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An Evaluation of Federal and State Homebuyer Tax Incentives

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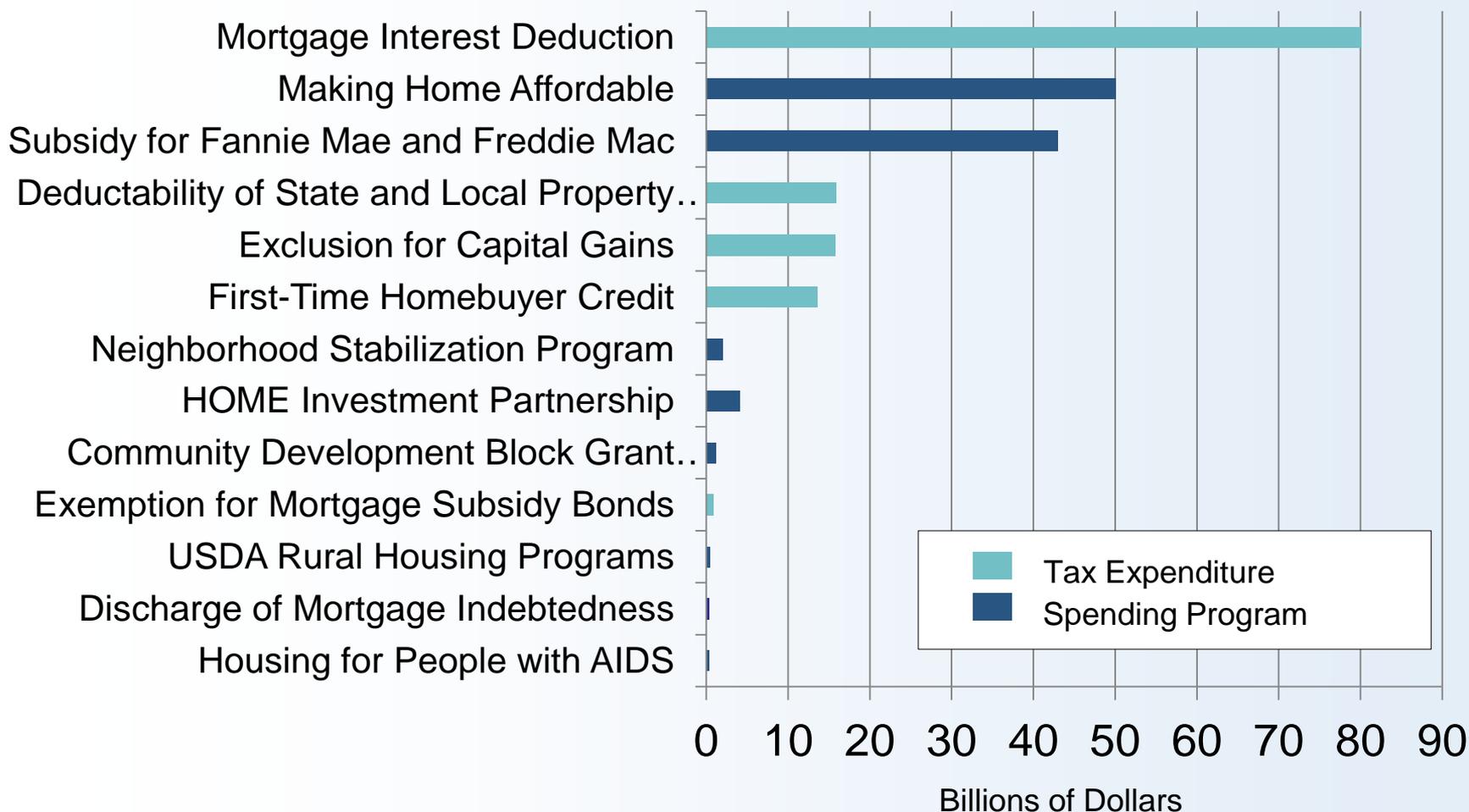
Major Phases of the Homebuyer Tax Credit

	Housing and Economic Recovery Act of 2008	American Recovery and Reinvestment Act of 2009	Worker, Homeownership, and Business Assistance Act of 2009
Eligible purchase dates	Apr. 8, 2008 - Dec. 31, 2008	Jan. 1, 2009 - Nov. 30, 2009	Nov. 7, 2009 – Apr. 30, 2010 (contract) Nov. 7, 2009 – Jun. 30, 2010 (closing) Deadline extended to Sep. 30, 2010
Buyer type	First-time	First-time	First-time and repeat (if they have been in their home for 5 years)
Maximum amount	\$7,500	\$8,000	\$8,000 (first-time) \$6,500 (repeat)
Income phase-out (thousands)	Single: \$75-95 Joint: \$150-170	Single: \$75-95 Joint: \$150-170	Single: \$125-145 Joint: \$225-245
Repayment required	Yes	No	No
Maximum purchase price	None	None	\$800,000

