Securitization and the Real Economy

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Motivation

Focus

This paper examines the impact of securitization on the ability of monetary policy to influence the real economy.

- Mortgage, consumer credit, and business loan securitization markets
- Funding, liquidity, and diversification benefits

Questions Addressed

- Does the presence of securitized assets impact the sensitivity of output to monetary policy changes?
- Is the influence of the three securitization markets on output the same?
- Is there a difference from the presence of agency versus private-label securitized assets?
- What may be some reasons for different impacts of securitization markets on output sensitivity?

Securitization Market

Table 1: Securitization Market (amounts outstanding, billions of USD)[a]

Instrument	2000	2005	2007	2009	2012
Mortgage-backed securities:[b]					
agency	2,493.2	3,548.5	4,464.4	5,376.7	1,437.0
private-label	622.0	2,300.2	3,090.7	2,293.2	1,538.7
Asset-backed securities:[b]					
consumer credit	827.9	614.1	686.8	574.8	49.9
business loans	173.1	193.6	205.3	115.7	43.0
Other asset-backed securities:[c]					
equipment	25.0	26.2	28.3	15.9	18.6
home equity	346.3	843.2	1,040.2	679.9	469.4
manufactured housing	51.1	29.4	22.6	18.0	13.2
CDOs/mixed assets	236.6	585.1	1,145.9	965.8	394.6
Memo:[b] total bank credit	5,200.8	7,528.9	9,201.0	9,131.1	9,815.1
Memo:[b] nonfinancial corporate debt	4,535.4	5,510.3	7,198.5	7329.5	8,704.7

[a] Adapted from Committee on the Global Financial System (2003), Table 2.

[b] Federal Reserve Flow of Funds.

[c] Securities Industry and Financial Markets Association (SIFMA).

