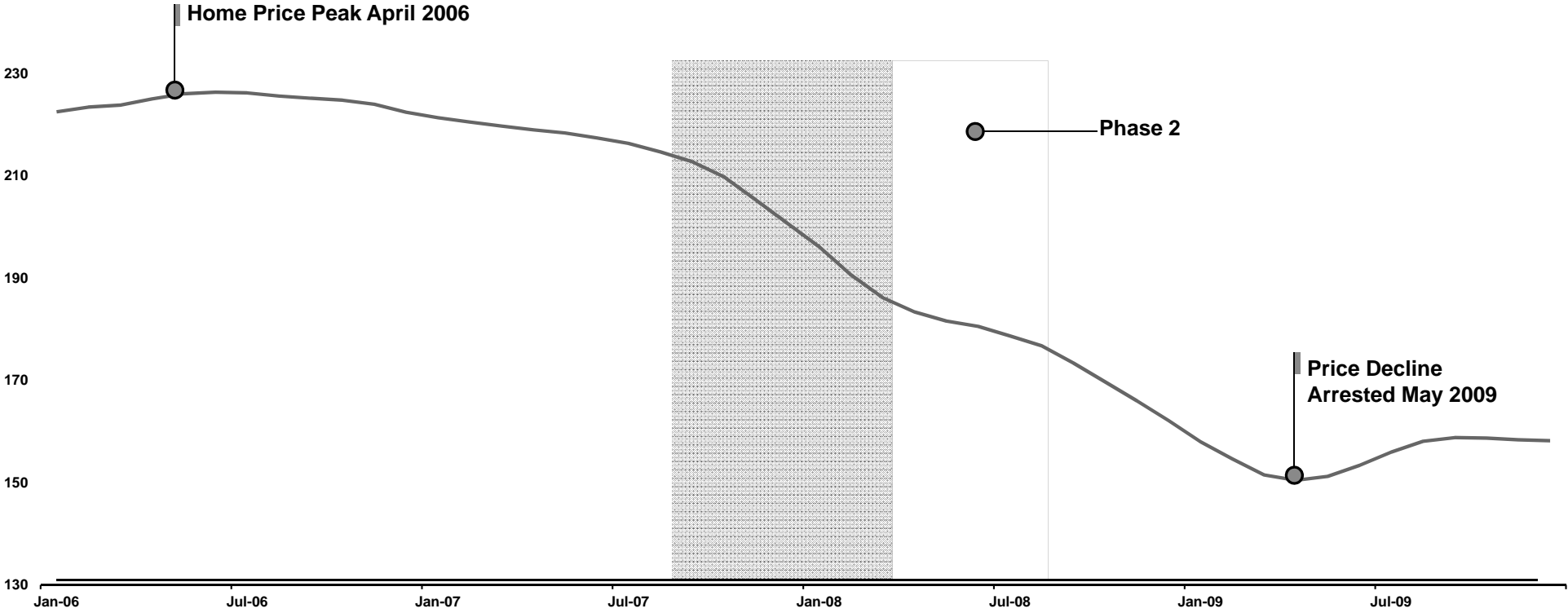
Value of S&P 500 through early September 2009



Support for Banks	
Shadow Banks + Markets	
Fiscal Policy	
Monetary Policy	
Rest of the World	

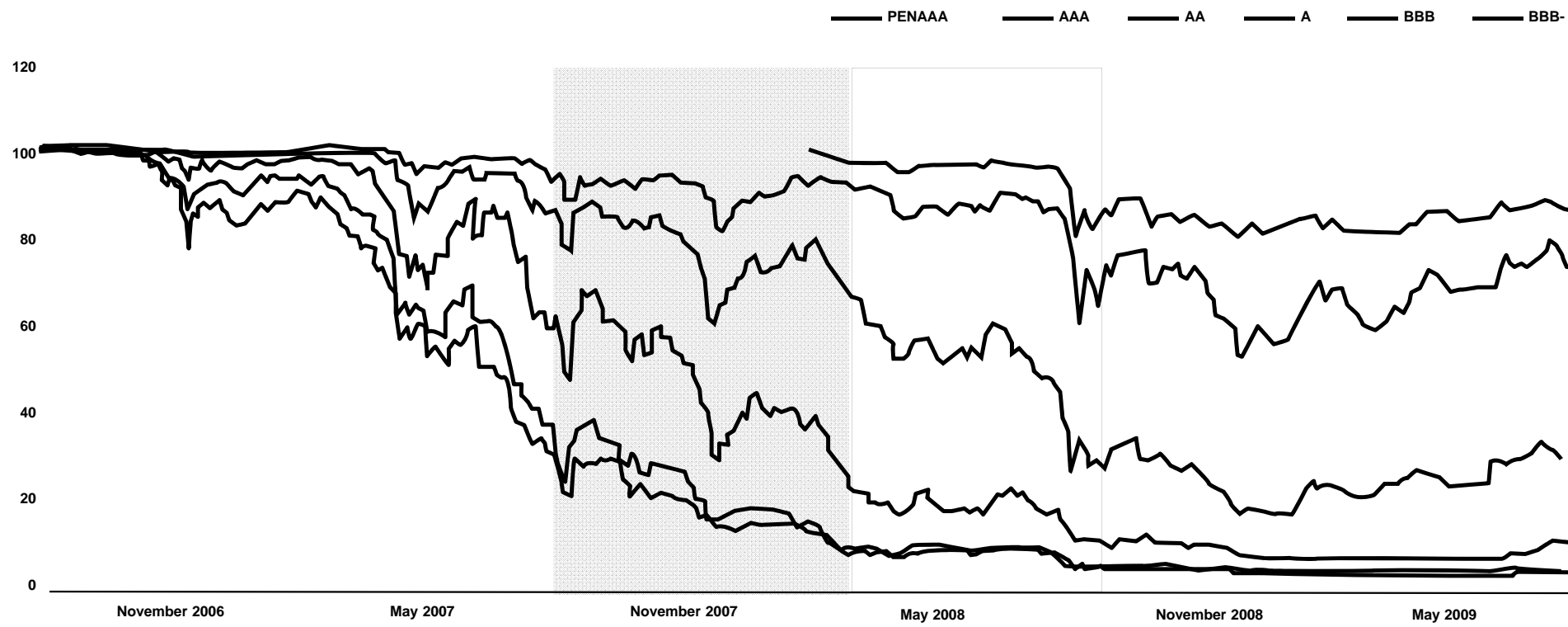
# Home Prices

S&P Case-Shiller 20-City Home Price Index



# Price of Mortgage Securities

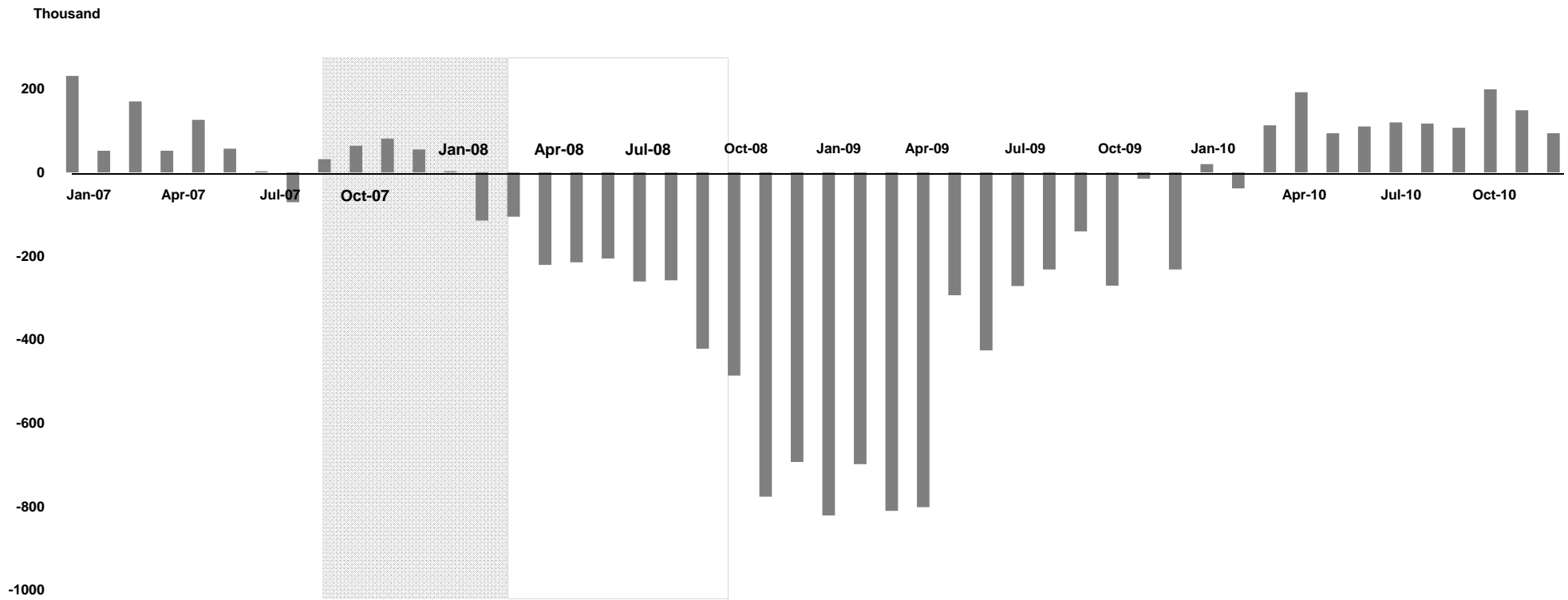
ABX HE 06-1 Index of Subprime MBS





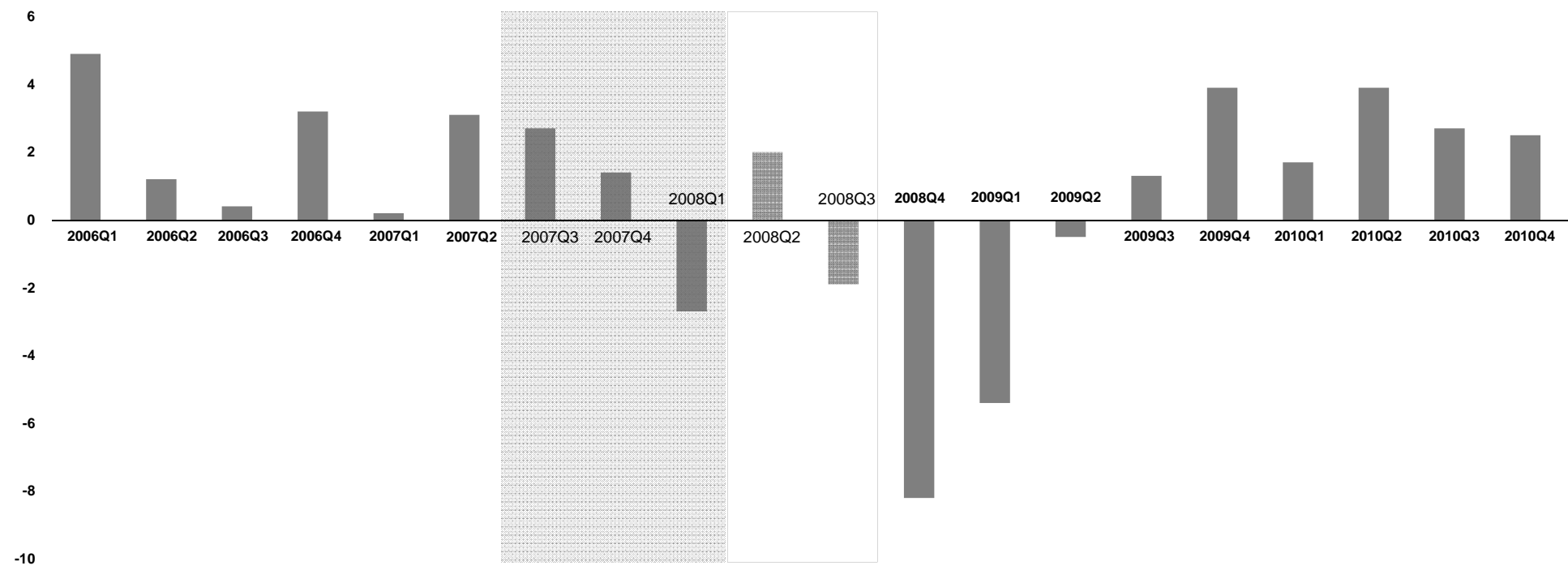
# Private Sector Job Growth/Losses

Monthly change in private nonfarm payrolls



# Economic Growth

Real quarterly GDP growth, seasonally adjusted at an annual rate



## **Phase 02 What We Did: Early Escalation**

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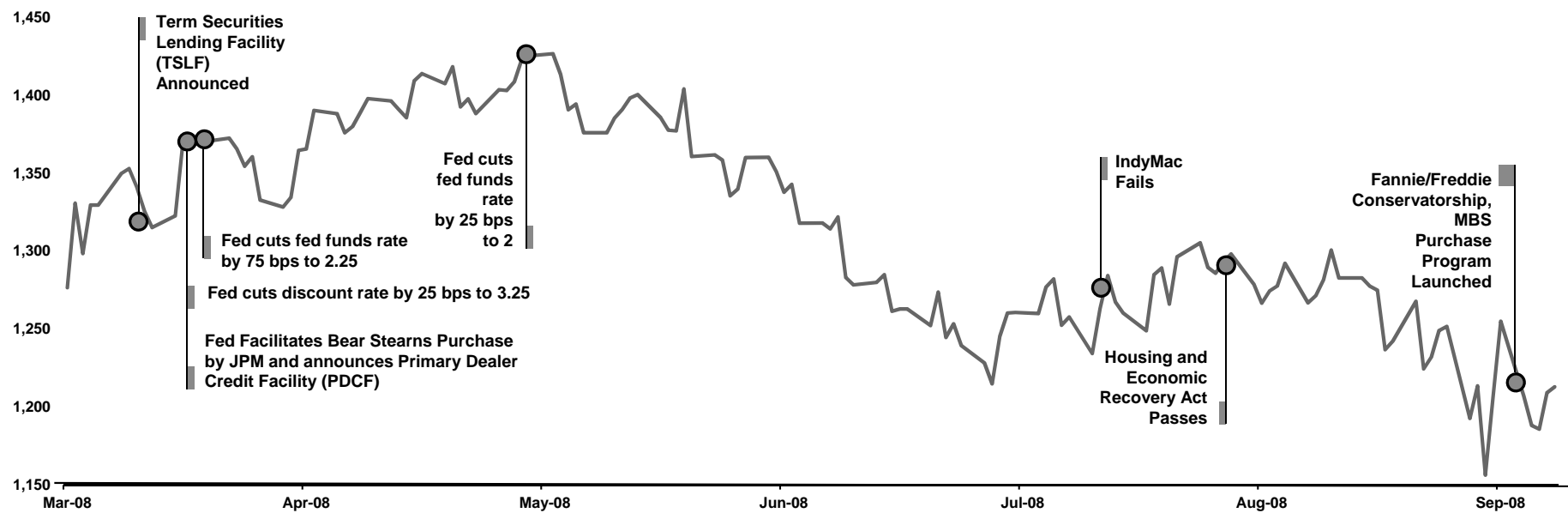
**Broke the line past banks—lent directly to nonbanks  
PDCF, TSLF, Bear Stearns**

