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Monterey, California. Naval Postgraduate School

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# New Entrants and Small Business Graduation in the Market for Federal Contracts

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# Context

Title 15 U.S. Code § 631  
& § 633 – SBA and  
Government-Wide  
Procurement Preference  
Goaling Program

DoD's Defense Innovation  
Unit Experimental (DIUx)

Section 809 Panel

Title 15 U.S. Code § 657a  
– HUBZone Program

# Research Questions

1. What are the survival rates for new entrants in the market for federal contracts?
2. How do these survival rates compare with the survival rates for new entrants in the defense industrial base specifically?
3. How do these survival rates change between small and medium or large businesses?
4. What firm-level characteristics differentiate small from medium or large businesses?

# Previous Focus on Small-Business Survival

New-firm Survival depends on characteristics that fall into three buckets:

## Firm-Level Characteristics:

- Size
- Firm Age
- Firm Ownership and Demographics
- Firm Nationality

## Industry-Level Characteristics:

- Degree of Competition
- Innovation Rate
- Industry Growth Rate
- Capital Intensity

## Macroeconomic-Level Characteristics:

- Business Cycle
- Unemployment Rate
- Inflation Rate

# Data and Specification

## 1. Data Sources:

- 2.- Federal Procurement Data System (FPDS)
- 3.- System for Award Management (SAM)

## •Key Variable Definition:

- Market entry defined using the registration date in SAM
- Market exit defined using the last signed date within the 10-year study period in FPDS
- Small vs. Non-Small new entrants

## •Sample:

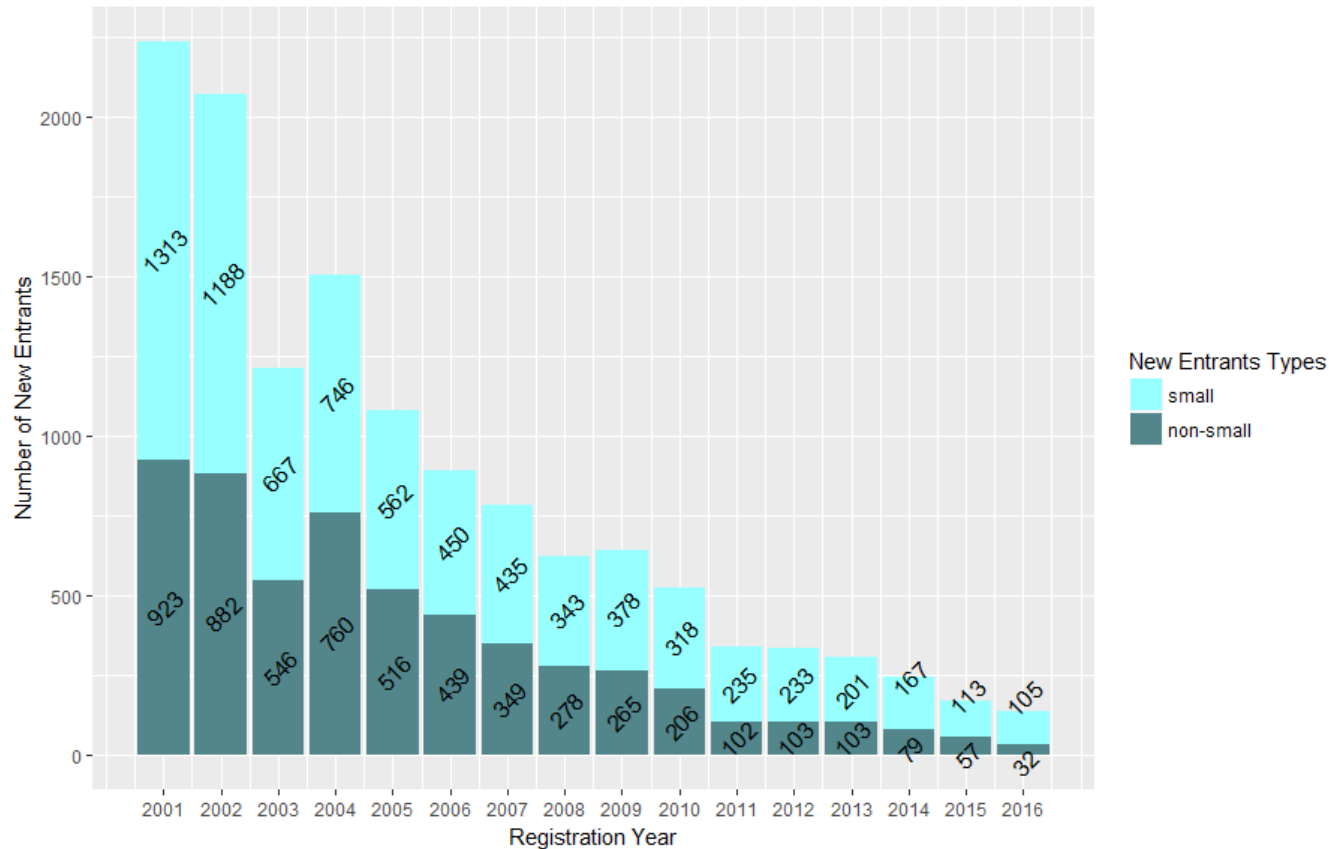
- Six analytical samples of new entrants in the market for both government-wide and DoD-specific contracts
- Each sample includes all new entrants starting in year  $t$  where  $t = 2001-2006$
- Each sample is tracked over the decade following  $t$