Securitization Components

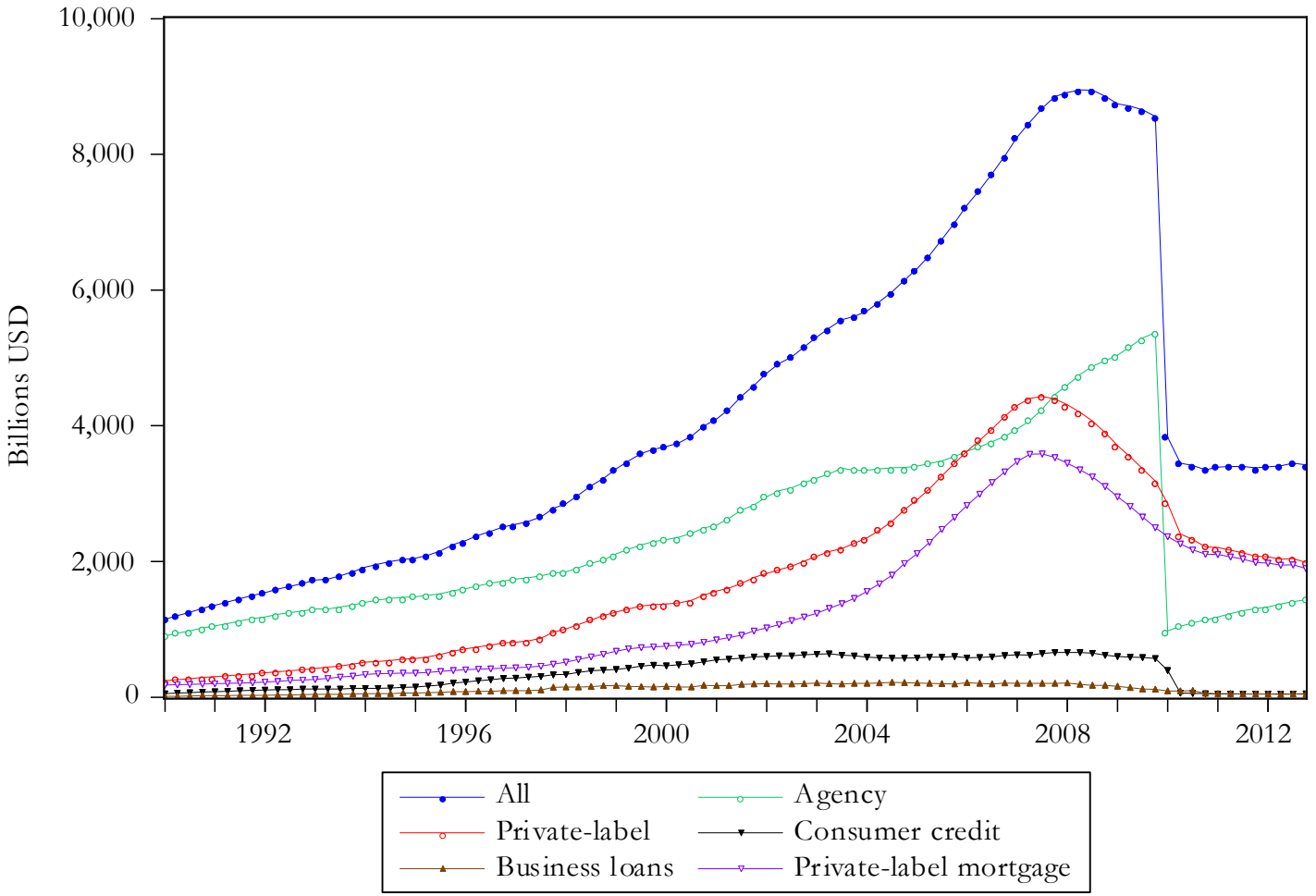

Figure 1: Securitized asset markets/types

Conventional Theoretical Framework

The two credit channels of the transmission mechanism rely on credit market imperfections to link financial factors and real economic activity.

Bank Lending Channel (Bernanke and Blinder, 1988)

- Focus is on the financial condition of banks that supply credit
- There are two key conditions for this channel:
  - Banks cannot insulate the supply of loans from policy actions
  - Some borrowers cannot costlessly replace bank loans

Balance Sheet Channel (Bernanke and Gertler, 1989)

- Focus is on the financial condition of all borrowers, which affects their cost of credit
- Key theoretical prediction that external finance premium depends inversely on borrower net worth
- Policy actions affect premium through borrower net worth

Unified Theoretical Framework

Securitization and Credit Channels

- Growth and access to nonreservable funding for banks; increase in nonbanks
- Banks can raise funds as other borrowers at cost reflecting financial condition

Reframed Lending Channel (Disyatat, 2011)

- Two credit channels unified through the external finance premium
- Financial condition of banks as borrowers on credit markets relevant
- Cost of uninsured funds influences the availability and terms of credit that banks extend as lenders
- Policy actions affect market-sensitive funding costs through external finance premium
- Changes of risk tolerance of banks from policy actions enhance bank funding cost effects

Related Literature and Contribution

Related empirical work looks at the impact of securitization on loan supply and individual market activity.

Related Studies

- Kuttner (2000)—securitized single-family mortgages and economic downturns
- Cantor and Demsetz (1993)—three securitization markets and 1990 recession
- Altunbas et al. (2009)—securitized European bank loans, cyclical downturns, and bank risk
- Estrella (2002)—securitized single/multi-family mortgages and output sensitivity

Contribution

- Macroeconomic effects of three major securitized asset classes
- Comparison of agency and private-label securitized assets
- VAR and three-equation system empirical approach

VAR Model

Two specifications of a standard VAR model for monetary policy analysis are estimated (Lown and Morgan, 2002).

- Benchmark specification—output, prices, policy rate, and interest rate spread
- Augmented specification—output, prices, policy rate, interest rate spread, and securitization

$$Z_t = A(L)Z_{t-1} + u_t \tag{1}$$

- Inference is based on forecast error variance decomposition from a monetary policy shock

$$Var(Z_{t+s} - E_t Z_{t+s}) = \sum_{j=1}^{n} \left\{ Var(u_{jt}) \left[\sum_{i=1}^{s-1} \Psi_i b_j b_j' \Psi_i' \right] \right\} \tag{2}$$

Data

The benchmark and augmented specifications include the following variables:

- *YGAP* output gap—log-difference between industrial production and potential output (quadratic trend)
- *INFL* inflation rate—annualized rate of change in CPI/GDP deflator
- *FF* federal funds rate
- *RS* interest rate spread— difference between weighted average loan rate and 3-yr T-bond yield
- *SEC* securitization ratio—securitized assets to the amount of debt outstanding
  - Securitized assets include agency and private-label mortgages, consumer credit, business loans and trade credit, and student loans
  - Debt outstanding aggregates mortgage, consumer, and business debt

The estimation period is July 1990 to December 2006.

Identification and Specification

Identification

- Recursive assumption to identify monetary policy shocks
- Monetary policy shocks are exogenous; other variables in Z_t are endogenous
- Monetary policy shocks are orthogonal to variables in Z_t
- Equation estimation by OLS produces uncorrelated residuals across equations

Specification

- Variable determination—nonpolicy, policy instrument, and other money market variables
- $Z_t^B = [YGAP, INFL, FF, RS]' \quad Z_t^A = [YGAP, INFL, SEC, FF, RS]'$
- $Z_t^B = [YGAP, INFL, RS, FF]' \quad Z_t^A = [YGAP, INFL, SEC, RS, FF]'$
- 12 lags of each variable in both specifications