**Went to Congress for Fannie/Freddie bazooka, prepared for  
war**

**All this helped slow the burn**

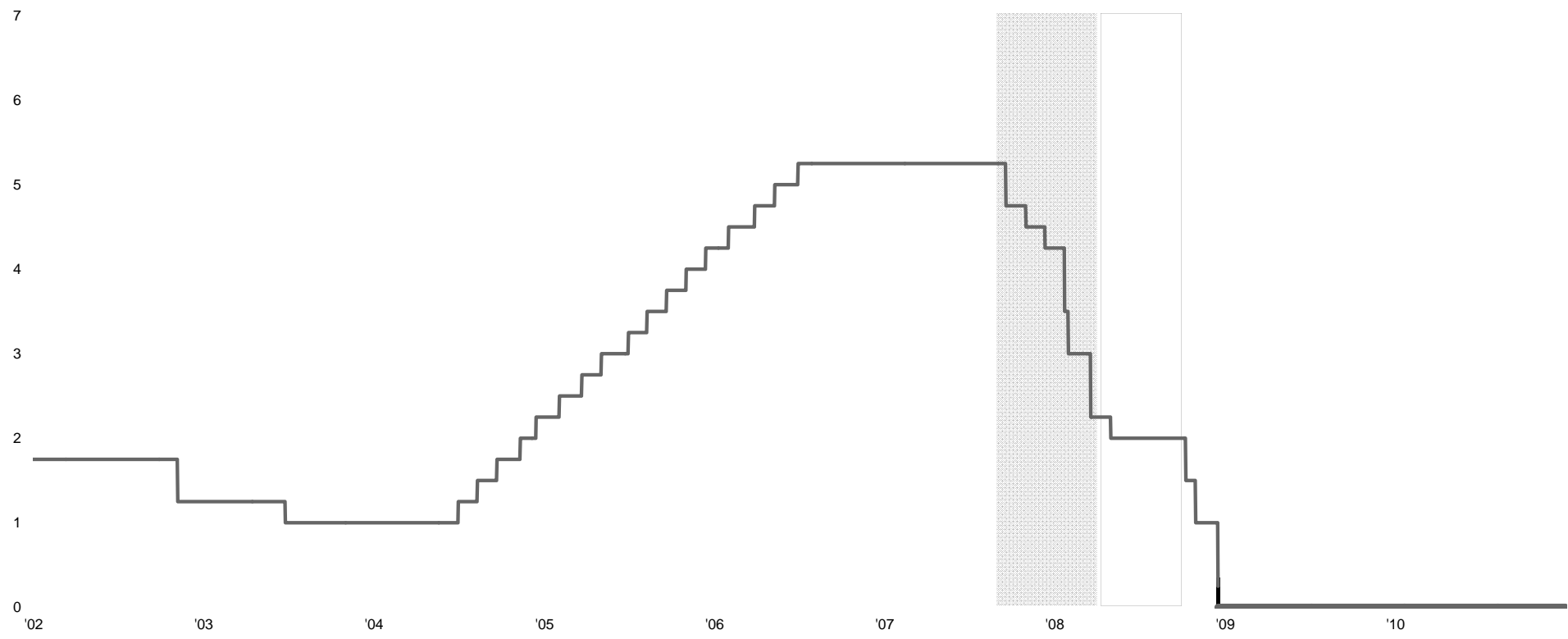
# Phase 02 Policy Actions

Value of S&P 500 through early September 2009

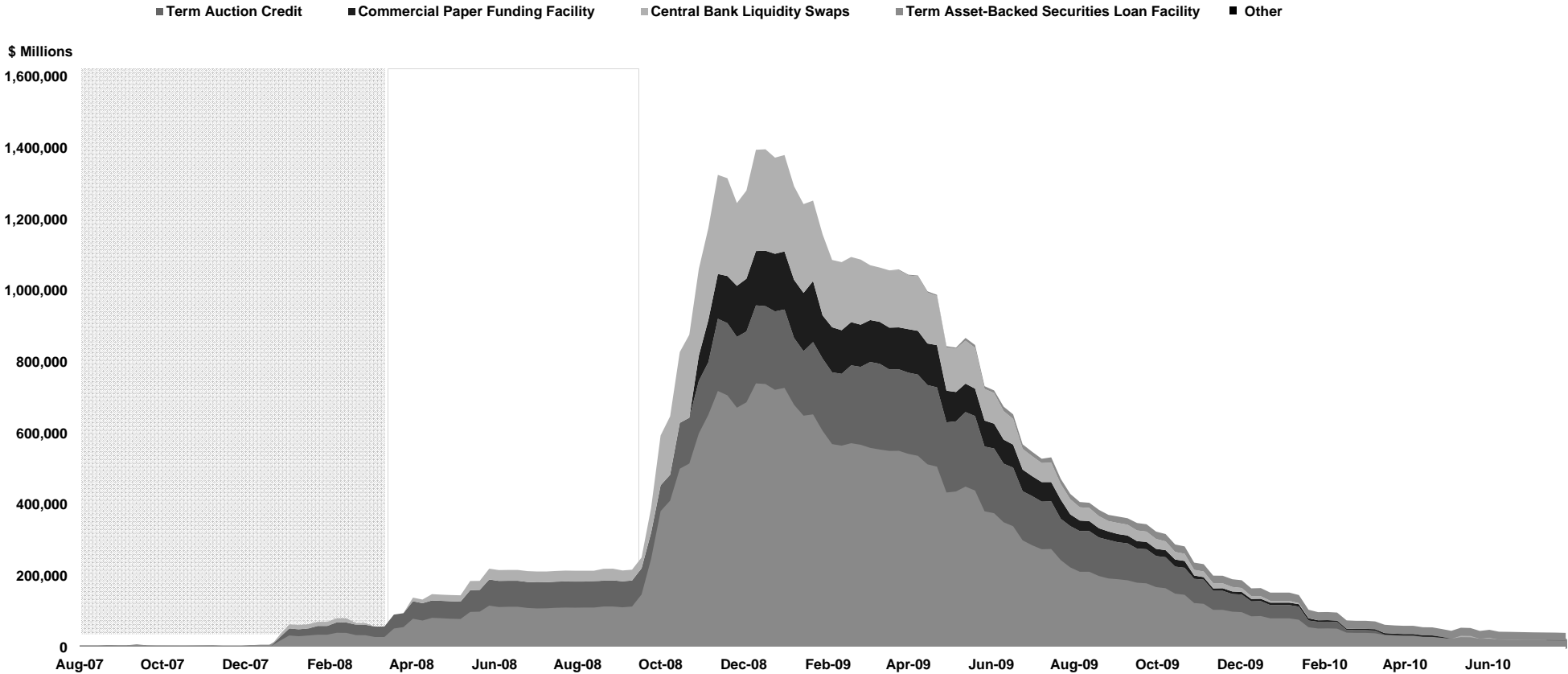


Support for Banks	
Shadow Banks + Markets	
Fiscal Policy	
Monetary Policy	
Rest of the World	

# Fed Funds Rate



# Fed Liquidity Facilities



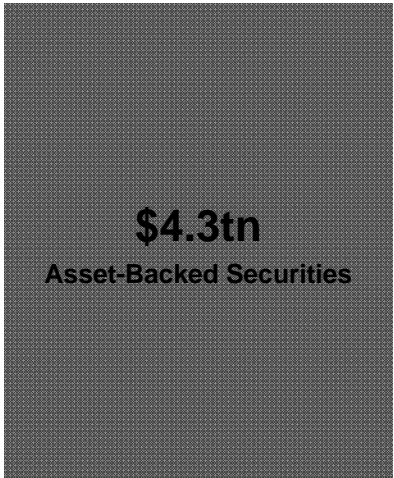
# Reach of Tools

End of Phase 02: September 2008

## Institutions



## Markets



# **The Global Financial Crisis**

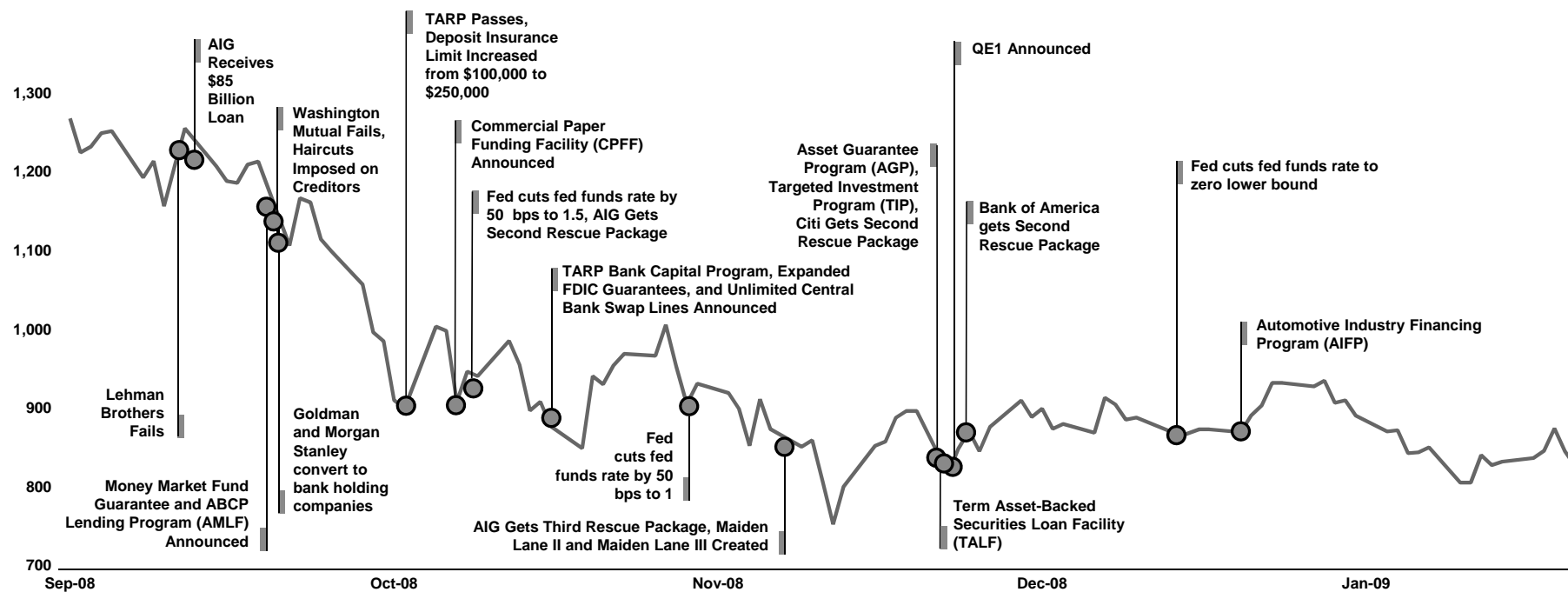
## **Module 9 The Policy Response**

### **05 Phase 03 Breaking the Panic**



# Phase 03 Policy Actions

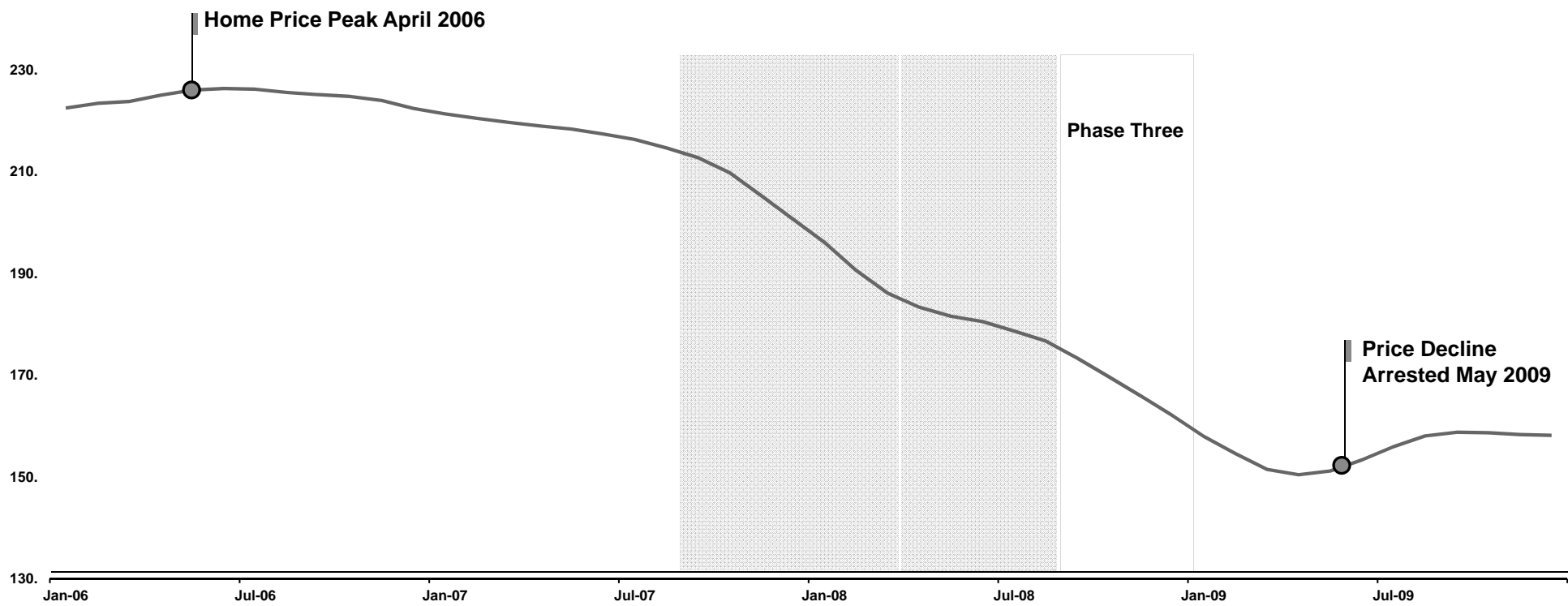
Value of S&P 500 through January 2009



Support for Banks	
Shadow Banks + Markets	
Fiscal Policy	
Monetary Policy	
Rest of the World	