## •Survival Rates

- $i$ -year survival rates where  $i$  equals 3, 5, and 10 for each of the six samples of new entrants
- The survival rate is equal to the number of firms that survived  $i$  years divided by the total number of firms that entered in the baseline year

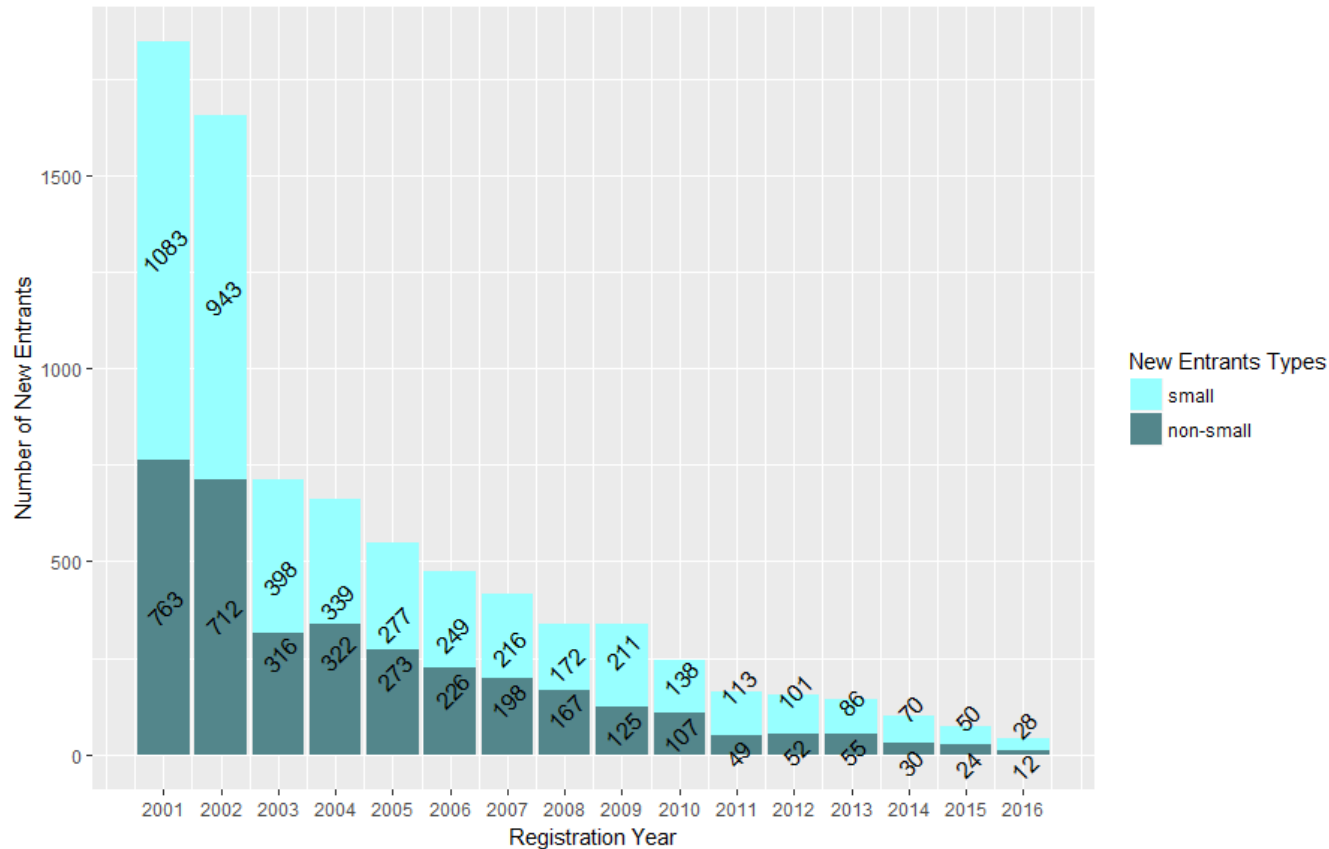
# Results: New Entrants in the Market for All Federal Contracts