Variance Decomposition of the Output Gap

Table 2: Variance Decomposition of Output Gap

Variable Order/Combination	Horizon	Model Specification	
		Benchmark	Augmented
$YGAP, INFL(CPI), FF, RS$	6	1.14	0.64
	12	0.57	0.30
	24	1.32	0.22
	36	1.83	0.28
$YGAP, INFL(GDP), FF, RS$	6	1.18	0.69
	12	0.53	0.29
	24	1.23	0.17
	36	1.70	0.18
$YGAP, INFL(CPI), RS, FF$	6	0.45	0.34
	12	0.29	0.19
	24	0.39	0.12
	36	0.50	0.09
$YGAP, INFL(GDP), RS, FF$	6	0.52	0.42
	12	0.35	0.24
	24	0.42	0.15
	36	0.52	0.11

Notes: Reported values at each month horizon indicate the proportion of the variance of the forecast error of the output gap from a federal funds rate shock. Alternative inflation measures and variable orderings in the two specifications are list in the first column. The securitization ratio is placed after the inflation rate in the augmented specification in all combinations. Estimation period is 1990:07–2006:12.

Variance Decomposition of the Average Loan Rate Spread

Table 3: Variance Decomposition of Average Loan Rate Spread

Variable Order/Combination	Horizon	Model Specification	
		Benchmark	Augmented
$YGAP, INFL(CPI), FF, RS$	6	0.66	1.39
	12	5.24	2.93
	24	12.37	5.13
	36	12.40	5.00
$YGAP, INFL(GDP), FF, RS$	6	0.80	1.79
	12	4.94	3.09
	24	11.79	5.01
	36	11.81	4.87
$YGAP, INFL(CPI), RS, FF$	6	1.56	2.54
	12	4.54	3.47
	24	11.54	5.65
	36	11.50	5.46
$YGAP, INFL(GDP), RS, FF$	6	2.01	2.92
	12	4.76	3.74
	24	11.44	5.64
	36	11.35	5.44

Notes: Reported values at each month horizon indicate the proportion of the variance of the forecast error of the average loan rate spread from a federal funds rate shock. Alternative inflation measures and variable orderings in the two specifications are list in the first column. The securitization ratio is placed after the inflation rate in the augmented specification in all combinations. Estimation period is 1990:07–2006:12.

IS Curve in Single-Equation and System Approach I

Backward-looking single equation (Estrella, 2002)

$$YGAP_t = \beta_0 + \beta_S SEC_{t-1} + \sum_{j=1}^{12} \beta_{Y,j} YGAP_{t-j} + (\beta_R + \beta_{RS} SEC_{t-1})(\overline{FF}_{t-1} - \overline{INFL}_{t-1}) + \varepsilon_t \quad (3)$$

Backward-looking system (Rudebusch and Svensson, 1999; Rudebusch, 2002b)

$$YGAP_t = \beta_0 + \beta_S SEC_{t-1} + \sum_{j=1}^{12} \beta_{Y,j} YGAP_{t-j} + (\beta_R + \beta_{RS} SEC_{t-1})(\overline{FF}_{t-1} - \overline{INFL}_{t-1}) + \varepsilon_t$$

$$INFL_t = \gamma_0 + \sum_{j=1}^{12} \gamma_{I,j} INFL_{t-j} + \gamma_Y YGAP_{t-1} + \eta_t$$

$$FF_t = \delta_0 + (1-\rho)\left(\delta_I(\overline{INFL}_{t-1}) - INFL^*) + \delta_Y YGAP_{t-1}\right) + \rho FF_{t-1} + \nu_t \quad (4)$$

IS Curve in Single-Equation and System Approach II

Hybrid single equation (Rudebusch, 2002a)

$$YGAP_t = \beta_0 + \beta_S SEC_{t-1} + \sum_{j=1}^{12} \beta_{Y,j} YGAP_{t-j} + (\beta_R + \beta_{RS} SEC_{t-1})(\overline{FF}_{t-1} - \overline{INFL}_{t-1}) + \varepsilon_t \tag{5}$$

Hybrid system (Galí and Gertler, 1999; Clarida et al., 1999)

$$YGAP_t = \beta_0 + \beta_S SEC_{t-1} + \sum_{j=1}^{12} \beta_{Y,j} YGAP_{t-j} + (\beta_R + \beta_{RS} SEC_{t-1})\left(FF_{t-1} - E_t(\overline{INFL}_{t+12})\right) + \varepsilon_t$$

$$INFL_t = \gamma_0 + \mu E_t\left(\overline{INFL}_{t+12}\right) + (1-\mu)\sum_{j=1}^{12} \gamma_{I,j} INFL_{t-j} + \gamma_Y YGAP_{t-1} + \eta_t$$

$$FF_t = \delta_0 + (1-\rho)\left(\delta_I\left(E_t(\overline{INFL}_{t+12}) - INFL^*\right) + \delta_Y YGAP_t\right) + \rho FF_{t-1} + \nu_t \tag{6}$$

Data and Transformations I

Single-equation and system estimation approaches use the following variables:

- *YGAP* output gap—log-difference between industrial production and potential output (quadratic trend)
- *INFL* inflation rate—annualized rate of change in CPI
- *FF* federal funds rate
- *SEC* securitization ratio—securitized assets to the amount of debt outstanding for loan market
  - *GH* single-family agency mortgage
  - *PH* single-family priv-label mortgage
  - *GM* total agency mortgage
  - *PM* total priv-label mortgage
  - *C* consumer credit
  - *B* business loan
  - *G* agency
  - *P* priv-label
  - *A* total assets
- Debt outstandings—mortgage, consumer, and business markets

Data and Transformations II

Stationarity tests:

- Average federal funds and inflation rates have unit root; average real interest rate appears to be stationary
- Securitization ratios standardized for comparison purposes

Model selection:

- $\beta_S SEC_{t-1}$ coefficient insignificant in all backward-looking single-equation/hybrid system specifications
- Clarke (2007) nonnested tests differentiate between securitization and time trend specification

Backward-looking/hybrid estimation:

- Backward-looking estimation by OLS
- Expected inflation replaced with actual future inflation; $INFL^* = 2\%$
- Hybrid estimation by GMM
- Instrument set—10 lags of *YGAP*, *INFL*, *FF*; 1 lag of 4 estimated factors (Bai and Ng, 2008)

Securitized Assets/Types I

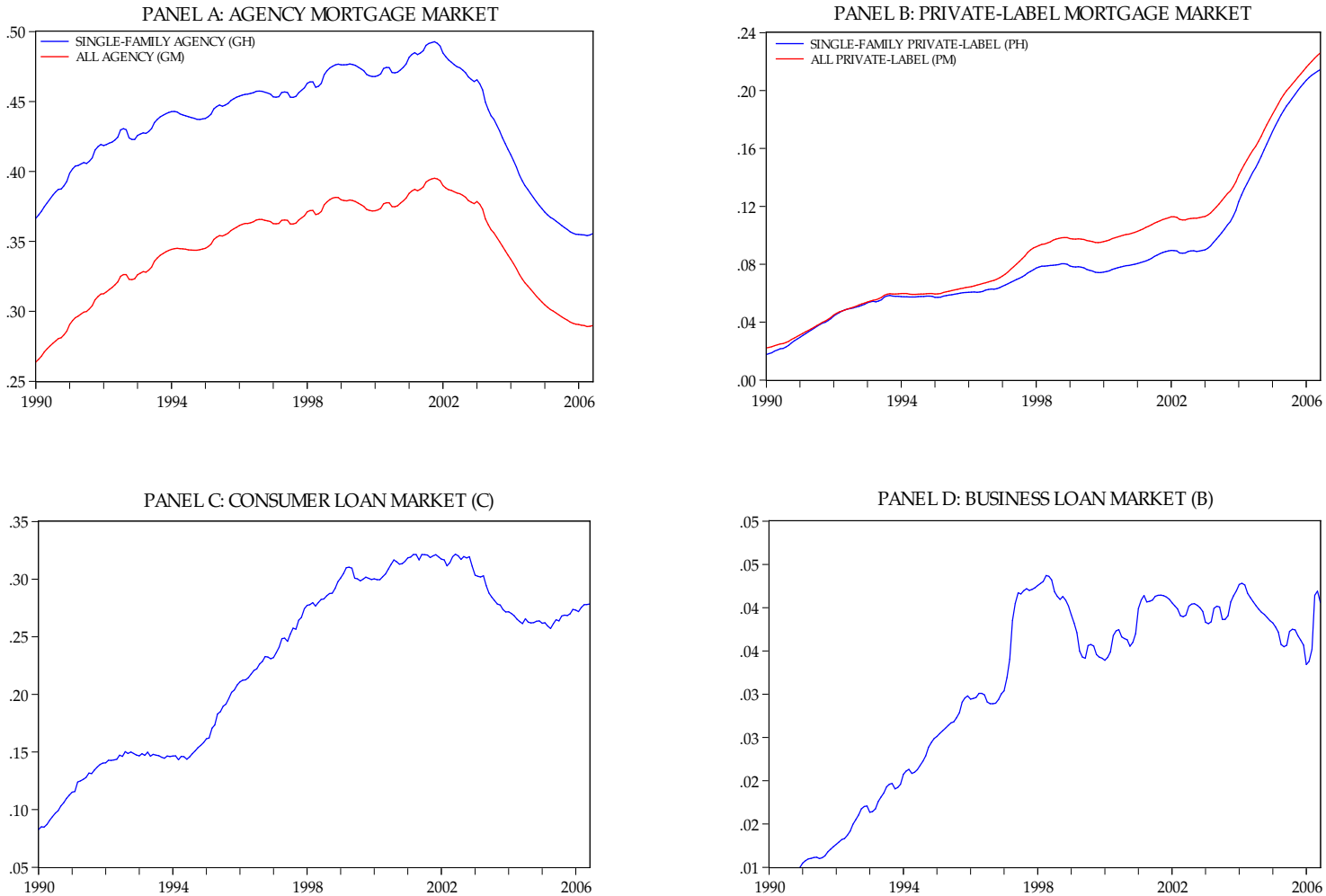

Figure 2: Securitization ratio variables (markets)