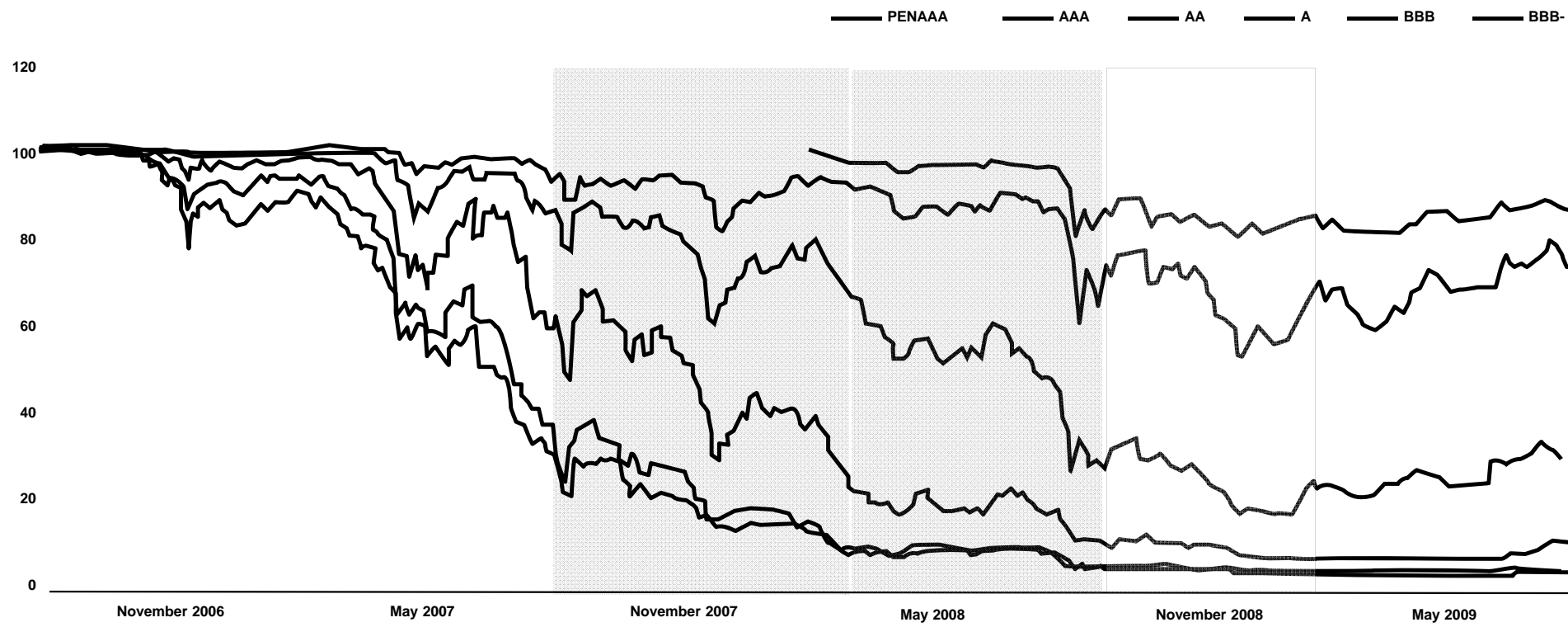
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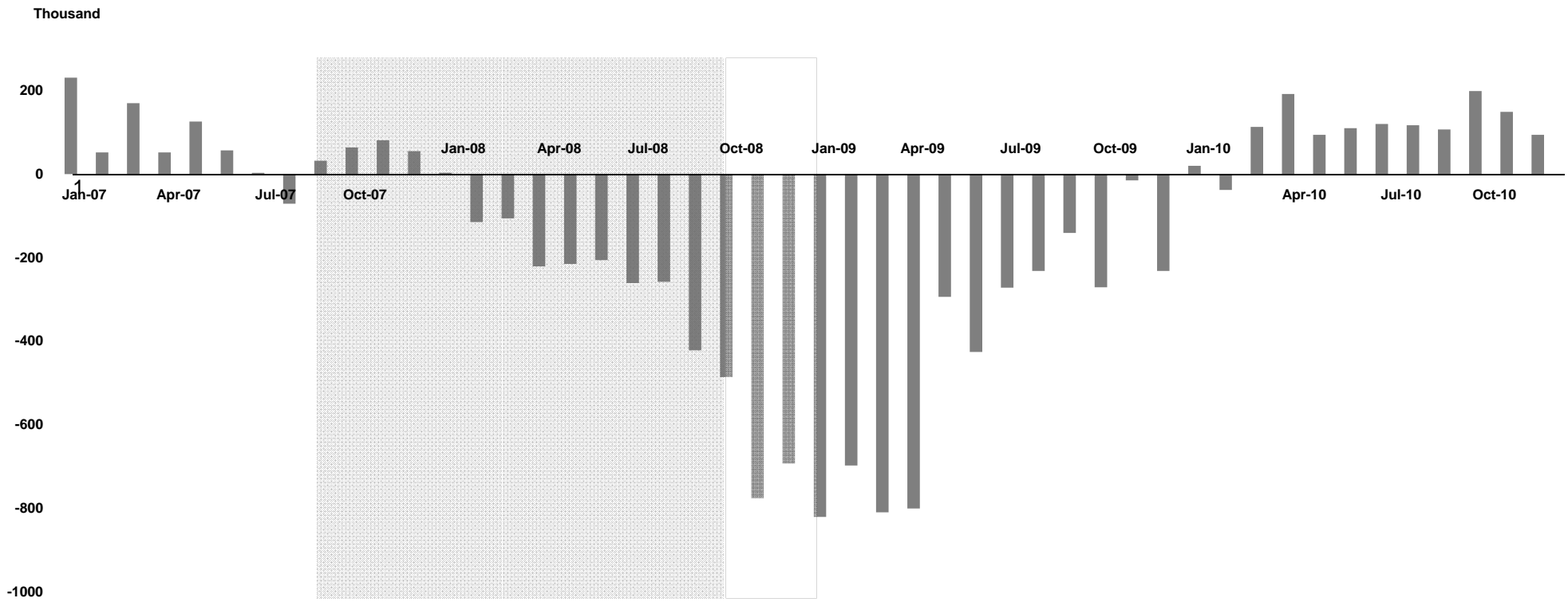
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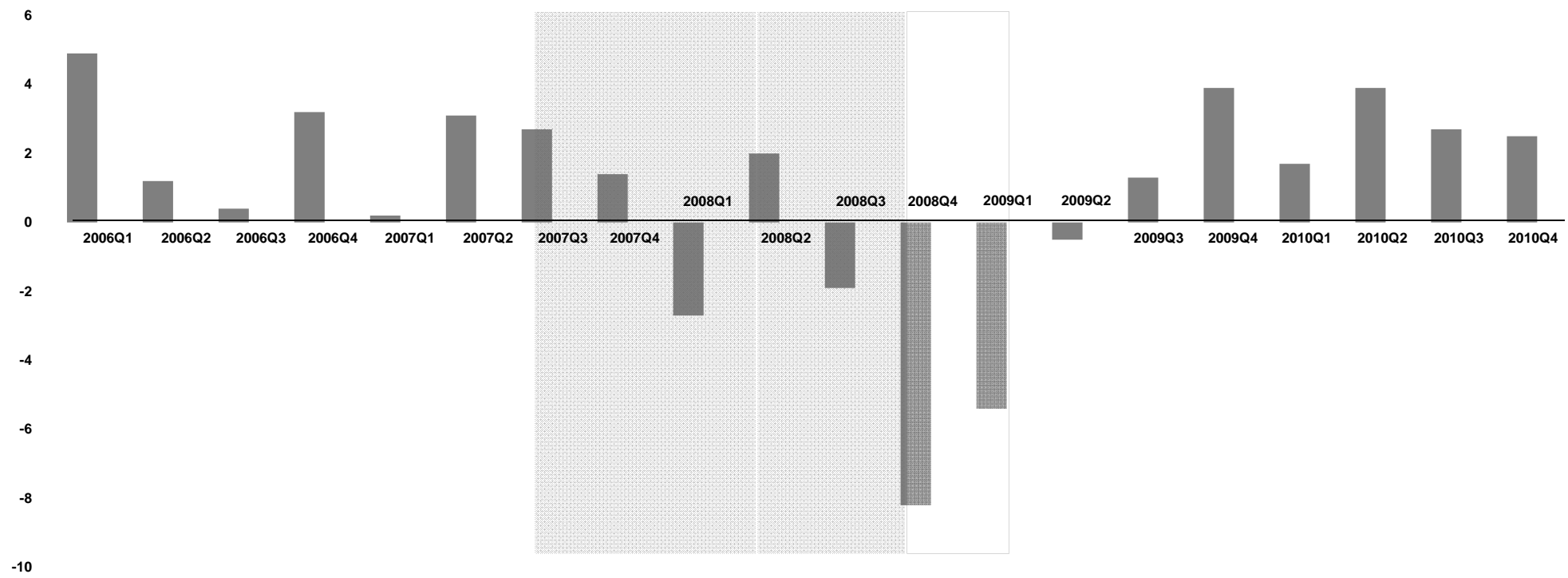
# Private Sector Job Growth/Losses

Monthly change in private nonfarm payrolls



# Economic Growth

Real quarterly GDP growth, seasonally adjusted at an annual rate



## **Phase 03 What We Did: Breaking the Panic**

**Powell Doctrine to Break the Panic**

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**Dramatically expanded liquidity into critical markets  
(CP and ABCP) and shadow institutions**

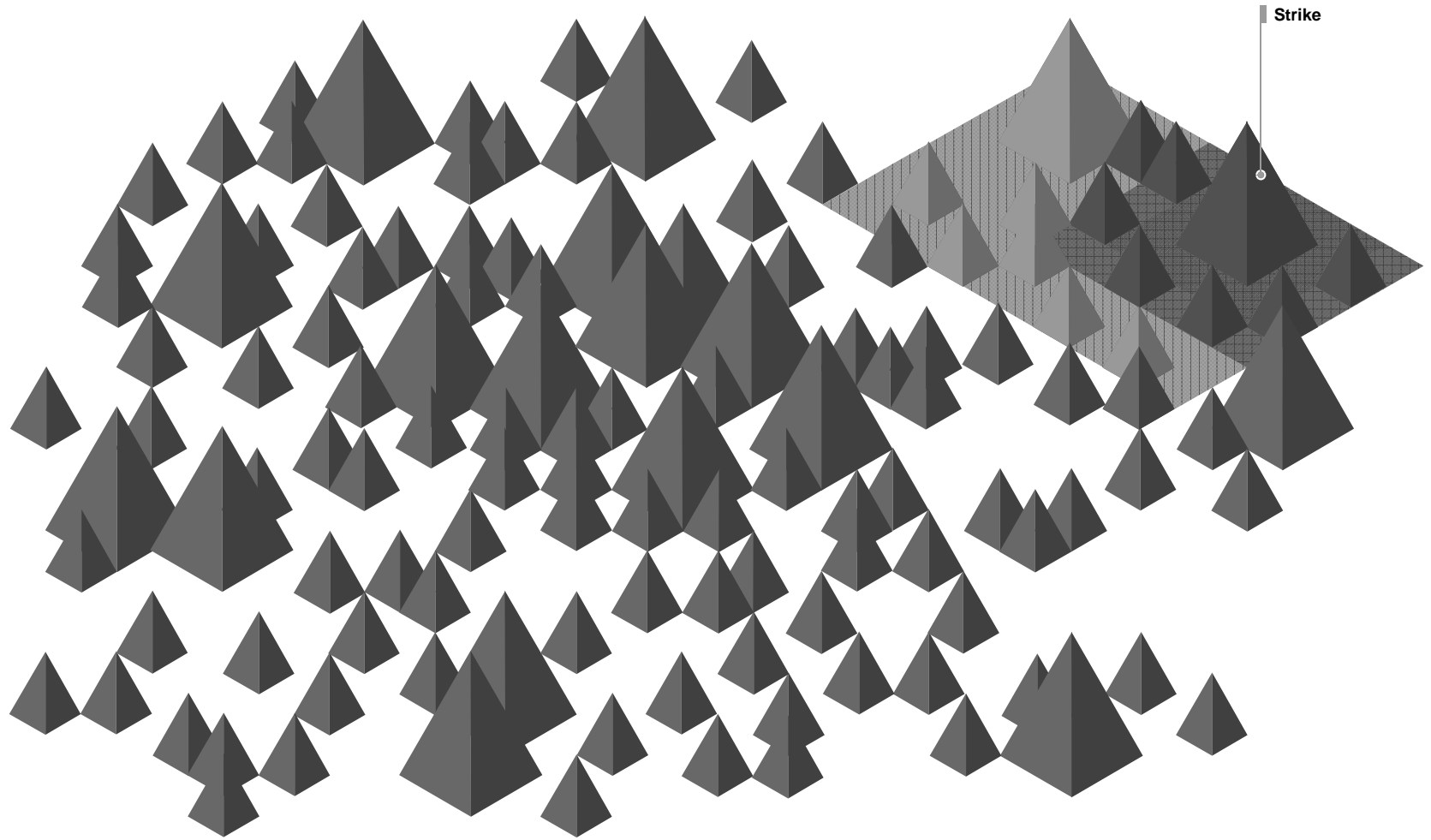
**Provided additional support to systemic institutions:  
AIG, Citigroup, and Bank of America**

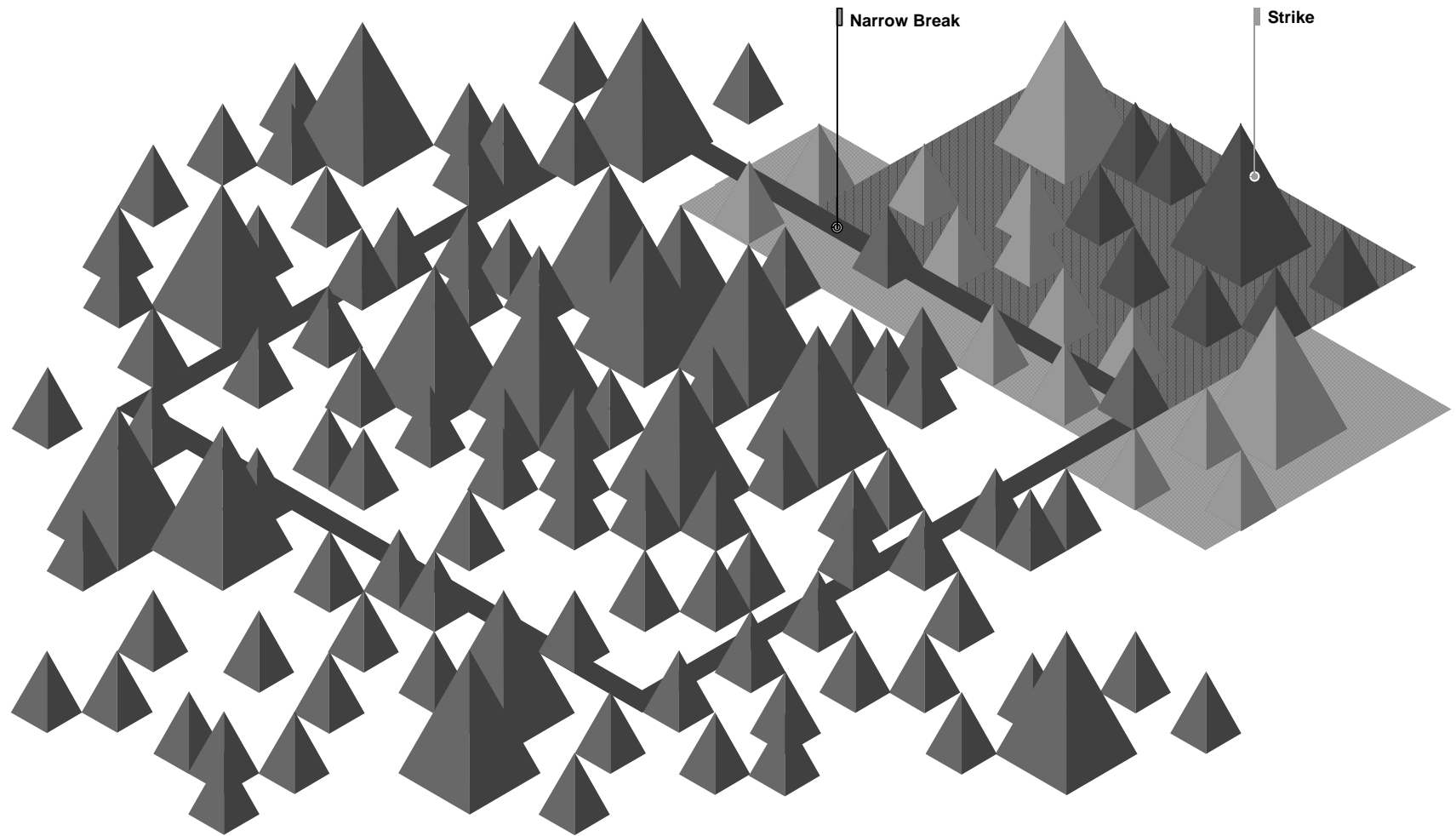
**Provided guarantees to \$3.4 trillion money fund  
industry and the entire banking system**

**Injected capital into more than half of the banking  
system by assets**

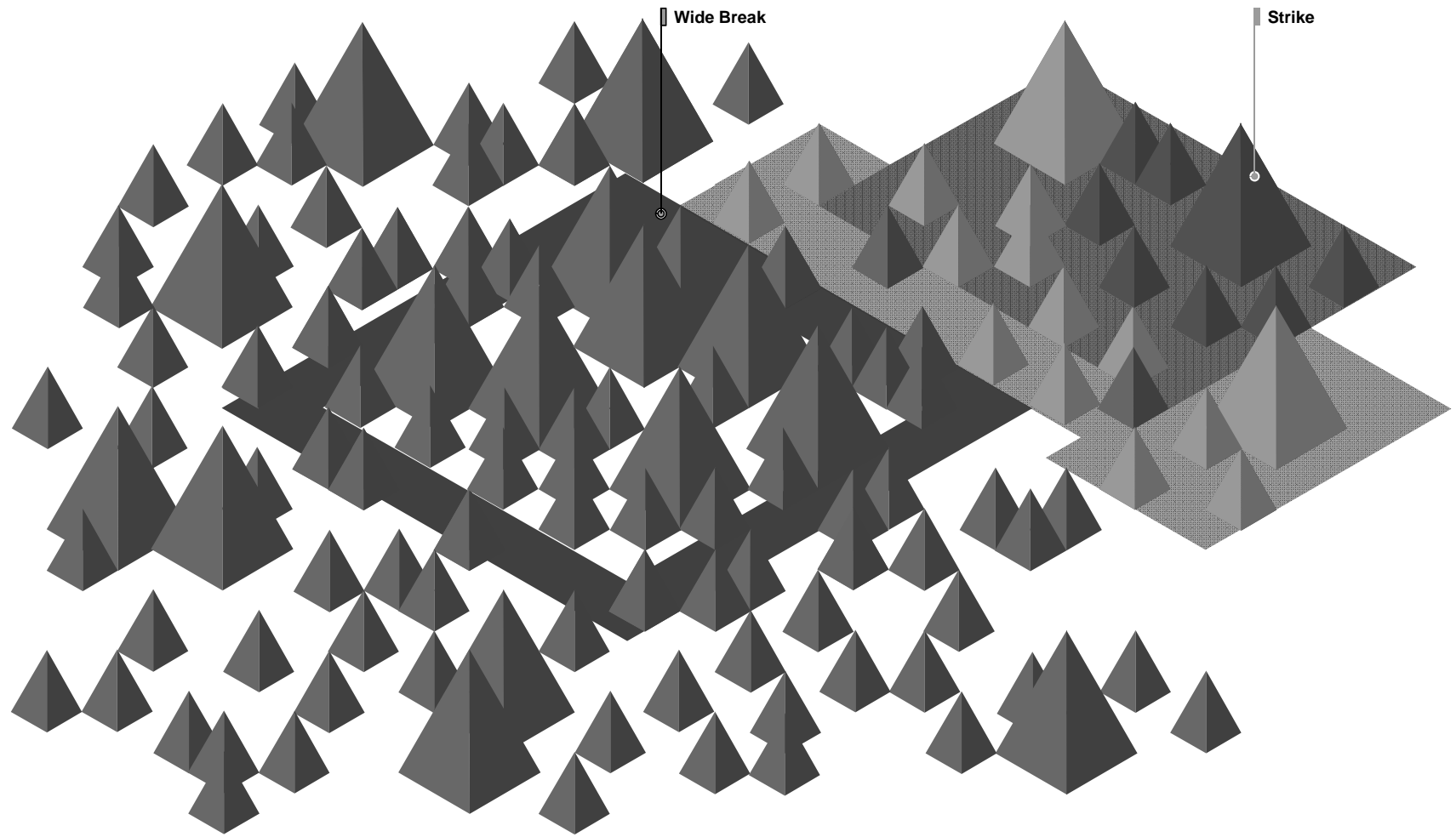
**Deployed unlimited central bank swap lines to  
support the global system**