Number of New Entrants Per Year (2001-2016) - All Federal Agencies



# Results: New Entrants in the Market for DoD Contracts

Number of New Entrants Per Year (2001-2016) - DOD





# Results: Survival Rates 2001 Sample

2001 New Entrants' Survival Rates							
All Federal Agencies				DoD			
Observations:	All New Entrants	Small New Entrants	Medium or large New Entrants	Observations:	All New Entrants	Small New Entrants	Medium or large New Entrants
2237				1846			
<b>3-Year</b>	78.01%	76.09%	80.72%	<b>3-Year</b>	71.56%	69.81%	74.05%
<b>5-Year</b>	62.27%	61.31%	63.60%	<b>5-Year</b>	55.47%	55.31%	55.70%
<b>10-Year</b>	19.58%	20.49%	19.16%	<b>10-Year</b>	13.98%	15.14%	12.32%
<b>Graduation Rate</b>		3.53%		<b>Graduation Rate</b>		2.38%	

Source: FPDS and SAM

# Results: Survival Rates 2002 Sample

2002 New Entrants' Survival Rates							
All Federal Agencies				DoD			
Observations:	All New Entrants	Small New Entrants	Medium or large New Entrants	Observations:	All New Entrants	Small New Entrants	Medium or large New Entrants
<b>2070</b>				<b>1655</b>			
<b>3-Year</b>	75.41%	75.17%	75.74%	<b>3-Year</b>	70.21%	70.84%	69.38%
<b>5-Year</b>	60.19%	60.69%	59.52%	<b>5-Year</b>	54.08%	55.14%	52.67%
<b>10-Year</b>	20.82%	22.22%	18.93%	<b>10-Year</b>	16.44%	17.39%	15.17%
<b>Graduation Rate</b>		3.24%		<b>Graduation Rate</b>		2.11%	

Source: FPDS and SAM

# Results: Survival Rates 2003 Sample

2003 New Entrants' Survival Rates							
All Federal Agencies				DoD			
Observations:	All New Entrants	Small New Entrants	Medium or large New Entrants	Observations:	All New Entrants	Small New Entrants	Medium or large New Entrants
<b>2070</b>				<b>1655</b>			
<b>3-Year</b>	62.52%	62.67%	62.27%	<b>3-Year</b>	56.16%	56.53%	55.70%
<b>5-Year</b>	46.79%	47.83%	45.60%	<b>5-Year</b>	41.60%	42.71%	40.19%
<b>10-Year</b>	12.03%	13.94%	9.71%	<b>10-Year</b>	8.26%	8.79%	7.59%
<b>Graduation Rate</b>		1.07%		<b>Graduation Rate</b>		0.42%	