Securitized Assets/Types II

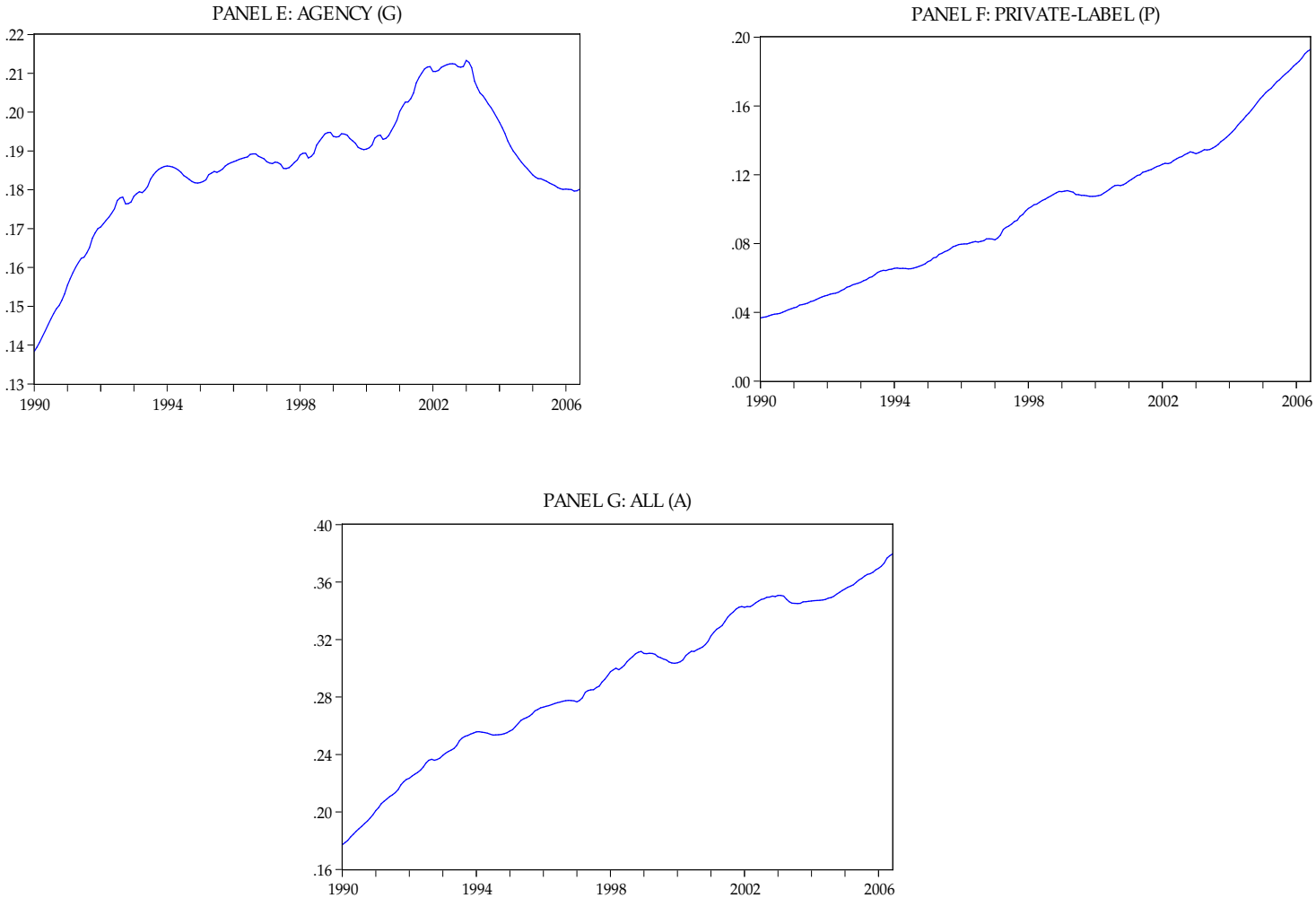

Figure 3: Securitization ratio variables (types)

Elasticity of Output Gap (Backward-Looking, $n = 12$) I

Table 4: Real Interest Rate Elasticity of Output Gap (Markets)