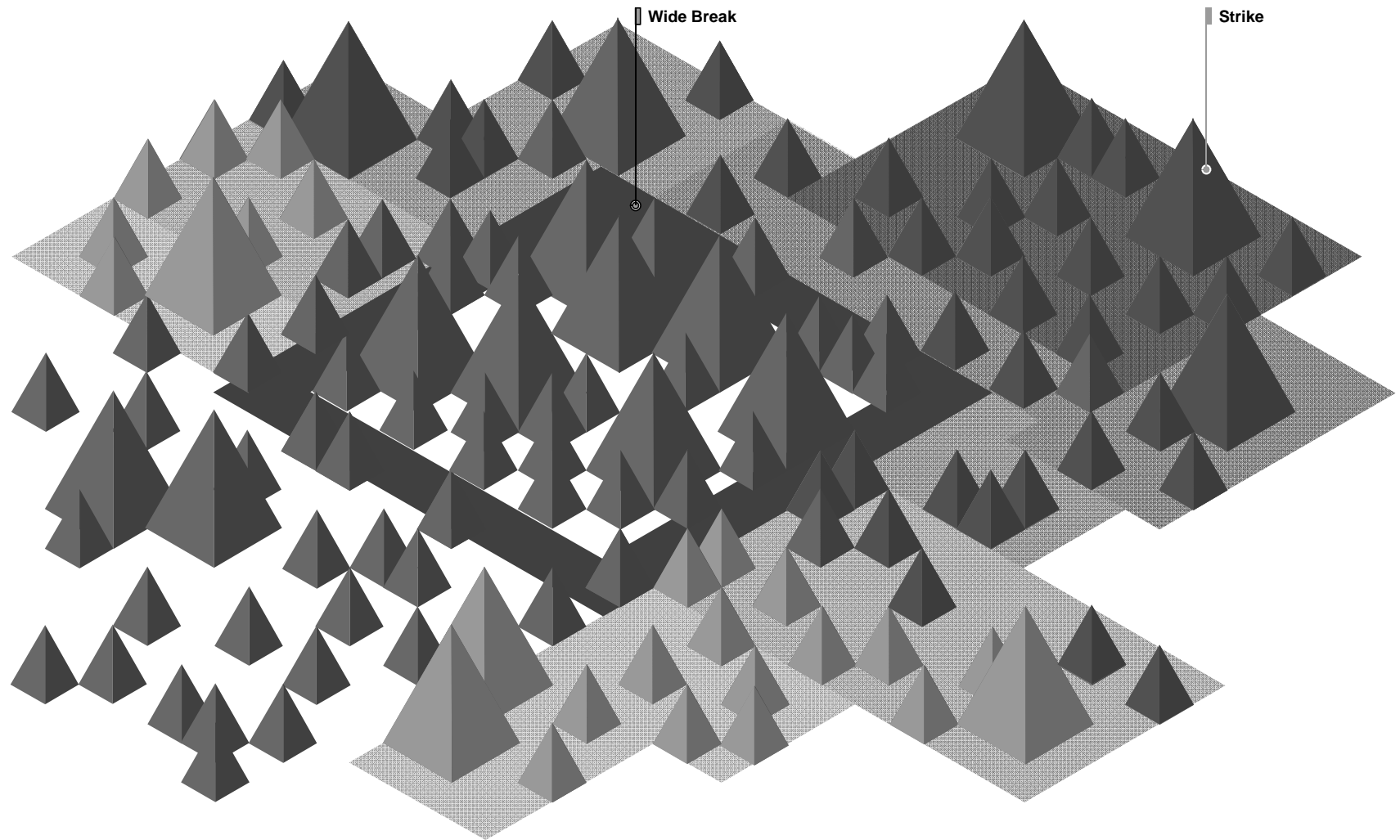
**Provided bridge financing to major auto companies**





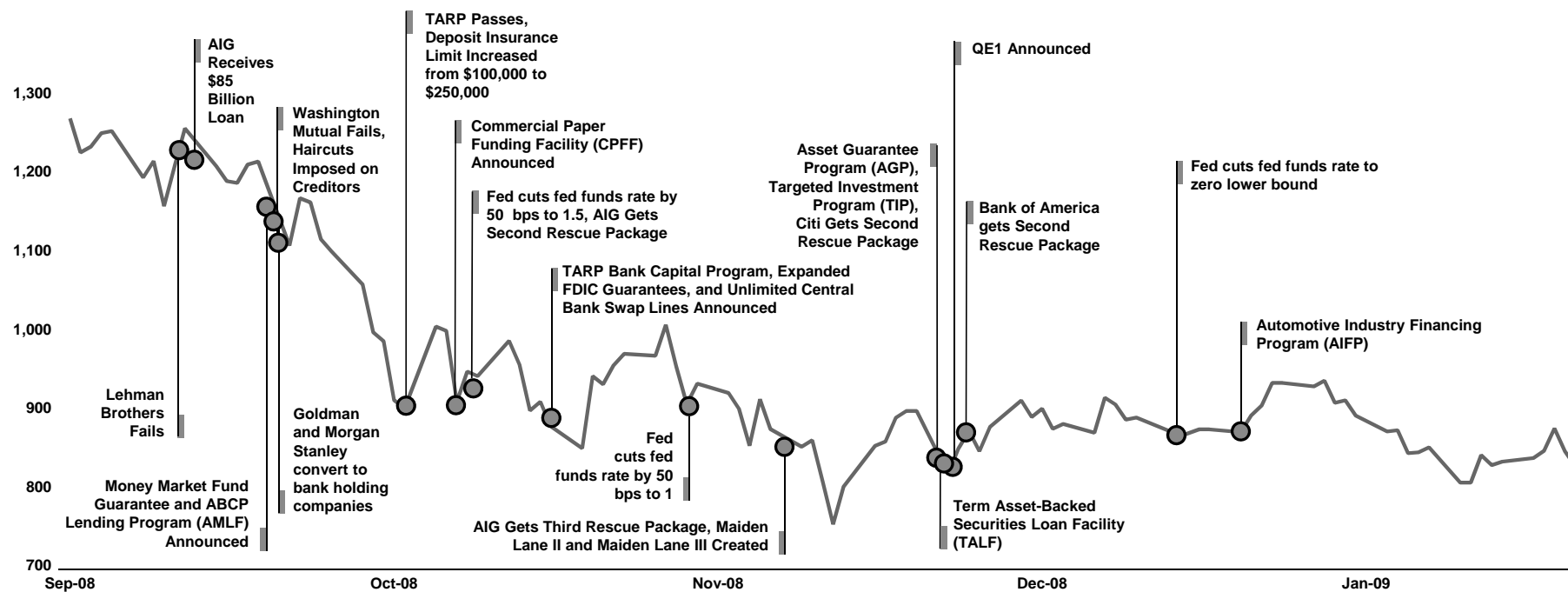






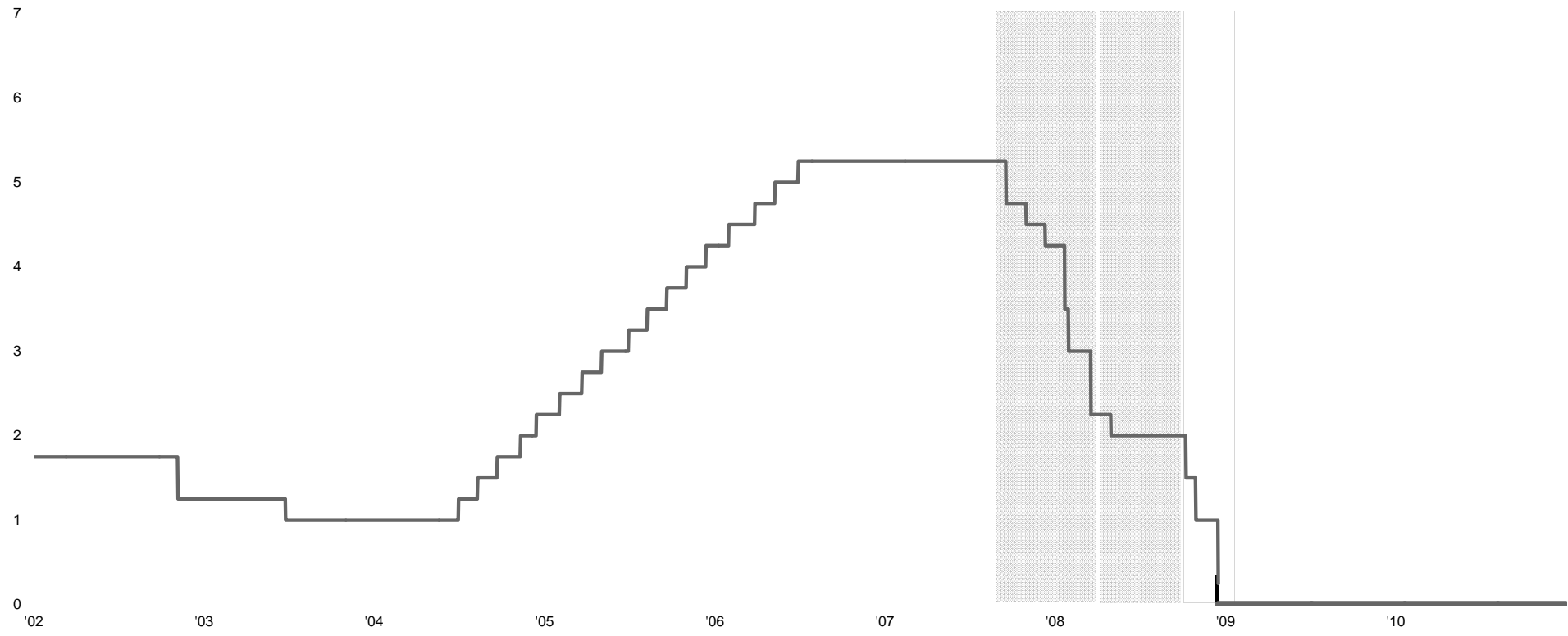
# Phase 03 Policy Actions

Value of S&P 500 through January 2009

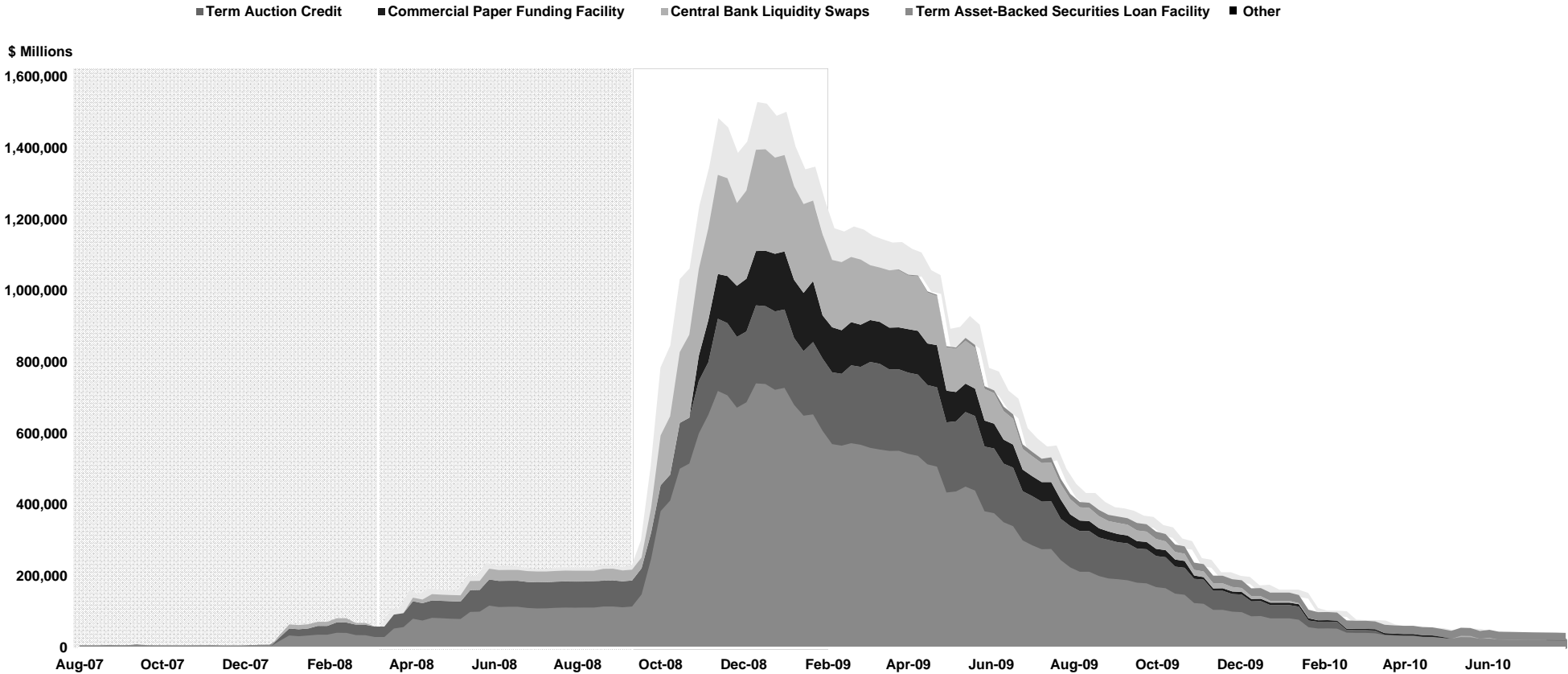


Support for Banks	
Shadow Banks + Markets	
Fiscal Policy	
Monetary Policy	
Rest of the World	

# Fed Funds Rate



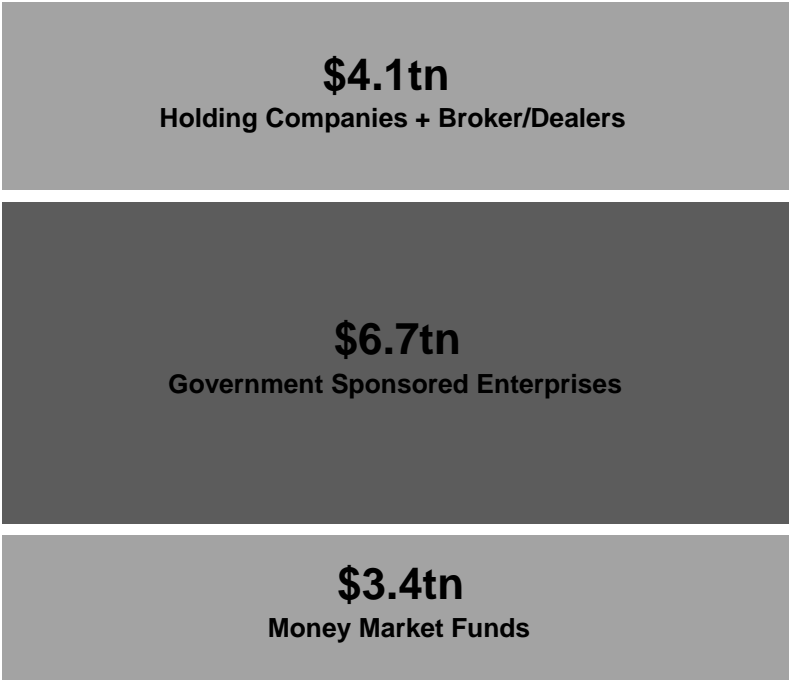
# Fed Liquidity Facilities



# Reach of Tools

End of Phase 03 : January 2009

## Institutions



## Markets



# **The Global Financial Crisis**

## **Module 9 The Policy Response**

### **06 Triage in a Panic**

## **Triage in a Panic**

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**How do you decide which firms to save and which to allow to fail?**