Homebuyer Tax Credit Take-up by Major Program Phase through July 3, 2010

Program phase	Time range	Number of credits	Amount claimed (millions of dollars)
HERA	Apr. 8, 2008 – Dec. 31, 2008	1,069,150	\$7,300
ARRA	Jan. 1, 2009 – Nov. 30, 2009	1,669,081	\$12,119
WHBAA			
First-time	Nov. 30, 2009 – Sep. 30, 2010	398,545	\$2,947
Repeat	Nov. 7, 2009 – Sep. 30, 2010	185,014	\$1,155
Total		583,559	\$4,101

Federal Support for Homeownership, 2009



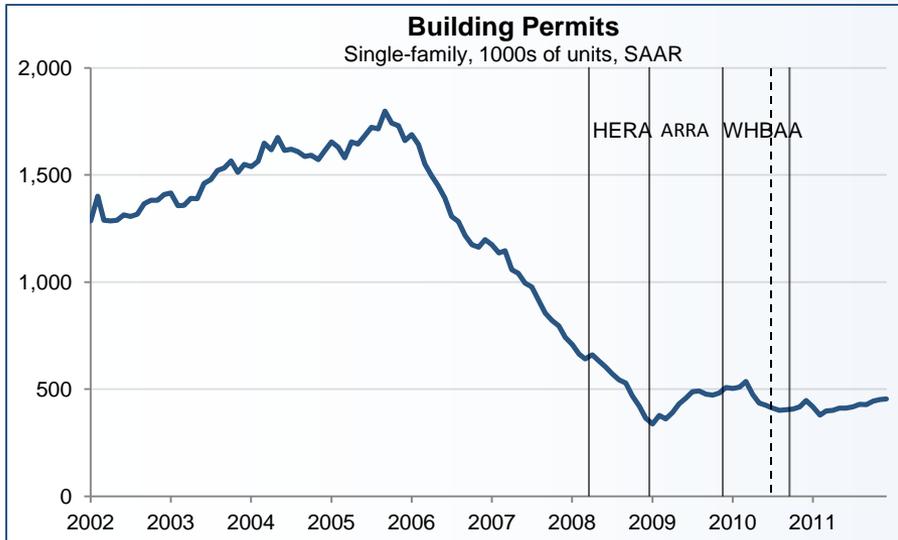
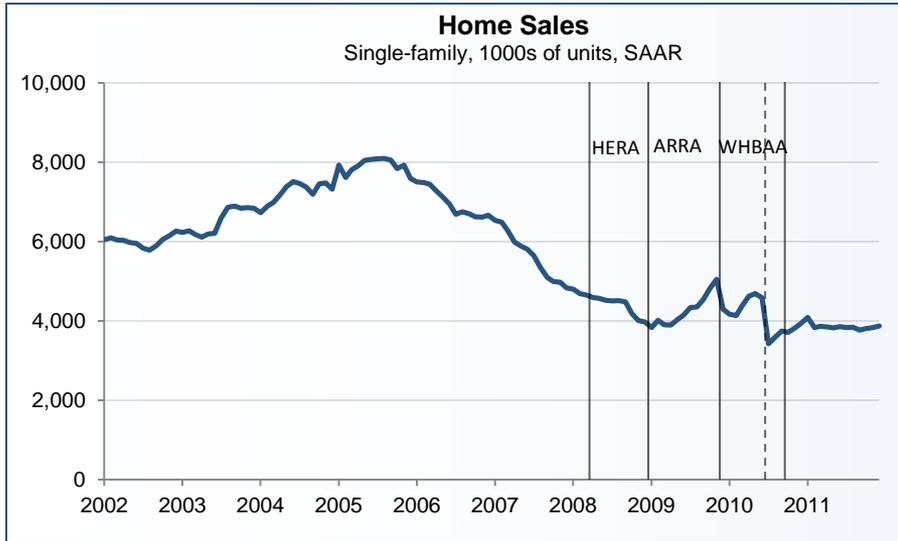
Complementary State Programs