Coefficient/Term	0.355 GH	0.213 PH	0.289 GM	0.244 PM	0.278 C	0.042 B
Backward-looking single-equation:						
β_R	-0.175^{***}	0.003	-0.144^{**}	0.002	-0.043^{*}	-0.035^{*}
	(0.065)	(0.015)	(0.056)	(0.016)	(0.025)	(0.020)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.127^{***}	0.002	-0.112^{**}	0.002	-0.034^{*}	-0.034^{*}
	(0.048)	(0.013)	(0.044)	(0.013)	(0.021)	(0.020)
$\overline{R}^2$	0.991	0.991	0.991	0.991	0.991	0.991
Breusch-Godfrey	0.443	0.366	0.467	0.371	0.434	0.426
Breusch-Pagan-Godfrey	0.358	0.239	0.375	0.224	0.359	0.325
ARCH-LM	0.757	0.662	0.666	0.651	0.456	0.379
Stationarity	0.400	0.463	0.504	0.476	0.551	0.664
Backward-looking system:						
β_R	-0.175^{***}	0.003	-0.144^{**}	0.002	-0.007	-0.035
	(0.065)	(0.015)	(0.053)	(0.016)	(0.034)	(0.022)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.127^{***}	0.002	-0.112^{***}	0.002	-0.002	-0.034
	(0.048)	(0.014)	(0.042)	(0.014)	(0.029)	(0.021)
$\overline{R}^2$	0.991	0.991	0.991	0.991	0.991	0.991
Ljung-Box Q-stat	0.998	0.999	0.999	0.999	0.999	1.000
Breusch-Pagan-Godfrey	0.358	0.239	0.375	0.224	0.359	0.325
ARCH-LM	0.757	0.662	0.666	0.651	0.456	0.379
Stationarity	0.400	0.463	0.504	0.476	0.551	0.664

Notes: Newey-West/HAC standard errors are in parentheses. Estimation is by OLS; estimates for securitization enter at end of sample with a one-period lag. Adjusted R^2 values are reported for only the aggregate demand equation. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively. The estimation period is 1990:07–2006:12.

Elasticity of Output Gap (Backward-Looking, $n = 12$) II

Table 5: Real Interest Rate Elasticity of Output Gap (Type)

	0.180	0.192	0.378
	G	P	A
Backward-looking single-equation:			
β_R	-0.125^{**}	-0.003	-0.034
	(0.060)	(0.020)	(0.036)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.108^{**}	-0.002	-0.024
	(0.052)	(0.018)	(0.027)
$\overline{R}^2$	0.991	0.991	0.991
Breusch-Godfrey	0.460	0.387	0.403
Breusch-Pagan-Godfrey	0.350	0.195	0.241
ARCH-LM	0.592	0.590	0.494
Stationarity	0.617	0.516	0.597
Backward-looking system:			
β_R	-0.125^{**}	-0.003	-0.034
	(0.060)	(0.020)	(0.036)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.108^{**}	-0.002	-0.024
	(0.052)	(0.018)	(0.027)
$\overline{R}^2$	0.991	0.991	0.991
Ljung-Box Q-stat	0.999	0.999	1.000
Breusch-Pagan-Godfrey	0.350	0.195	0.241
ARCH-LM	0.592	0.590	0.494
Stationarity	0.617	0.516	0.597

Notes: Newey-West/HAC standard errors are in parentheses. Estimation is by OLS; estimates for securitization enter at end of sample with a one-period lag. Adjusted R^2 values are reported for only the aggregate demand equation. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively. The estimation period is 1990:07–2006:12.

Elasticity of Output Gap (Hybrid, $n = 12$) I

Table 6: Real Interest Rate Elasticity of Output Gap (Markets)

Coefficient/Term	0.355 GH	0.213 PH	0.289 GM	0.244 PM	0.278 C	0.042 B
Hybrid single-equation:						
β_R	-0.213^{**}	-0.080^{***}	-0.158^{***}	-0.069^{**}	-0.069^{***}	-0.020
	(0.086)	(0.019)	(0.110)	(0.020)	(0.023)	(0.028)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.158^{**}	-0.067^{***}	-0.126^{***}	-0.059^{***}	-0.053^{***}	-0.019
	(0.061)	(0.016)	(0.046)	(0.016)	(0.018)	(0.027)
$\overline{R}^2$	0.989	0.989	0.989	0.990	0.989	0.990
Ljung-Box Q-statistic	0.153	0.211	0.101	0.410	0.043	0.974
Breusch-Pagan-Godfrey	0.534	0.141	0.626	0.678	0.785	0.402
ARCH-LM	0.472	0.426	0.701	0.947	0.756	0.655
Stationarity	0.445	0.427	0.762	0.632	0.269	0.064
J-statistic	0.118	0.110	0.078	0.162	0.315	0.230
Hybrid system:						
β_R	-0.192^{**}	-0.015	-0.159^{***}	-0.014	-0.065^{***}	-0.063^{***}
	(0.088)	(0.012)	(0.060)	(0.013)	(0.014)	(0.010)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.145^{**}	-0.016	-0.129^{***}	-0.016	-0.054^{***}	-0.061^{***}
	(0.063)	(0.010)	(0.046)	(0.010)	(0.011)	(0.010)
$\overline{R}^2$	0.989	0.990	0.990	0.990	0.991	0.990
Ljung-Box Q-stat	0.394	0.908	0.408	0.870	0.954	0.961
Breusch-Pagan-Godfrey	0.299	0.456	0.371	0.538	0.444	0.414
ARCH-LM	0.491	0.589	0.613	0.526	0.783	0.605
Stationarity	0.722	0.893	0.526	0.909	0.687	0.554
J-statistic	0.309	0.188	0.315	0.219	0.220	0.216