**How should you balance concerns about moral hazard with the risk of accelerating a run on the financial system?**

**When should you impose haircuts on bank creditors and when should you guarantee them?**



## **From Lehman to AIG to WaMu**

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**In a period of four weeks in September 2008, the United States:**

**Put Fannie and Freddie into conservatorship, guaranteeing their creditors but forcing their equity holders to absorb losses.**

**Helped encourage the acquisition of a failing investment bank (Merrill Lynch) by Bank of America.**

**Failed to find a buyer for Lehman Brothers, another failing investment bank.**

**Acted to prevent the failure of a large global insurance company, AIG.**

**Imposed losses on the creditors of a large failing bank (WaMu) in the context of facilitating its merger with JP Morgan.**

## **From Lehman to AIG to WaMu**

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**The pressures that brought all these firms to the brink of collapse were symptoms of the broader financial panic and deepening recession.**

**But the losses imposed on Lehman's and then WaMu's creditors accelerated the panic, dramatically intensifying the crisis.**

## **Fog of War, Moral Hazard, Politics**

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**Why such a disparate, inconsistent, seemingly erratic response?**

**Was it fog of war, concern about moral hazard, fear of political opposition, lack of appreciation for the fragility of the financial system, lack of creativity, limitations on authority?**

**Mostly it was the limitations of authority**

**The Fed could not lend to an institution that was not a bank, except under limiting conditions**

**In the absence of a willing buyer, the Fed did not have the authority to lend on a scale that would save Lehman. Just like we did not have the authority to save Bear on our own.**

**AIG, in contrast, had businesses of sufficient value that we could lend on a scale to prevent its collapse.**

## **Haircuts and Runs**

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**FDIC had emergency authority that allowed it to guarantee the creditors of a bank**

**In the case of WaMu, however, the FDIC chose not to use that authority**

**This added fuel to the fire, accelerating the panic, and spreading it to the broader banking system**

**The FDIC, to its credit, reversed course weeks later by:**

- 1. Facilitating a solution to Wachovia's problems that would have protected its creditors**
  - 2. Agreeing to guarantee new borrowing by bank holding companies**
- 

**If you haircut creditors in a systemic panic, when all firms look vulnerable, you risk intensifying the crisis, and forcing broader interventions to prevent the collapse of the financial system**

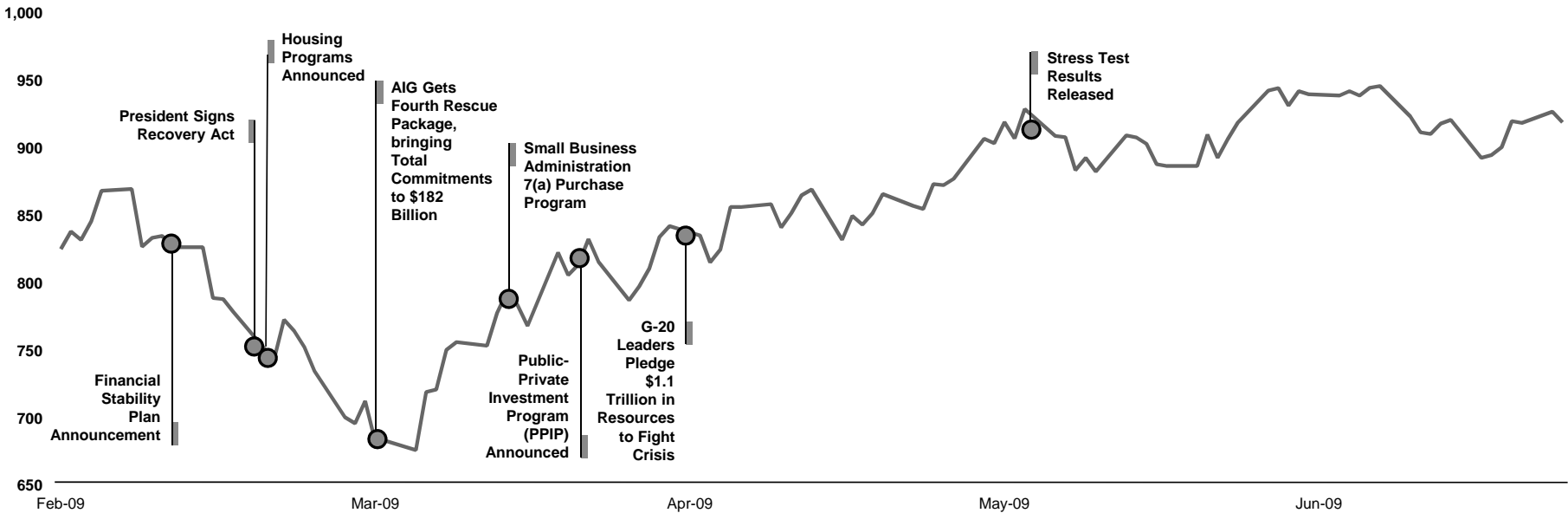
# **The Global Financial Crisis**

## **Module 9 The Policy Response**

### **07 Phase 04 Resolution: Market Developments February 2009 to June 2009**

# Phase 04 Policy Actions

Value of S&P 500 through June 2009



Support for Banks	
Shadow Banks + Markets	
Fiscal Policy	
Monetary Policy	
Rest of the World	

# Why Were Things Still So Bad

The Policy Zig-Zag

Preventing Failure/Haircuts	Allowing Failure/Haircuts
Bear Stearns	IndyMac
Fannie and Freddie (GSEs)	Lehman
AIG	Reserve Primary Fund
Money Market Fund Guarantee	Washington Mutual (WaMu)
Wachovia	

Why did this matter? Despite trillions in direct and indirect support, investors couldn't be certain about the quality of the money in the window.

# Home Prices

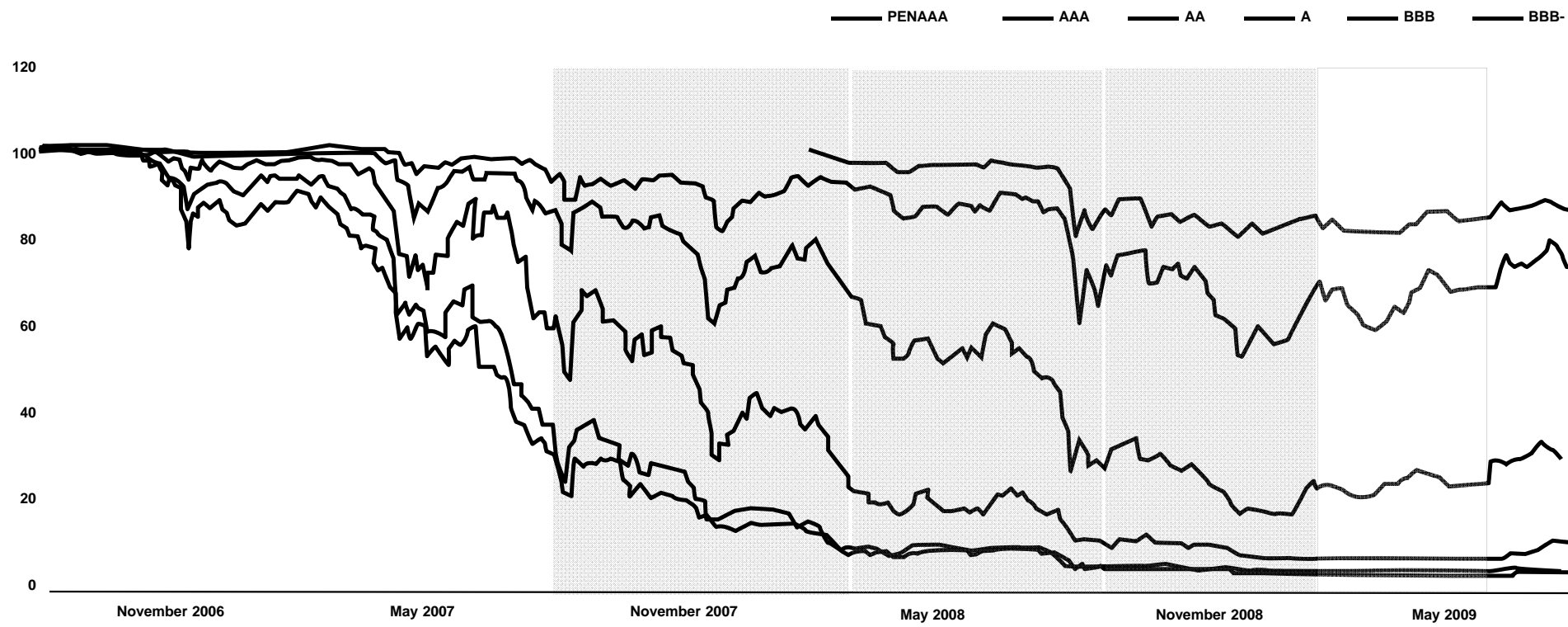
S&P Case-Shiller 20-City Home Price Index





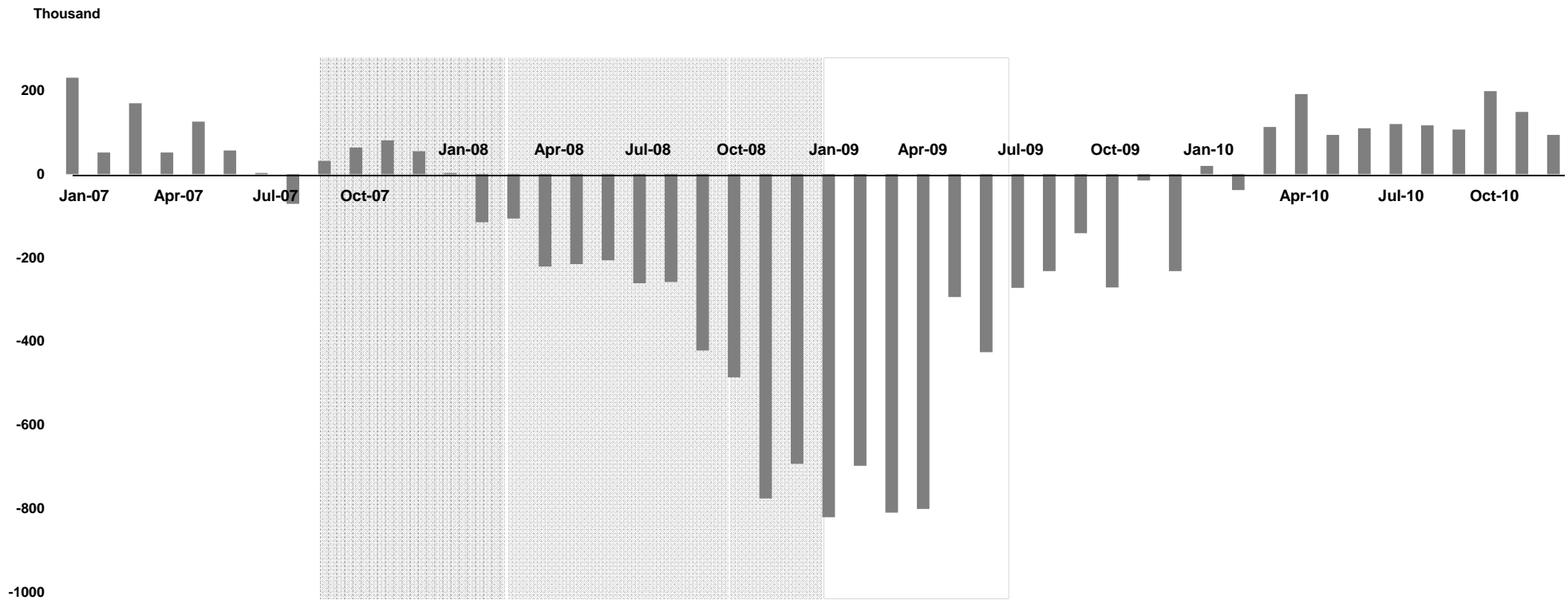
# Price of Mortgage Securities

ABX HE 06-1 Index of Subprime MBS



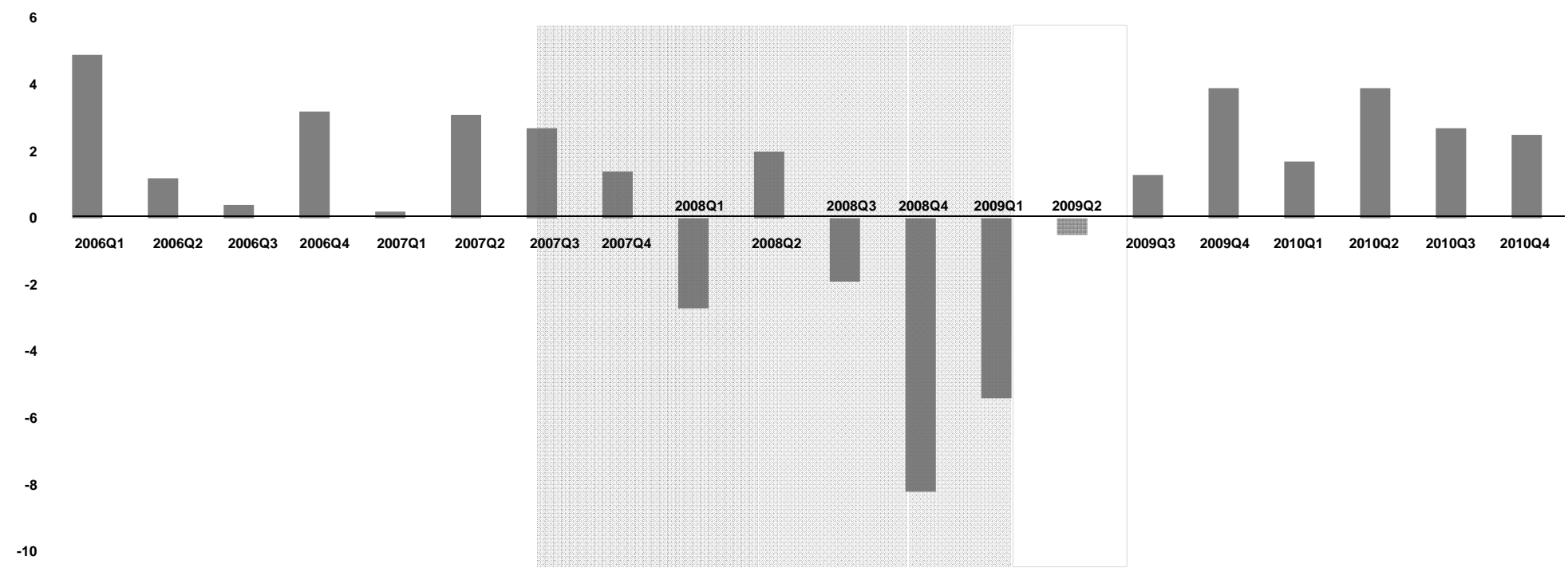
# Private Sector Job Growth/Losses

Monthly change in private nonfarm payrolls



# Economic Growth

Real quarterly GDP growth, seasonally adjusted at an annual rate



# **The Global Financial Crisis**

## **Module 9 The Policy Response**

### **08 Phase 04 Resolution: What We Did**

## **Phase 04 Resolution: What We Did**

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**Powell doctrine to revive growth—fiscal, monetary, financial**