Source: FPDS and SAM

# Results: Survival Rates 2004 Sample

2004 New Entrants' Survival Rates							
All Federal Agencies				DoD			
Observations:	All New Entrants	Small New Entrants	Medium or large New Entrants	Observations:	All New Entrants	Small New Entrants	Medium or large New Entrants
2070				1655			
<b>3-Year</b>	58.79%	61.93%	55.66%	<b>3-Year</b>	55.07%	60.56%	49.85%
<b>5-Year</b>	41.61%	47.05%	36.32%	<b>5-Year</b>	37.07%	43.79%	30.68%
<b>10-Year</b>	10.02%	13.27%	6.84%	<b>10-Year</b>	7.11%	10.25%	4.13%
<b>Graduation Rate</b>		1.13%		<b>Graduation Rate</b>		0.91%	

Source: FPDS and SAM

# Results: Survival Rates 2005 Sample

2005 New Entrants' Survival Rates							
All Federal Agencies				DoD			
Observations:	All New Entrants	Small New Entrants	Medium or large New Entrants	Observations:	All New Entrants	Small New Entrants	Medium or large New Entrants
<b>2070</b>				<b>1655</b>			
<b>3-Year</b>	54.17%	57.65%	50.39%	<b>3-Year</b>	54.36%	58.48%	50.18%
<b>5-Year</b>	40.82%	46.26%	34.88%	<b>5-Year</b>	38.55%	45.85%	31.14%
<b>10-Year</b>	8.16%	10.68%	5.43%	<b>10-Year</b>	7.45%	9.39%	5.49%
<b>Graduation Rate</b>		0.93%		<b>Graduation Rate</b>		0.73%	

Source: FPDS and SAM

# Results: Survival Rates 2006 Sample

2006 New Entrants' Survival Rates							
All Federal Agencies				DoD			
Observations:	All New Entrants	Small New Entrants	Medium or large New Entrants	Observations:	All New Entrants	Small New Entrants	Medium or large New Entrants
<b>2070</b>				<b>1655</b>			
<b>3-Year</b>	56.47%	61.11%	51.71%	<b>3-Year</b>	53.05%	59.84%	45.58%
<b>5-Year</b>	42.52%	50.00%	34.85%	<b>5-Year</b>	38.95%	46.99%	30.09%
<b>10-Year</b>	6.52%	8.67%	4.33%	<b>10-Year</b>	5.89%	7.63%	3.98%
<b>Graduation Rate</b>		0.56%		<b>Graduation Rate</b>		0.42%	

Source: FPDS and SAM

## Notable Conclusions

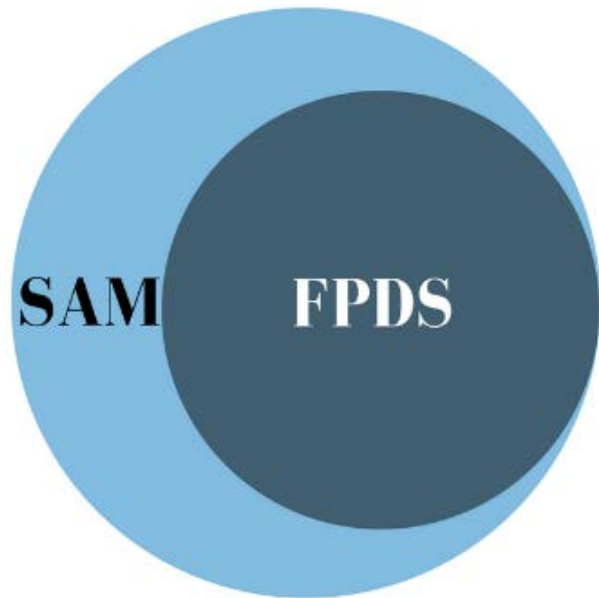
1. Survival rates are higher for small businesses compared to their large/medium sized competitors
2. There is a severe decline in the number of new entrants entering the market each year from 2001-2016
3. Low graduation rates as indicator of perverse incentives