Notes: Newey-West/HAC standard errors are in parentheses. Estimation is by GMM; estimates for securitization enter at end of sample with a one-period lag. Adjusted R^2 values are reported for only the aggregate demand equation. J-statistic is the p-value for valid overidentifying restrictions. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively. The estimation period is 1990:07–2006:12.

Elasticity of Output Gap (Hybrid, $n = 12$) II

Table 7: Real Interest Rate Elasticity of Output Gap (Type)

	0.180	0.192	0.378
	G	P	A
Hybrid single-equation:			
β_R	-0.175^{**}	-0.059^{***}	-0.118^{***}
	(0.071)	(0.022)	(0.041)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.152^{**}	-0.050^{***}	-0.082^{***}
	(0.061)	(0.017)	(0.027)
$\overline{R}^2$	0.969	0.990	0.989
Ljung-Box Q-statistic	0.727	0.274	0.135
Breusch-Pagan-Godfrey	0.627	0.594	0.647
ARCH-LM	0.957	0.927	0.780
Stationarity	0.832	0.672	0.860
J-statistic	0.087	0.156	0.315
Hybrid system:			
β_R	-0.181^{***}	-0.042^{***}	-0.132^{***}
	(0.070)	(0.014)	(0.029)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.159^{***}	-0.037^{***}	-0.095^{***}
	(0.060)	(0.012)	(0.020)
$\overline{R}^2$	0.990	0.990	0.990
Ljung-Box Q-statistic	0.231	0.934	0.495
Breusch-Pagan-Godfrey	0.340	0.265	0.262
ARCH-LM	0.857	0.824	0.919
Stationarity	0.233	0.359	0.155
J-statistic	0.316	0.187	0.218

Notes: Newey-West/HAC standard errors are in parentheses. Estimation is by GMM; estimates for securitization enter at end of sample with a one-period lag. Adjusted R^2 values are reported for only the aggregate demand equation. J-statistic is the p-value for valid overidentifying restrictions. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively. The estimation period is 1990:07–2006:12.

Elasticity of Output Gap (CBO Measure, $n = 12$) I

Table 8: Real Interest Rate Elasticity of Output Gap (Market)

	0.355	0.289	0.278	0.042
Coefficient/Term	GH	GM	C	B
Backward-looking single-equation:				
β_R	-0.096^{***}	-0.071^{***}	-0.018^{*}	-0.014^{*}
	(0.028)	(0.022)	(0.010)	(0.008)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.068^{***}	-0.054^{***}	-0.012	-0.014^{*}
	(0.020)	(0.017)	(0.008)	(0.008)
$\overline{R}^2$	0.997	0.997	0.0997	0.997
Backward-looking system:				
β_R	-0.120^{***}	-0.091^{***}	-0.024^{*}	-0.022^{**}
	(0.042)	(0.028)	(0.133)	(0.010)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.085^{***}	-0.070^{***}	-0.017^{*}	-0.016^{*}
	(0.030)	(0.022)	(0.010)	(0.008)
$\overline{R}^2$	0.997	0.996	0.997	0.997
J-statistic	0.363	0.337	0.335	0.338
Hybrid single-equation:				
β_R	-0.149^{***}	-0.114^{***}	-0.036^{***}	-0.027^{***}
	(0.034)	(0.022)	(0.013)	(0.006)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.107^{***}	-0.088^{***}	-0.025^{***}	-0.026^{***}
	(0.024)	(0.017)	(0.009)	(0.006)
$\overline{R}^2$	0.997	0.996	0.997	0.997
J-statistic	0.942	0.960	0.847	0.961

Notes: Newey-West/HAC standard errors are in parentheses. Estimation is by GMM for hybrid single-equation approach; estimates for securitization enter at end of sample with a one-period lag. Adjusted R^2 values are reported for only the aggregate demand equation. J-statistic is the p-value for valid overidentifying restrictions. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively. The estimation period is 1990:07–2006:12.