**\$800 billion fiscal stimulus**

**Continued monetary stimulus: zero bound and quantitative easing**

**Coordinated global Keynesian response**

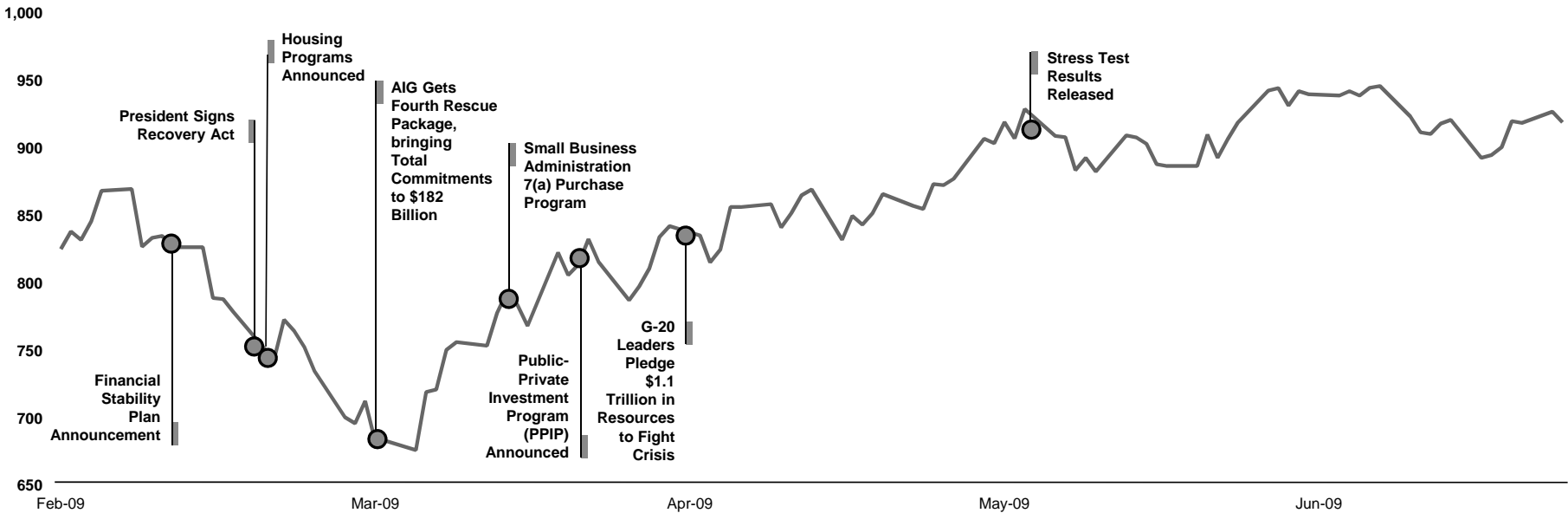
**Stress test to restore confidence and recapitalize the system**

**Expanded scope of backstop to credit markets**

**Hardened the guarantee of the banking system (BHCs and GSEs too)**

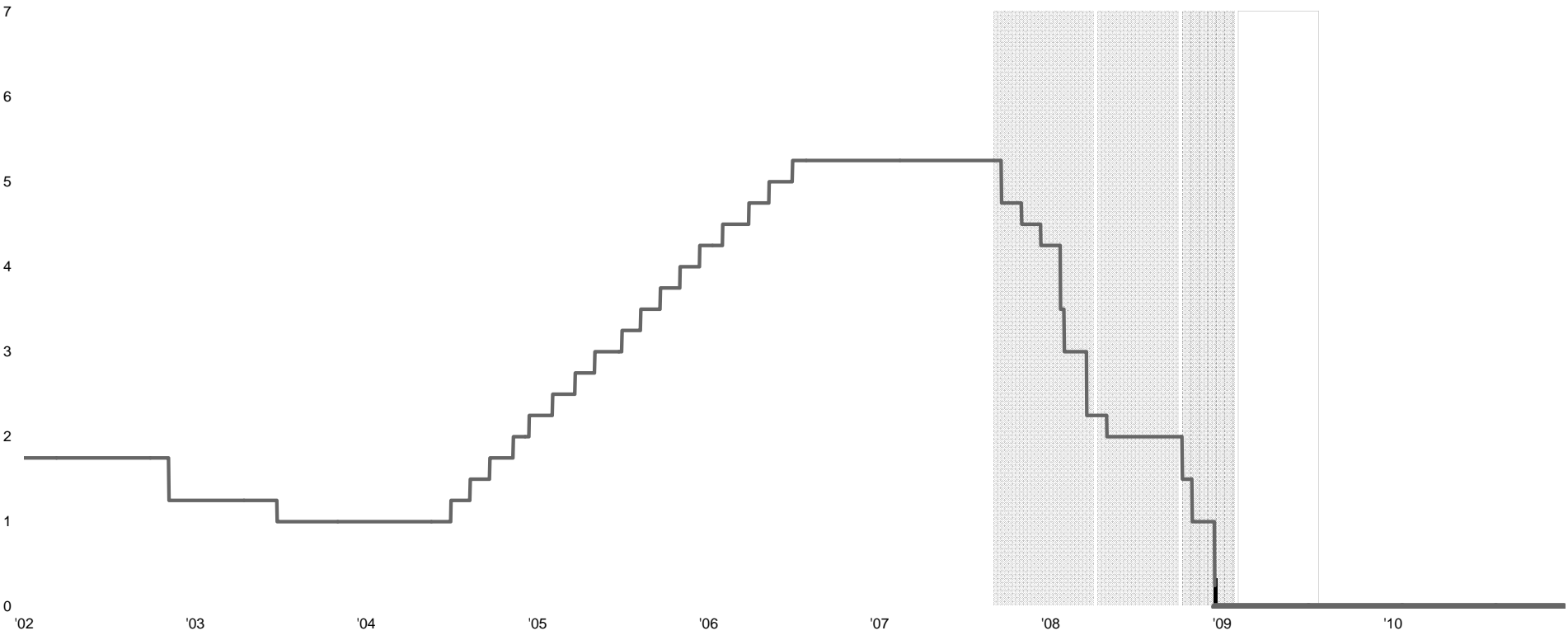
# Phase 04 Policy Actions

Value of S&P 500 through June 2009

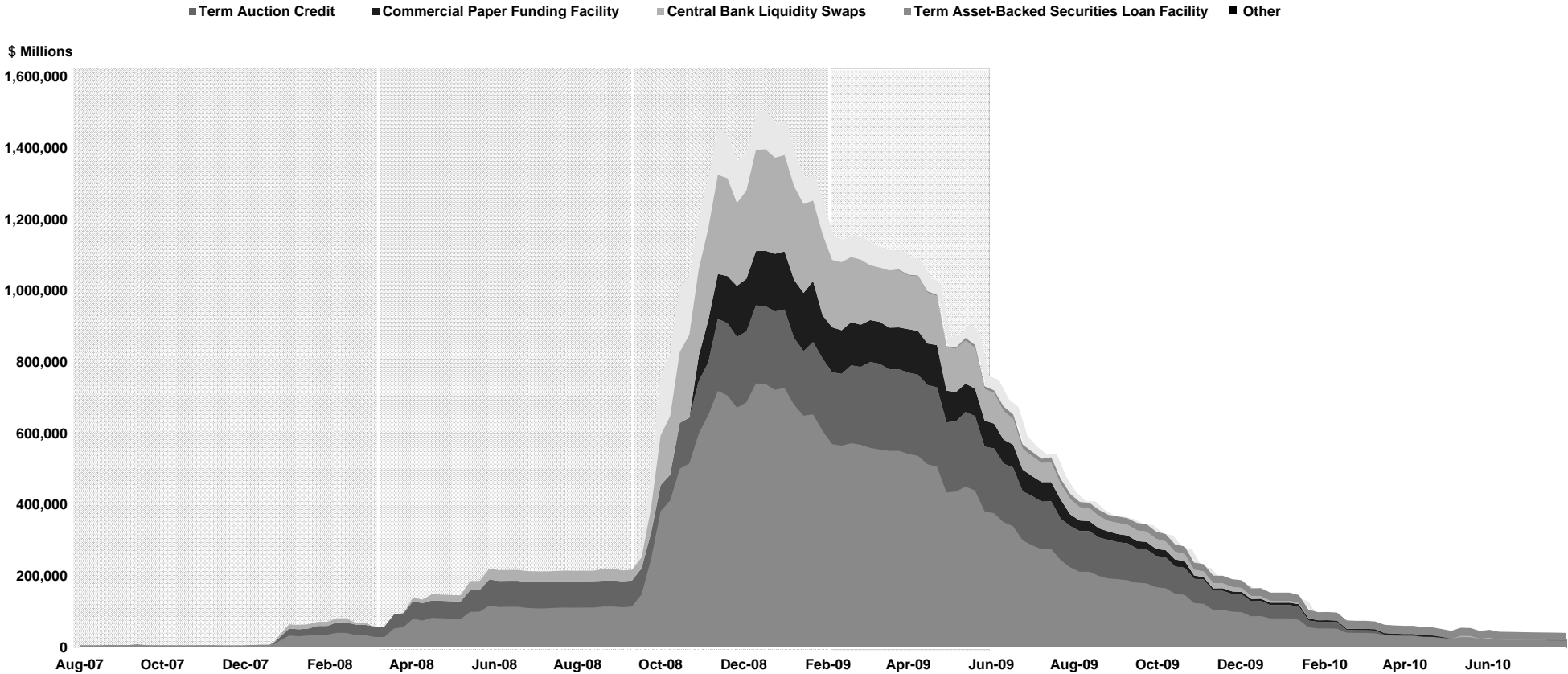


Support for Banks	
Shadow Banks + Markets	
Fiscal Policy	
Monetary Policy	
Rest of the World	

# Fed Funds Rate



# Fed Liquidity Facilities

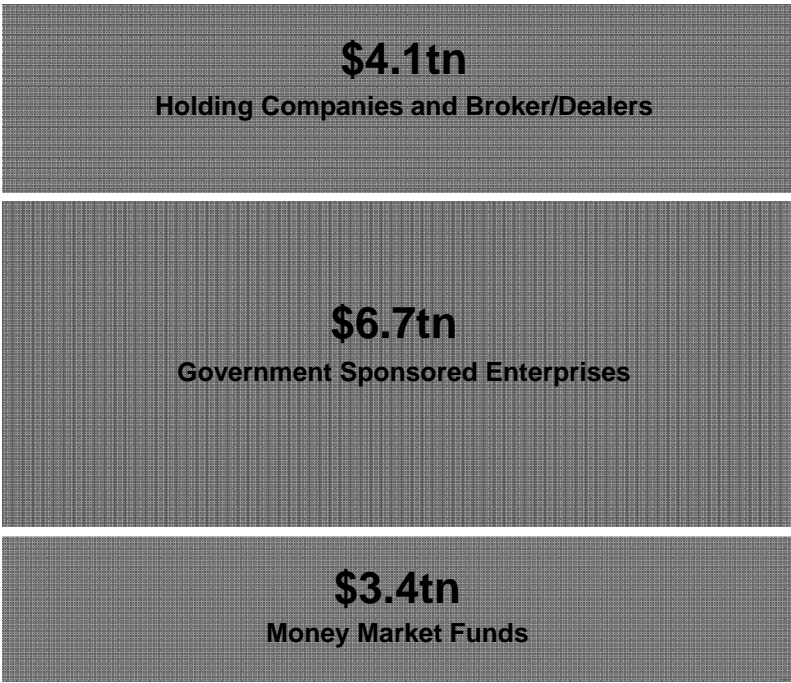




# Reach of Tools

End of Phase 04 June 2009

## Institutions



## Markets



# **The Global Financial Crisis**

## **Module 9 The Policy Response**

### **09 The Stress Test**

## **The Stress Test: How and Why Did It Work?**

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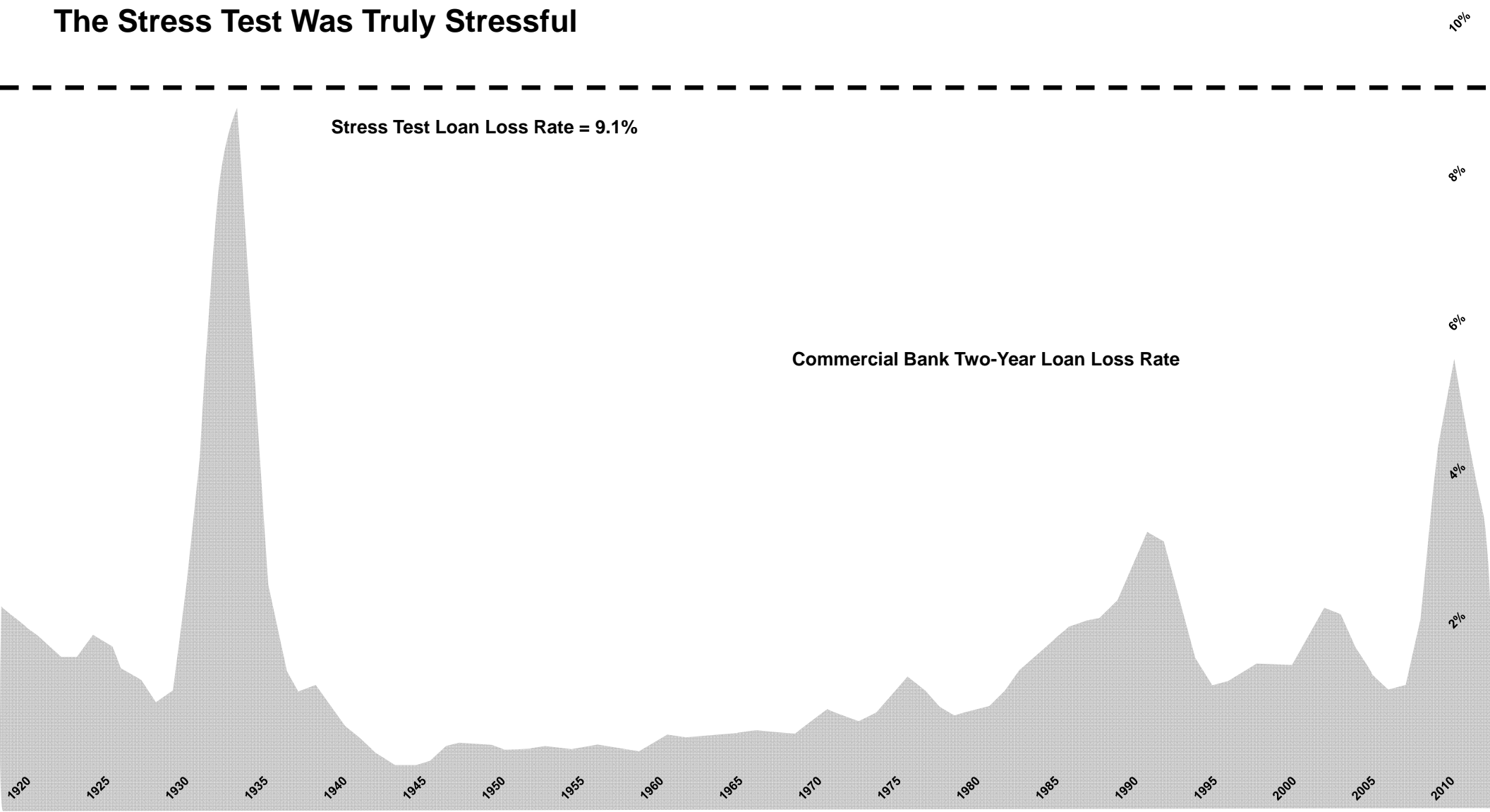
**Transparency, firm by firm, about losses in the extreme event.**