State	Type of program	Amount		Interest rate	Program start	Program end	Loan due
		% price	Max.				
Colorado	Loan	3.5	6000	0	Jan-09	Jun-10	Dec-10
Florida	Loan		8000	0	May-09	Jun-10	Jun-10
Idaho	Loan	5	7000	3	Mar-09	Jun-10	Jul-10
Illinois	Loan	3.5	6000	0	Jul-09	Nov-09	Jun-10
Kentucky	Loan		4500	0	May-09	Nov-09	Jul-10
Massachusetts	Loan		8000	0	Jul-09	Nov-09	Jun-10
Missouri	Loan	6	6750	0	Jan-09	Nov-09	Jun-10
Nebraska	Loan	8.5	6800	5	Dec-09	Jun-10	Dec-10
New Jersey	Loan	10	5000	0	Apr-09	Dec-09	Jun-10
New Mexico	Loan	8	6500	0	Apr-09	Dec-09	Jun-10
New York	Loan	10	8000	0	Jan-10	Jun-10	Jun-11
Ohio	Loan	3		0	Jan-09	Nov-09	Aug-10
Oklahoma	Loan	6	6000	2	Aug-09	Nov-09	Dec-09
Pennsylvania	Loan	10	5500	0	Jan-09	Nov-09	Jun-10
South Dakota	Loan	6	6000	0	Jun-09	Nov-09	Jul-10
Tennessee	Loan	3.5		0	Apr-09	Nov-09	Jun-10
Texas	Loan	5	7000	0	Jul-09	Dec-09	Mar-10
Virginia	Loan	5		0	Jun-09	Jun-10	Jun-11
California	Credit	5	10,000	n/a	Mar-09	Aug-10	n/a
Georgia	Credit	1.2	1800	n/a	Jun-09	Nov-09	n/a
Maine	Grant	4	5000	n/a	Jun-09	unclear	n/a
Utah	Grant	n/a	6000	n/a	Mar-09	Nov-09	n/a

How Might a Homebuyer Tax Credit Affect the Economy?

- **Higher home prices create “housing wealth effects”**
 - » Housing capital gains induce homeowners to raise their consumption of non-housing goods and services
- **Higher home prices reduce foreclosures**
 - » Homeowners who gain equity when home prices rise might be able to sell their homes and pay off their loans instead of defaulting on their mortgages
- **Higher home prices facilitate refinancing**
 - » If homeowners refinance into lower rate loans, they can reduce their mortgage payments and increase their cash on hand
- **Reductions in unpurchased homes encourage new construction**
 - » An increase in housing demand could absorb all excess inventory in an ailing housing market which could result in more construction
- **Higher income stimulates broader demand**
 - » Additional cash flow (from wealth effects, refinancing, the tax credit, and higher incomes of those involved with real estate) should lead to more demand for non-housing goods and services

