Discussion: Elenev, Landvoigt, Van Nieuwerburgh: Phasing-out the GSEs

Juliane Begenau

1Harvard & NBER

June 21, 2016
WFA, Park City
Phasing out the GSE

- **Issue**
  - Government deeply involved in mortgage market
  - Writing guarantees on mortgage bond leads to
Phasing out the GSE

- Issue
  - Government deeply involved in mortgage market
  - Writing guarantees on mortgage bond leads to
    - Hope: stable mortgage supply by intermediaries
    - Downside: imprudent supply of mortgages

This paper is the economy better off without GSEs?
Answer yes, but not trivially true in incomplete markets
Quantify the effects of GSEs in a rich GE incomplete markets economy with heterogenous agents

Discussion
Paper is forthcoming (Journal of Monetary Economics)
Model & mechanism
Causes of high leverage
When could adding GSEs be useful?
Phasing out the GSE

- **Issue**
  - Government deeply involved in mortgage market
  - Writing guarantees on mortgage bond leads to
    - Hope: stable mortgage supply by intermediaries
    - Downside: imprudent supply of mortgages

- **This paper**
  - Is the economy better off without GSEs?
  - Answer yes, but not trivially true in incomplete markets
  - Quantify the effects of GSEs in a rich GE incomplete markets economy with heterogenous agents

Discussion

Paper is forthcoming (Journal of Monetary Economics)

Model & mechanism

Causes of high leverage

When could adding GSEs be useful?
Phasing out the GSE

Issue
- Government deeply involved in mortgage market
- Writing guarantees on mortgage bond leads to
  - Hope: stable mortgage supply by intermediaries
  - Downside: imprudent supply of mortgages

This paper
- Is the economy better off without GSEs?
- Answer yes, but not trivially true in incomplete markets
- Quantify the effects of GSEs in a rich GE incomplete markets economy
  with heterogeneous agents

Discussion
- Paper is forthcoming (Journal of Monetary Economics)
- Model & mechanism
- Causes of high leverage
- When could adding GSEs be useful?
Model in a nutshell

- Two-good endowment economy i.e. non-housing (non-tradable) & housing Lucas tree
- Two shocks: non-housing fruit & house value
- Incomplete markets: four assets: housing, short-term bond, mortgage, mortgage insurance
Model in a nutshell

- Two-good endowment economy i.e. non-housing (non-tradable) & housing Lucas tree
- Two shocks: non-housing fruit & house value
- Incomplete markets: four assets: housing, short-term bond, mortgage, mortgage insurance
  - long term mortgage contracts (perpetuity) defaultable (DWL through foreclosure) & prepayable (DWL through refinancing)
  - mortgage insurance → guaranteed mortgage bond - insurance price: $\gamma$
Model in a nutshell

- Two-good endowment economy i.e. non-housing (non-tradable) & housing Lucas tree
- Two shocks: non-housing fruit & house value
- Incomplete markets: four assets: housing, short-term bond, mortgage, mortgage insurance
  - long term mortgage contracts (perpetuity) defaultable (DWL through foreclosure) & prepayable (DWL through refinancing)
  - mortgage insurance \( \rightarrow \) guaranteed mortgage bond - insurance price: \( \gamma \)
- Three agents:
  - risk-averse & patient
    - = Depositors/Savers
  - not so risk-averse & patient
    - = Intermediaries
  - risk-averse & impatient
    - = Borrowers
Decisions

- **Borrowers**
  - choose C, housing, default, repayment, mortgage debt
  - s.t. BC, LTV, RFC, Debt LOM

- **Intermediate**
  - choose C, default, private & government mortgage bonds, short term debt
  - s.t. BC, short sale constraint on mortgages, collateral constraint for short term debt favoring government mortgage bonds

- **Depositors**
  - choose C, deposits
  - s.t. BC

- **Government**
  - income from endowment tax net of mortgage deduction, guarantee fee γ
  - supplies guarantees at fee γ
  - bails out deposits of defaulting banks
Decisions

- **Borrowers**
  - choose C, housing, default, repayment, mortgage debt
  - s.t. BC, LTV, RFC, Debt LOM

- **Intermediaries**
  - choose C, default, private & government mortgage bonds, short term debt
  - s.t. BC, short sale constraint on mortgages, collateral constraint for short term debt favoring government mortgage bonds
Decisions