**Device for triage, for determining nationalization.**

**Tool for recapitalizing the financial system.**

**Helped maximize the chance that capital would come from the private sector.**

# The Stress Test Was Truly Stressful



# **The Stress Test Calmed Fears of Catastrophic Failure**

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## **Why did it work?**

**Loss estimates were credible.**

**We hardened the guarantees on liabilities.**

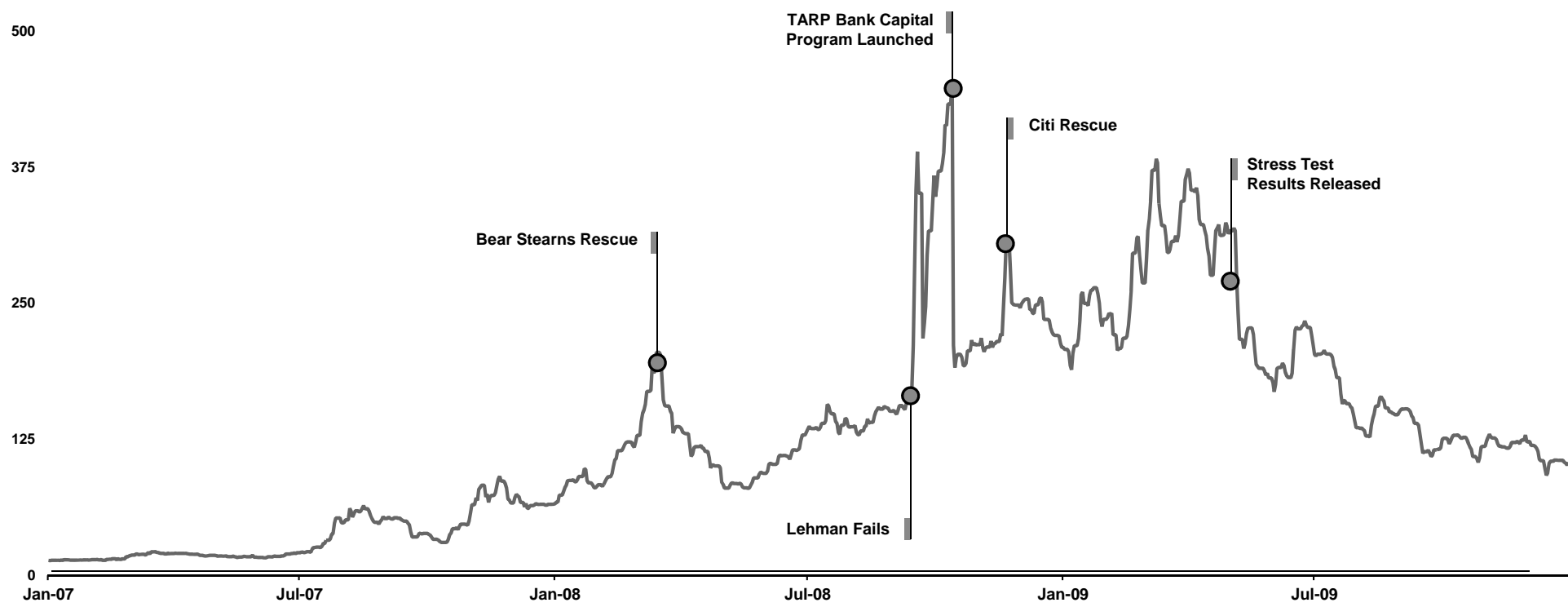
**Fiscal and monetary policy escalation got traction.**

**Confidence improved by global cooperation and massive mobilization of dollar-based financial support for EM.**

**We put enough money in the window.**

# The Stress Test Calmed Fears of Catastrophic Failure

Average CDS of Large Financial Institutions



## Summary

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**Escalated slowly and messily**

**Eventually moved to overwhelming force**

**That wasn't enough to prevent massive economic damage**

**Felt like a long time—but in the arc of history, we put out the financial fire and restored economic growth remarkably quickly**

**In some ways, did the opposite of the policy strategy in the Great Depression**

**Avoided "Sweden" (full nationalization) and "Japan" (drift and forbearance)**

# **The Global Financial Crisis**

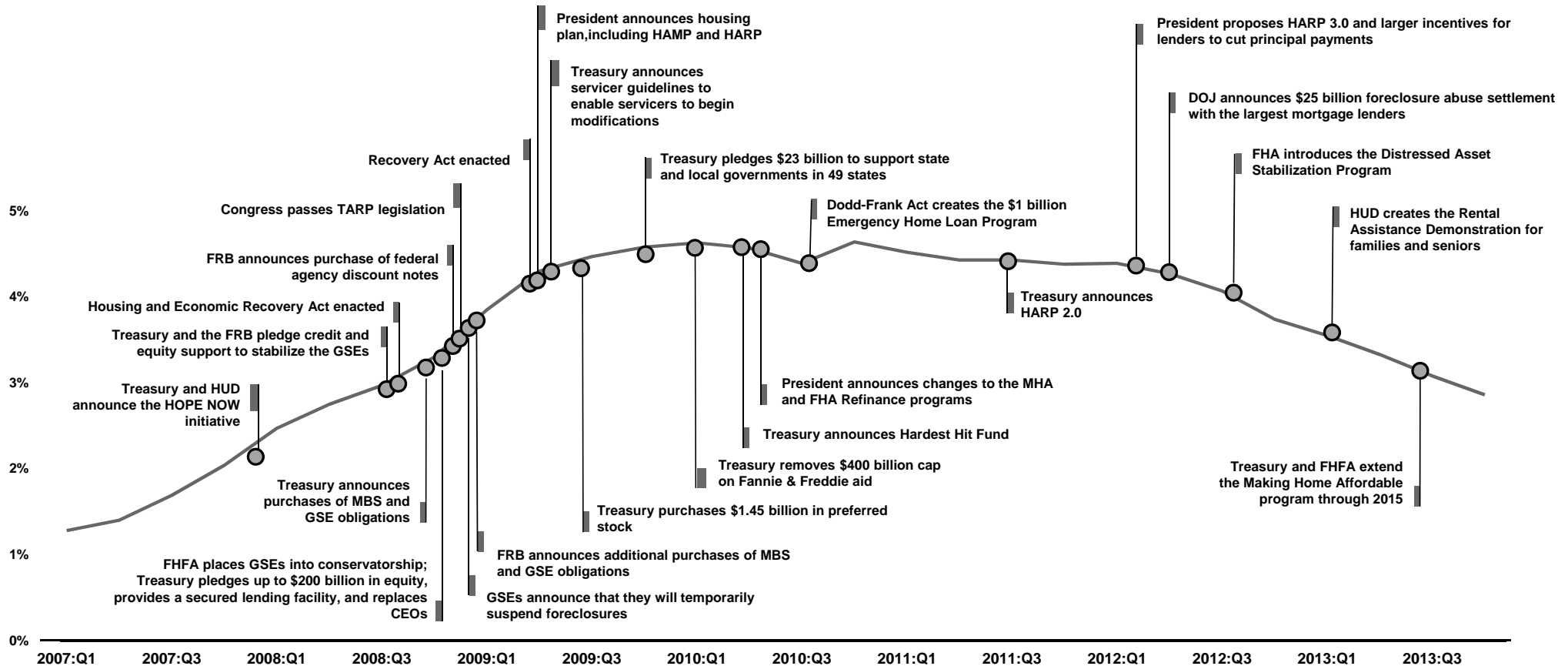
## **Module 9 The Policy Response**

### **10 Housing Response**



# Housing Policy Actions

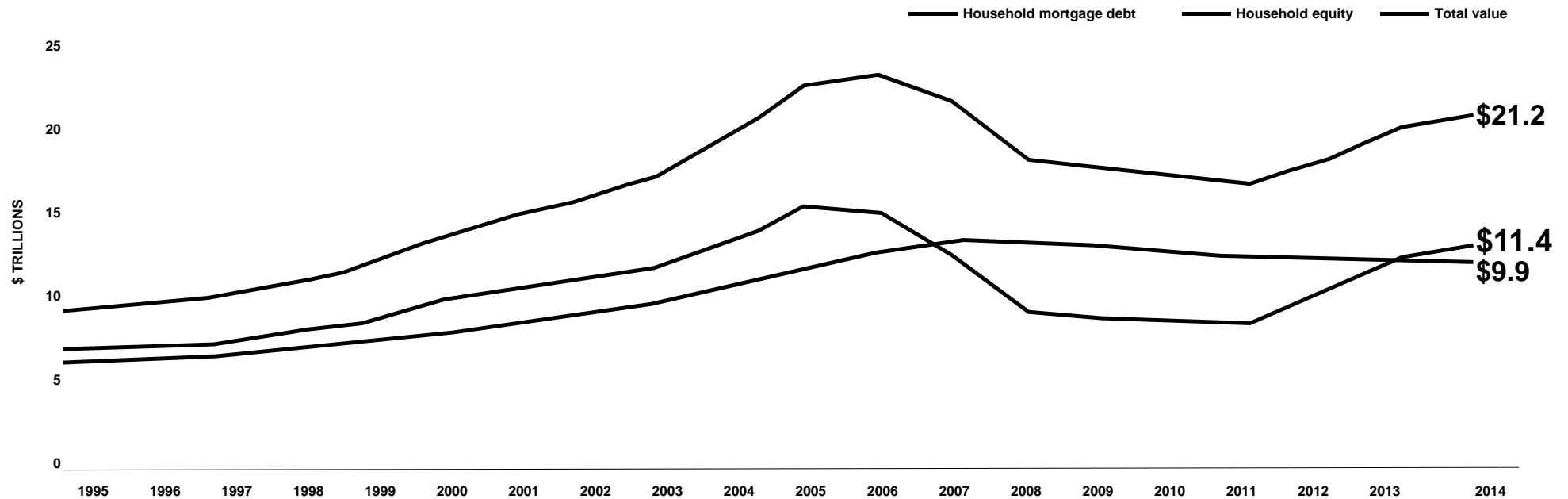
## Mortgage Foreclosure Inventory



## What Went Wrong?

Home prices skyrocketed, people borrowed more than they could afford, and then millions lost their jobs

By the fall of 2009, nearly 9 million Americans lost their jobs and 1 in 5 mortgages were underwater; 2 million mortgages were in foreclosure, and another 7 million were at serious risk of foreclosure



## Housing Objectives

**01**

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**Arrest Drop in Home  
Prices—Stop Wealth  
and Savings from  
Disappearing**

**02**

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**Keep Mortgage Rates  
Low—Help Families  
Continue to Access  
Credit**

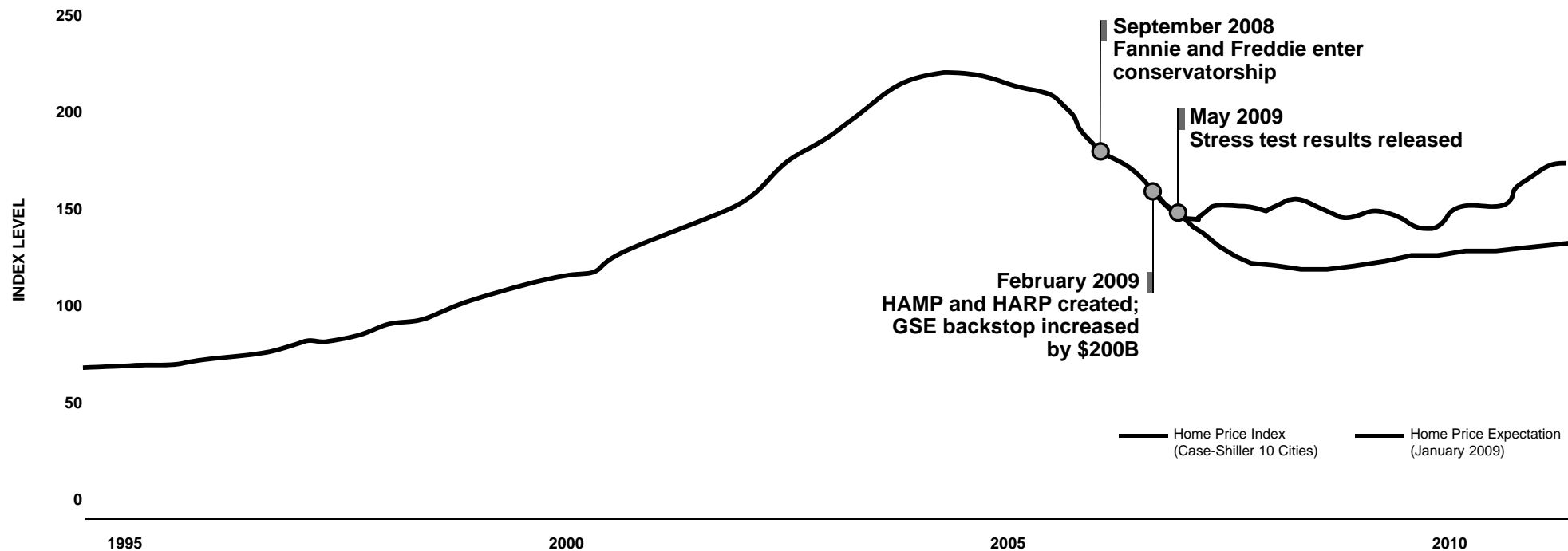
**03**

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**Provide Targeted  
Foreclosure Relief:  
Help Families Stay  
in Their Homes**

# Government programs helped stabilize home prices

Government actions stabilized prices in 2009 and by 2012 prices began to recover



## Housing Objectives

**01**

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**Arrest Drop in Home  
Prices—Stop Wealth  
and Savings from  
Disappearing**

**02**

---

**Keep Mortgage Rates  
Low—Help Families  
Continue to Access  
Credit**

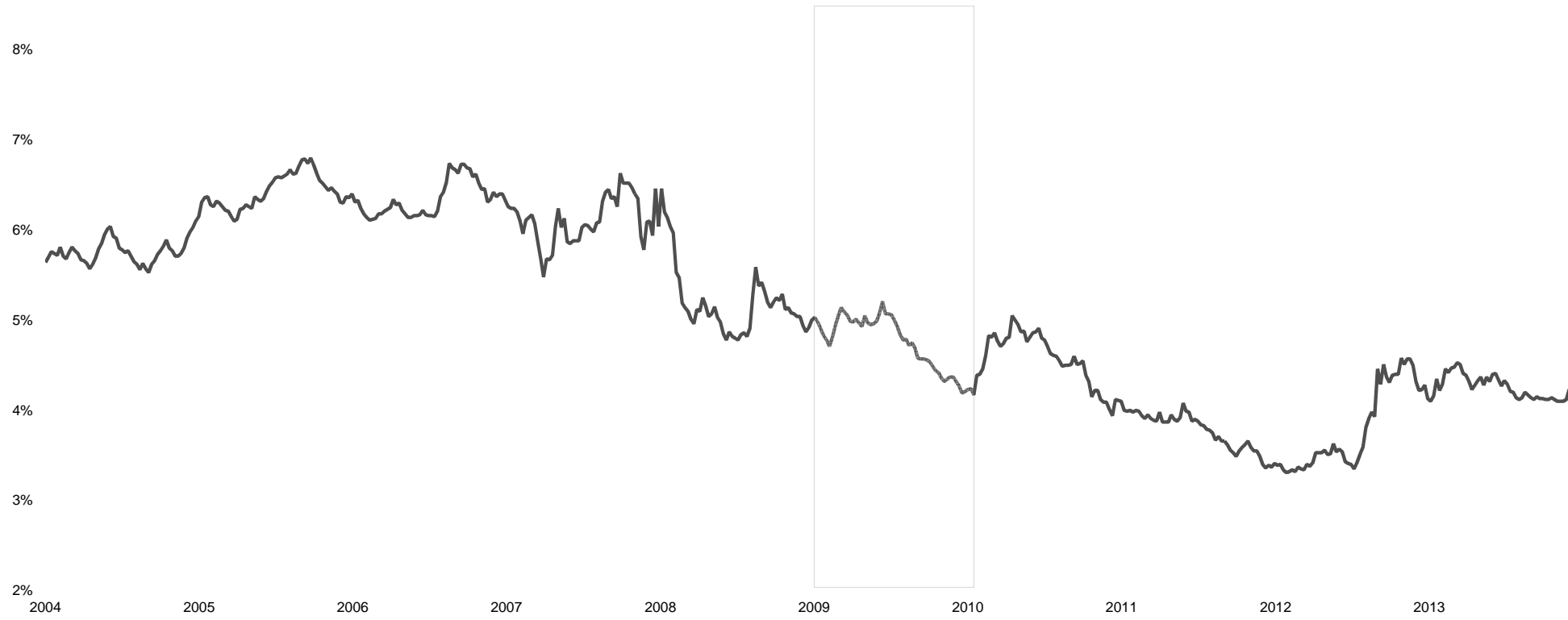
**03**

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**Provide Targeted  
Foreclosure Relief:  
Help Families Stay  
in Their Homes**

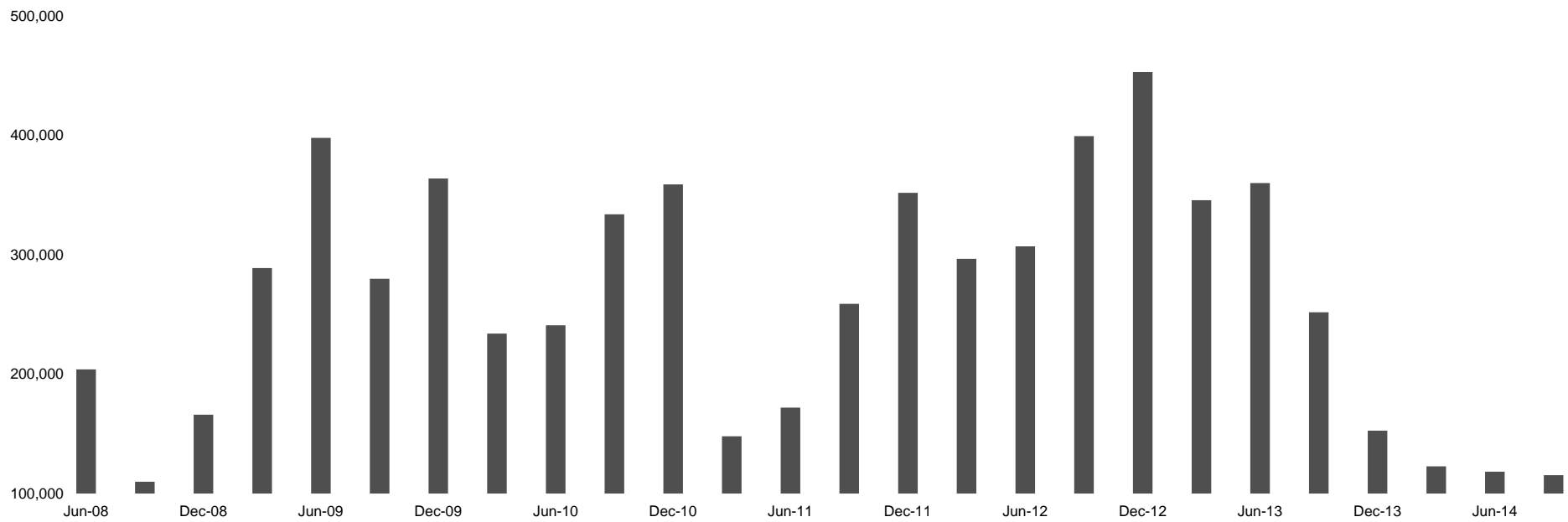
# Government efforts to keep low rates allowed families to access credit

Conventional 30-year mortgage rates



Since April 2009, 27.9 million homeowners have refinanced.  
The average household saves \$3,000 each year.