Housing Market Indicators, 2002-2011

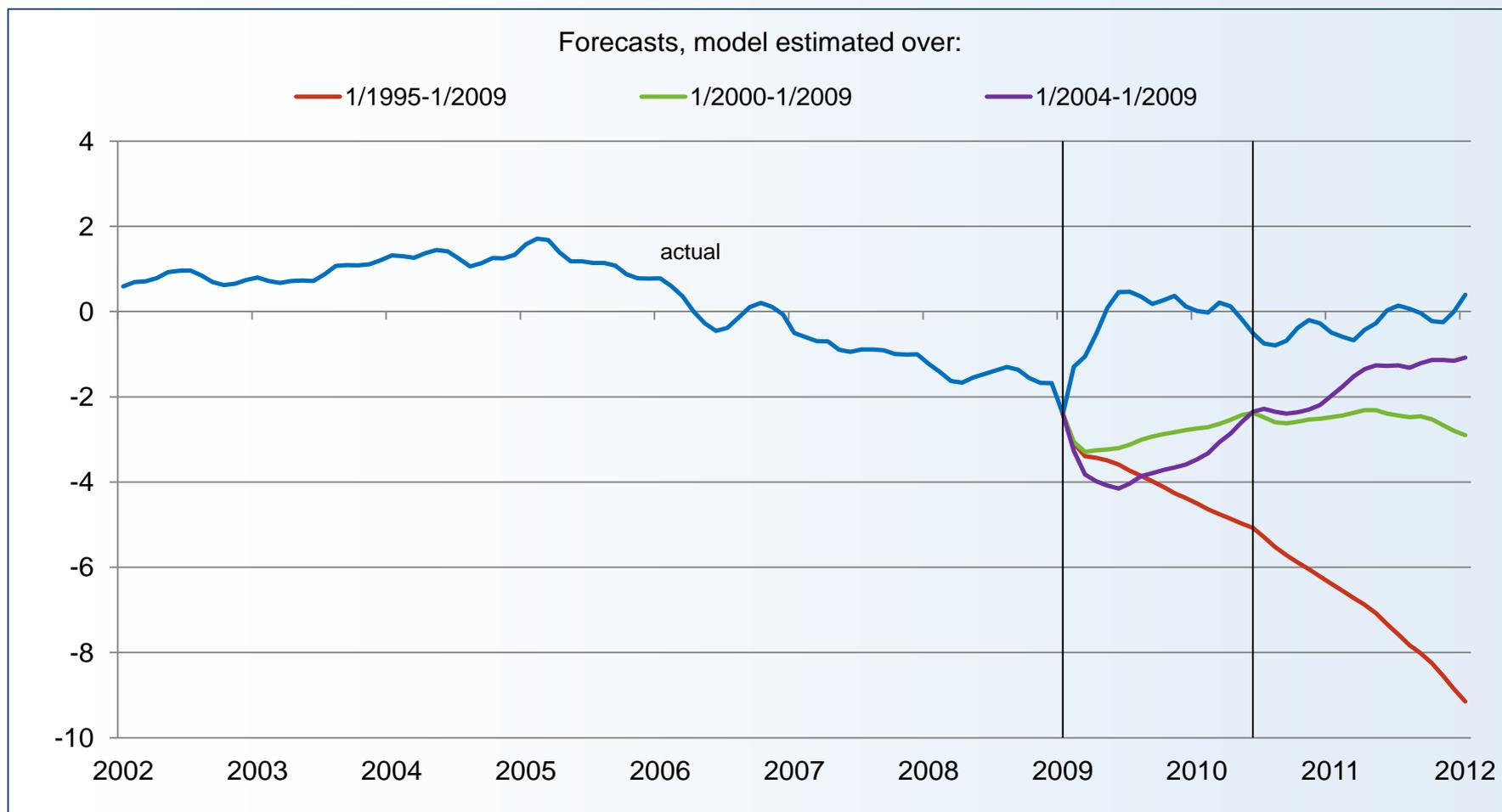


Formal Analysis of Macro Data

- Identification problem: ARRA homebuyer tax credit coincided with other significant policy and economic developments.
- To try to isolate:
 - » Estimate simple time-series models relating housing indicators to “fundamentals.”
 - » Dynamically forecast indicators starting at time at which ARRA was passed.
 - » Compare forecast to actual values.
- Should put an upper bound on macro effects of homebuyer tax credit program (given that we cannot control for everything else supporting the housing market at this point).

Percent Changes in Monthly Home Prices

Actual versus Forecast



Formal Analysis of State-Level Homebuyer Assistance Program

- Grant-like programs of interest because they are state-level versions of federal programs.
- Bridge-loan programs of interest because they are aimed at amplifying effects of federal program.
- Regression using state panel data set:
$$\begin{aligned} \ln(\text{outcome})_{s,t} &= \alpha + \beta_1 \text{activeProgram}_{s,t} + \beta_2 \text{unemp}_{s,t} \\ &+ \beta_3 \ln(\Delta \text{payroll})_{s,t} + \text{state}_s + \text{month}_t + \varepsilon_{s,t} \end{aligned}$$
 - » Outcomes = home sales, home prices, building permits, construction employment
 - » Also included full set of state and time fixed effects
- Limitation: programs so heterogeneous that we were not able to put the benefit to households on a uniform basis.

Regression Results for State Programs

VARIABLES	Insales	Inhpi	Inpermits	Inconstemp
Active program	0.0263** (0.0127)	0.00688* (0.00353)	-0.0270 (0.0212)	-0.000666 (0.00432)
Post program	0.0222 (0.0142)	0.00796** (0.00394)	-0.0322 (0.0238)	0.00194 (0.00487)
UR	0.00641 (0.00479)	-0.0372*** (0.00133)	-0.0673*** (0.00803)	-0.0540*** (0.00163)
Δ Ln(payload)	12.81*** (2.258)	-6.563*** (0.628)	2.482 (3.785)	-6.875*** (0.784)
State FE	X	X	X	X
Month FE	X	X	X	X
Constant	6.762*** (0.0402)	5.359*** (0.0112)	4.755*** (0.0674)	3.190*** (0.0135)
Observations	2,401	2,401	2,401	2,107
R-squared	0.987	0.962	0.955	0.998

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

Summary of Results

- The HERA homebuyer tax credit, which was essentially an interest-free loan, did little to stop the deterioration of the housing market conditions.
- The ARRA homebuyer tax credit coincided with an abrupt stabilization in housing market but hard to isolate effects of the credit given the other important policy and economic developments occurring at the same time.
- Based on analysis of the federal and state level programs we conclude that the credits provided a modest boost to home sales and home prices while they were available, with some of the changes subsequently partially reversed.