▶ Borrowers
  ▶ choose C, housing, default, repayment, mortgage debt
  ▶ s.t. BC, LTV, RFC, Debt LOM

▶ Intermediaries
  ▶ choose C, default, private & government mortgage bonds, short term debt
  ▶ s.t. BC, short sale constraint on mortgages, collateral constraint for short term debt favoring government mortgage bonds

▶ Depositors
  ▶ choose C, deposits
  ▶ s.t. BC
Decisions

- **Borrowers**
  - choose C, housing, default, repayment, mortgage debt
  - s.t. BC, LTV, RFC, Debt LOM

- **Intermediaries**
  - choose C, default, private & government mortgage bonds, short term debt
  - s.t. BC, short sale constraint on mortgages, collateral constraint for short term debt favoring government mortgage bonds

- **Depositors**
  - choose C, deposits
  - s.t. BC

- **Government**
  - income from endowment tax net of mortgage deduction, guarantee fee \( \gamma \)
  - supplies guarantees at fee \( \gamma \)
  - bails out deposits of defaulting banks
How does raising $\gamma$ affect welfare?

- Answer not trivial:
  - Generally: adding a non-redundant security to market structure positive.
  - Hart 1975: presence of externalities can undo positive effect.
  - Deposit insurance → depositors insensitive to banks’ default risk.
  - Mortgage subsidy → intermediaries insensitive to borrower default.
  - Banks lever up and oversupply mortgages.
  - When the government steps in, it raises short term debt which depositors supply.
  - Exposes depositors to mortgage losses.
  - Higher $\gamma$:
    - Insurance more costly → banks increase supply of non-mortgage bonds.
    - Reduction in guaranteed portfolio share increases incentives to internalize risk.
    - Lowers leverage, reduces mortgage portfolio and risk → financial sector fragility.
    - Fewer bailouts necessary.
    - Stable mortgage supply.
How does raising $\gamma$ affect welfare?

- Answer not trivial:
  - generally: adding a non-redundant security to market structure positive
  - Hart 1975: presence of externalities can undo positive effect

Deposit insurance $\rightarrow$ depositors insensitive to banks' default risk

Mortgage subsidy $\rightarrow$ intermediaries insensitive to borrower default

- Banks lever up and oversupply mortgages
- When the government steps in, it raises short term debt which depositors supply exposing depositors to mortgage losses
- Higher $\gamma$: insurance more costly $\rightarrow$ banks increase supply of non-mortgage bonds
- Reduction in guaranteed portfolio share increases incentives to internalize risk $\rightarrow$ lowers leverage, reduces mortgage portfolio and risk $\rightarrow$ financial sector fragility
- Fewer bailouts necessary
- Stable mortgage supply
How does raising $\gamma$ affect welfare?

- Answer not trivial:
  - generally: adding a non-redundant security to market structure positive
  - Hart 1975: presence of externalities can undo positive effect
- Deposit insurance $\rightarrow$ depositors insensitive to banks’ default risk

- Banks lever up and oversupply mortgages
- When the government steps in, it raises short term debt which depositors supply
- Exposes depositors to mortgage losses
- Higher $\gamma$: insurance more costly $\rightarrow$ banks increase supply of non-mortgage bonds
- Reduction in guaranteed portfolio share increases incentives to internalize risk
- Lowers leverage, reduces mortgage portfolio and risk $\rightarrow$ financial sector fragility
- Fewer bailouts necessary
- Stable mortgage supply
How does raising $\gamma$ affect welfare?

- Answer not trivial:
  - generally: adding a non-redundant security to market structure positive
  - Hart 1975: presence of externalities can undo positive effect
- Deposit insurance $\rightarrow$ depositors insensitive to banks’ default risk
- Mortgage subsidy $\rightarrow$ intermediaries insensitive to borrower default

When the government steps in, it raises short term debt which depositors supply, exposes depositors to mortgage losses. Higher $\gamma$: insurance more costly $\rightarrow$ banks increase supply of non-mortgage bonds, reduction in guaranteed portfolio share increases incentives to internalize risk $\rightarrow$ lowers leverage, reduces mortgage portfolio and risk $\rightarrow$ financial sector fragility $\rightarrow$ fewer bailouts necessary, stable mortgage supply.
How does raising $\gamma$ affect welfare?