Quarterly refinancing mortgage originations (millions of dollars)



## **Housing Objectives**

**01**

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**Arrest Drop in Home  
Prices—Stop Wealth  
and Savings from  
Disappearing**

**02**

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**Keep Mortgage Rates  
Low—Help Families  
Continue to Access  
Credit**

**03**

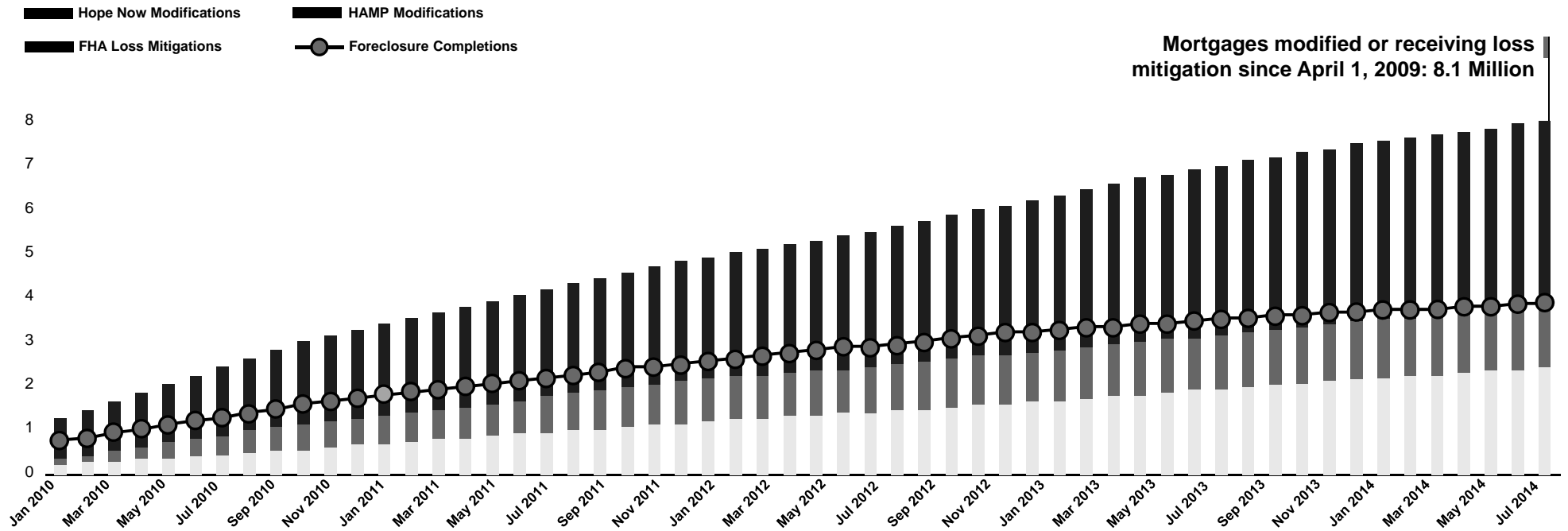
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**Provide Targeted  
Foreclosure Relief:  
Help Families Stay  
in Their Homes**



# Mortgage Aid Extended Nearly 8.1 Million Times Outpacing Foreclosures

Cumulative mortgages receiving aid and mortgages foreclosed since April 1, 2009 (millions)



Data excludes trial modifications. Hope Now data through July 2014, all other data through August 2014.  
Source: HUD

## **Key Policy Constraints**

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### **We Could Not**

**Discharge homeowner debt in bankruptcy—“cramdown”  
legislation failed twice**

**Create a “Home Owners' Loan Corporation”—exceptionally  
complicated and Congressional action was needed**

**Start another mortgage refinancing program—again,  
required legislation**

**Undertake widespread mortgage debt forgiveness—  
Administration pursued targeted “principal reduction”  
but we couldn’t force FHFA to use its authority**

**We needed greater resources and authority to alleviate  
the pain of homeowners**

# Widespread principal reduction wasn't good "bang for the buck"

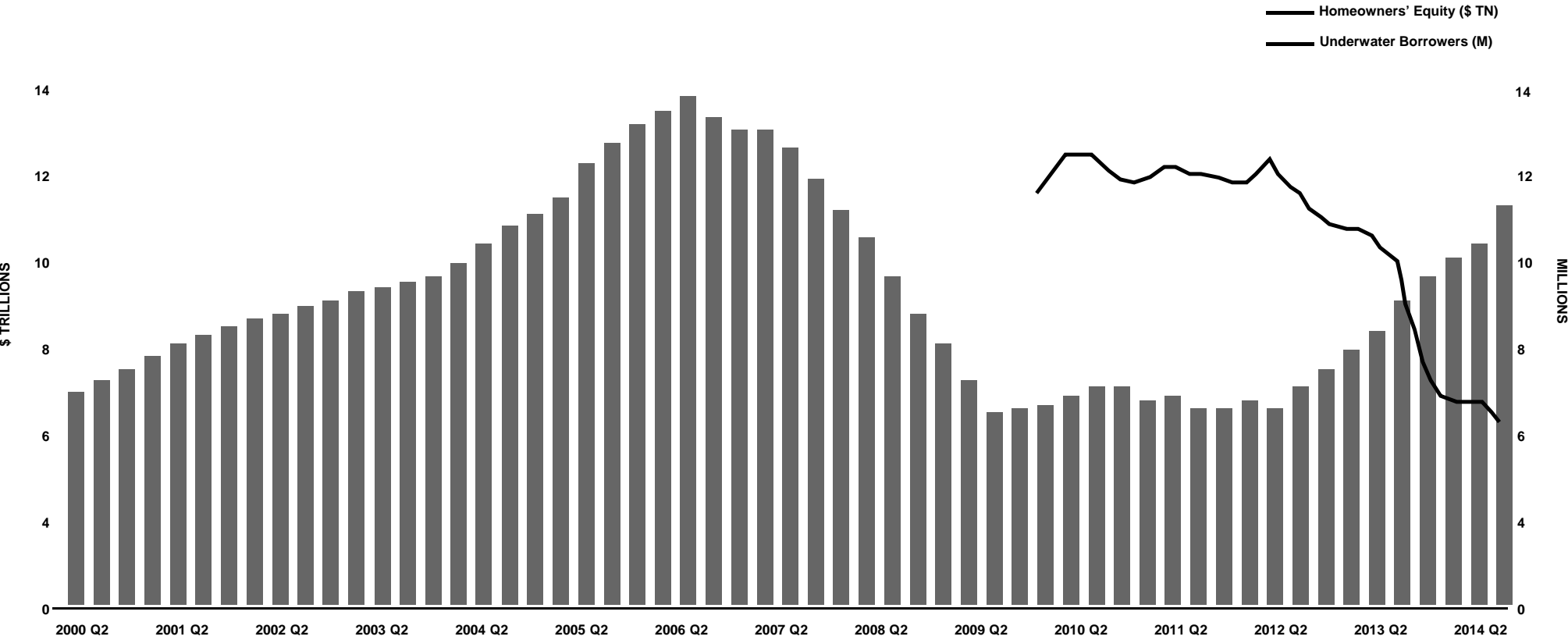
Estimated dollars to create one job

Auto Rescue	Direct Spending	State Fiscal Relief	Tax Cuts	Principal Reduction
\$14,000	\$92,136	\$116,603	\$145,351	\$1,500,000

We focused on getting cash to homeowners and renters through unemployment benefits, tax cuts, state and local spending, and other programs. Through HAMP and FHA, we did payment reductions, paired with targeted principal reduction.

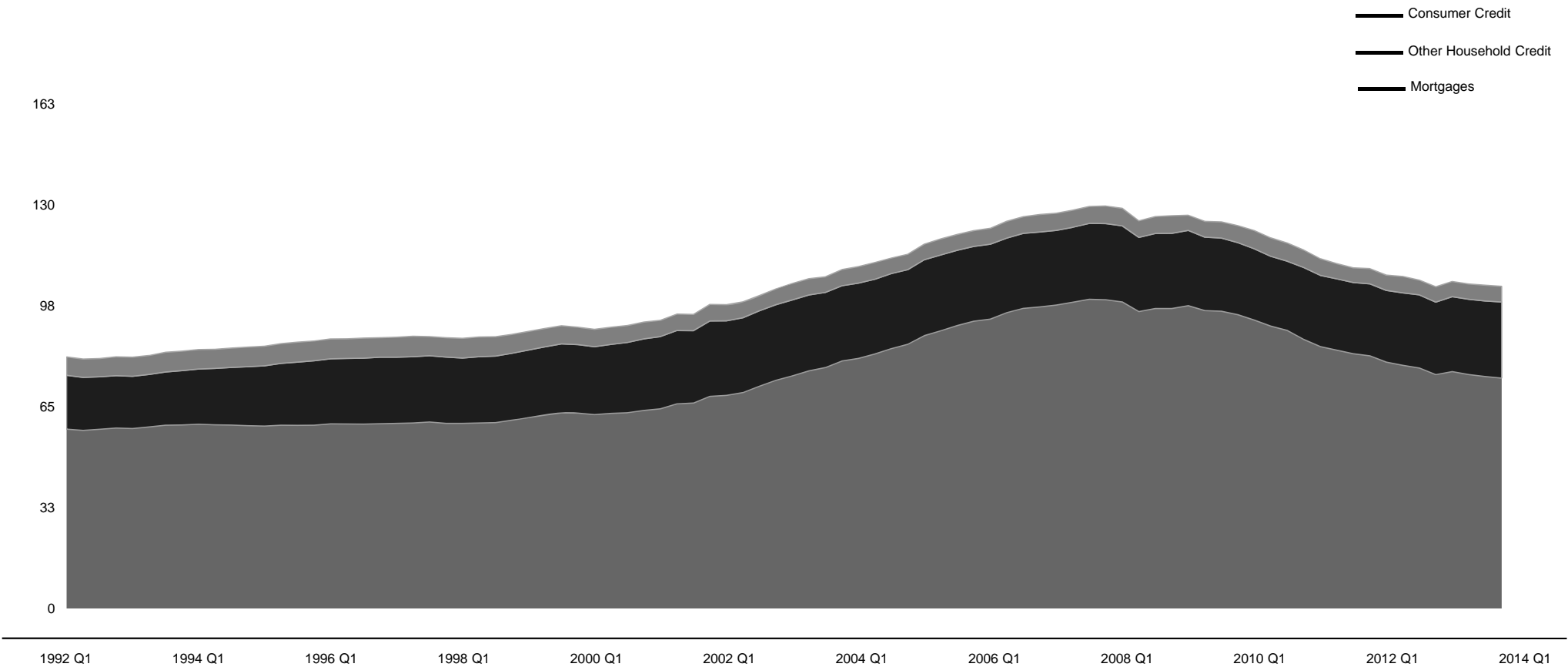
# Where we are today

Homeowners' equity has sharp gains since 2011, as the number of underwater borrowers falls



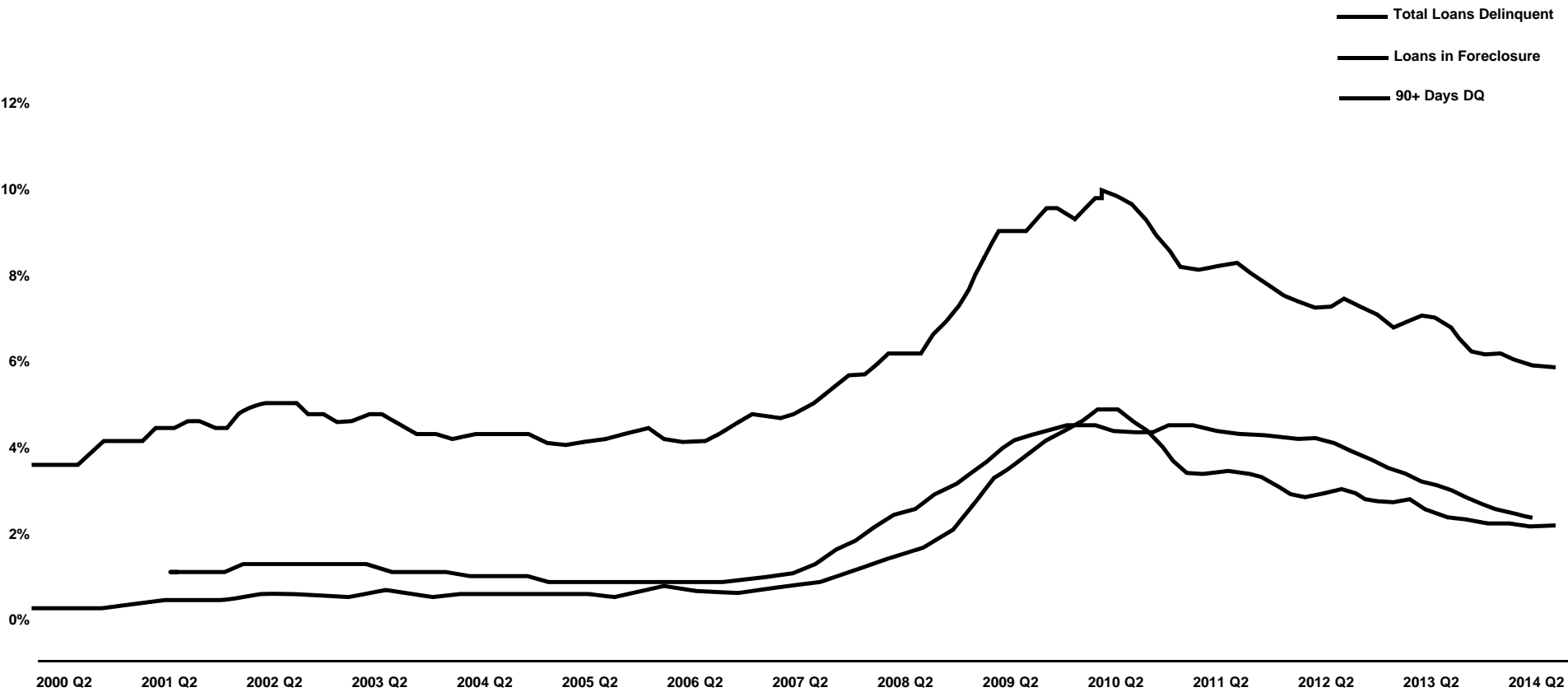
# Household debt is down relative to income, but a large overhang remains

Household debt as a percent of disposable income



# Mortgage delinquency rates and loans in foreclosure continue downward trend

Foreclosures have declined to 1.4 percent, the lowest level since the first quarter of 2008



# Housing Policy Actions

## Mortgage Foreclosure Inventory