Elasticity of Output Gap (CBO Measure, $n = 12$) II

Table 9: Real Interest Rate Elasticity of Output Gap (Type)

	0.180	0.192	0.378
	G	P	A
Backward-looking system:			
β_R	-0.099^{***}	-0.030^{**}	-0.058^{**}
	(0.032)	(0.014)	(0.023)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.084^{***}	-0.022^{*}	-0.038^{**}
	(0.028)	(0.012)	(0.016)
$\overline{R}^2$	0.997	0.996	0.997
J-statistic	0.338	0.338	0.338
Hybrid single-equation:			
β_R	-0.141^{***}	-0.036^{**}	-0.085^{***}
	(0.030)	(0.016)	(0.026)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.121^{***}	-0.028^{**}	-0.056^{***}
	(0.026)	(0.012)	(0.017)
$\overline{R}^2$	0.996	0.995	0.996
J-statistic	0.963	0.882	0.925
Hybrid system:			
β_R	-0.118^{***}	-0.025	-0.079^{**}
	(0.035)	(0.024)	(0.036)
$\beta_R + \beta_{RS} SEC_{t-1}$	-0.101^{***}	-0.019	-0.052^{**}
	(0.030)	(0.018)	(0.024)
$\overline{R}^2$	0.997	0.996	0.996
J-statistic	0.364	0.363	0.365

Notes: Newey-West/HAC standard errors are in parentheses. Estimation is by GMM for the two hybrid models; estimates for securitization enter at end of sample with a one-period lag. Adjusted R^2 values are reported for only the aggregate demand equation. J-statistic is the p-value for valid overidentifying restrictions. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively. The estimation period is 1990:07–2006:12.

Explanations for Results

The following points help to explain the varying degree to which securitization impacts output sensitivity.

- Differences in the development of securitization markets
- Type of collateral backing securitization transactions
- How transactions are structured
- Type of entity that originates pooled and securitized assets

Explanations for Results—Collateral

Role of Underlying Collateral

- Larger decline in interest rate elasticity of output in consumer credit market than business loan market
  - Backward-looking single-equation and hybrid system approaches
- Securitized consumer credit—auto loans and leases, student loans, and credit card receivables
  - Homogenous assets; longer history
- Securitized business loans—nonfinancial corporate business
  - (Relatively) heterogeneous assets; few common underwriting standards (Fabozzi, 2000)

Explanations for Results—Structure

Transaction Structure

- Larger decline in interest rate elasticity of output from presence of agency securitized assets than private-label securitized assets
  - Hybrid single-equation and system approaches
- Implicit government guarantee of payment to agency security investors
  - Less vulnerable to market conditions
- Agency securitization tends to lower mortgage rates (Passmore et al., 2005)
  - Gains in allocation and cost of credit rather than more efficient lending rate adjustments to policy rate
  - Supportive evidence in variance decomposition of average loan rate spread from policy shock

Explanations for Results—Issuer

Issuer Characteristics

- Private-label securitization issuers—banks, finance companies, and other nonbank lenders
- Unified lending channel—policy actions affect market-sensitive funding costs through the cost of external finance
  - Market-based finance is primary funding source for nonbanks
  - Nonbanks should remain viable path for policy actions to affect output
- Combination of nonbanks and securitization emphasizes benefits of securitization over other forms of finance
  - Financial health of issuer typically isolated from payment sources for security investors
  - Ability to sell financial assets makes existing assets more liquid and finances more asset creation (Loutskina, 2011)

Explanations for Results—Other Channels I

Other Channels of Transmission

- Risk-taking channel (Borio and Zhu, 2008)—policy rates influence risk perceptions and/or risk tolerance of lenders
  - Tight monetary stance reduces cash flows, asset valuations, and lender profitability
  - Weaker financial conditions cause lenders to reduce risk taking
  - Supplied credit and output fall in response
  - Pricing of risk can incorporate changes in risk tolerance (Gilchrist and Zakrajšek, 2012)
- Smaller decline in interest rate elasticity of output from presence of private-label securitized assets than agency securitized assets
  - Private-label securitized assets perceived as more risky
  - Higher funding costs for issuers reflected in higher lending rates; less advantages from securitization transferred to lenders

Explanations for Results—Other Channels II

- Smaller decline in interest rate elasticity of output from presence of private-label securitized mortgages than agency securitized mortgages
  - Hybrid single-equation approach
  - No implicit government guarantee makes assets more risky to investors
- Smaller decline in interest rate elasticity of output from presence of securitized business loans than securitized consumer credit
  - Backward-looking single-equation and hybrid system approaches
  - Heterogeneity of business loans perceived as more risky to investors

Summary

Findings

- The presence of securitization impacts the effects of monetary policy rate changes on output
- VAR model—reduce contribution of policy shocks to output; increase contribution of average loan rate spread (at short horizons)
- IS curve—lessen interest rate sensitivity of output to monetary policy rate changes
  - Most significant fall from securitized mortgage assets, then consumer credit and business loans; agency over private-label securitized assets
- Differences in impact involve asset pool types, issuer, and exposure to market conditions
- Policy implications—larger moves for effectiveness through bank credit; proposed risk retention rule

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