- Answer not trivial:
  - generally: adding a non-redundant security to market structure positive
  - Hart 1975: presence of externalities can undo positive effect
- Deposit insurance $\rightarrow$ depositors insensitive to banks’ default risk
- Mortgage subsidy $\rightarrow$ intermediaries insensitive to borrower default
- Banks lever up and oversupply mortgages
- When the government steps in, it raises short term debt which depositors supply
  - exposes depositors to mortgage losses
How does raising $\gamma$ affect welfare?

- Answer not trivial:
  - generally: adding a non-redundant security to market structure positive
  - Hart 1975: presence of externalities can undo positive effect
- Deposit insurance → depositors insensitive to banks’ default risk
- Mortgage subsidy → intermediaries insensitive to borrower default
- Banks lever up and oversupply mortgages
- When the government steps in, it raises short term debt which depositors supply
  - exposes depositors to mortgage losses
- Higher $\gamma$:
  - insurance more costly → banks increase supply of non-mortgage bonds
How does raising $\gamma$ affect welfare?

- Answer not trivial:
  - generally: adding a non-redundant security to market structure positive
  - Hart 1975: presence of externalities can undo positive effect

- Deposit insurance $\rightarrow$ depositors insensitive to banks’ default risk

- Mortgage subsidy $\rightarrow$ intermediaries insensitive to borrower default

- Banks lever up and oversupply mortgages

- When the government steps in, it raises short term debt which depositors supply
  - exposes depositors to mortgage losses

- Higher $\gamma$:
  - insurance more costly $\rightarrow$ banks increase supply of non-mortgage bonds
  - reduction in guaranteed portfolio share increases incentives to internalize risk
  - lowers leverage, reduces mortgage portfolio and risk $\rightarrow$ financial sector fragility
  - fewer bailouts necessary
  - stable mortgage supply
GSEs bad because of moral hazard & inefficient allocation of risk

- GSE are bad because savers, i.e. risk-averse depositors foot the bill during crisis
- Induces fluctuations in consumption of risk-averse agent
- While intermediaries and borrowers benefit
Is high leverage caused by mortgage guarantees?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mortgages / RWA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High E/A</td>
<td>62.07</td>
<td>65.24</td>
<td>67.56</td>
</tr>
<tr>
<td>Low E/A</td>
<td>61.74</td>
<td>65.83</td>
<td>68.25</td>
</tr>
<tr>
<td>Difference</td>
<td>0.33</td>
<td>-0.59</td>
<td>-0.69</td>
</tr>
<tr>
<td>t-statistic</td>
<td>(0.24)</td>
<td>(-0.37)</td>
<td>(-0.86)</td>
</tr>
<tr>
<td><strong>Government-Backed MBS / RWA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High E/A</td>
<td>24.12</td>
<td>24.00</td>
<td>21.45</td>
</tr>
<tr>
<td>Low E/A</td>
<td>8.85</td>
<td>6.99</td>
<td>9.29</td>
</tr>
<tr>
<td>Difference</td>
<td>15.28</td>
<td>17.01</td>
<td>12.15</td>
</tr>
<tr>
<td>t-statistic</td>
<td>(9.76)</td>
<td>(9.81)</td>
<td>(16.49)</td>
</tr>
<tr>
<td><strong>Government-Backed MBS / MBS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High E/A</td>
<td>95.74</td>
<td>95.39</td>
<td>96.96</td>
</tr>
<tr>
<td>Low E/A</td>
<td>95.96</td>
<td>94.69</td>
<td>94.30</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.22</td>
<td>0.70</td>
<td>2.66</td>
</tr>
<tr>
<td>t-statistic</td>
<td>(-0.28)</td>
<td>(0.66)</td>
<td>(5.18)</td>
</tr>
</tbody>
</table>

Table: Begenau & Stafford 2016
What are the forces in the model that prevent GSEs from being beneficial?

- **Other words**: Under what circumstances would adding insurance be a good idea (i.e. better than market)
  - Here: too much risk-taking by banks and borrowers due to gov. MBS distortion
  - Also here: Private market able to provide stable and healthy mortgage supply even in bad times if $\gamma$ high enough

- **Value of home ownership?**
Conclusion

- Great paper
  - complex model captures important features of the data
  - quantitative results suggests that abolishing GSEs is on net a good idea
  - with transition dynamics: costs in the short run
  - intuition of bad risk allocation neat and extendable beyond GSEs

- Causes for excessive leverage GSE alone?

- When would adding GSEs make sense?