## Limitations

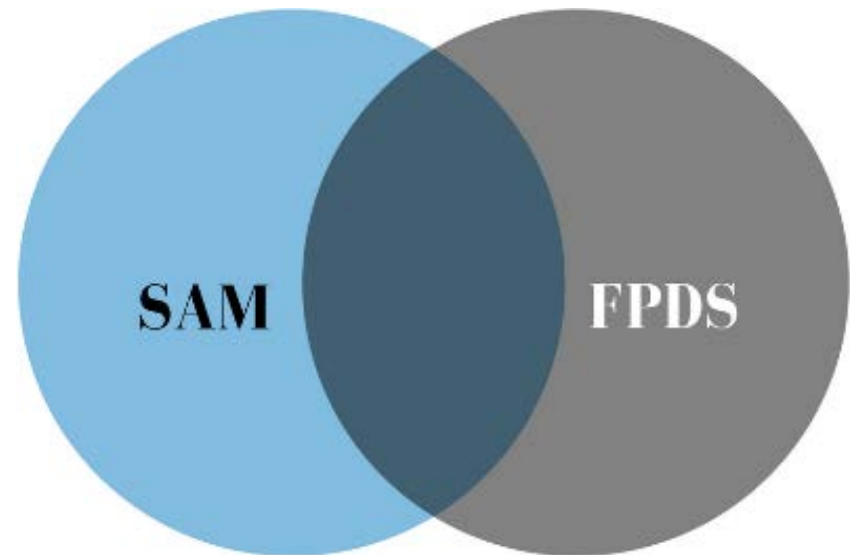
1. Survival and graduation rates paint a purely descriptive picture
2. Data reporting barriers

# Next Steps: Missing Data Reconciliation

How the two data sources should align

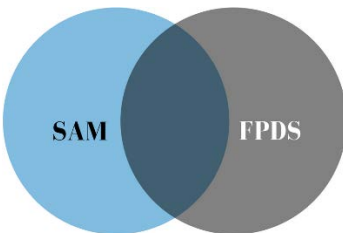


How the two data sources align in this work

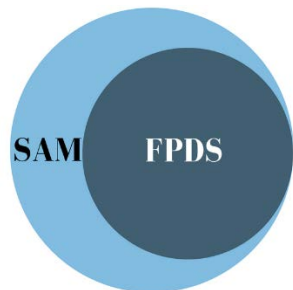




# Next Steps: Missing Data Reconciliation

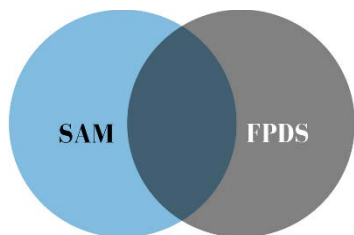


<b>SAM DUNS Number Matches to FPDS 1/2</b>									
<i>Fiscal Year</i>	2000	2001	2002	2003	2004	2005	2006	2007	2008
<i>SAM Data</i>	2,009	4,198	5,452	2,267	3,398	2,320	2,285	1,817	1,616
<i>SAM Matches to FPDS</i>	441	1,802	2,827	976	1,685	1,190	980	809	666
<i>Percent of Matched Data</i>	22%	43%	52%	43%	50%	51%	43%	45%	41%

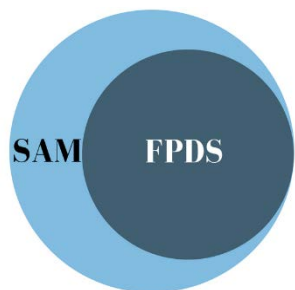


<b>SAM DUNS Number Matches to FPDS 2/2</b>									
<i>Fiscal Year</i>	2009	2010	2011	2012	2013	2014	2015	2016	2017
<i>SAM Data</i>	2,196	1,912	1,494	1,275	1,812	1,724	1,840	1,487	1,018
<i>SAM Matches to FPDS</i>	620	541	340	320	296	243	192	133	56
<i>Percent of Matched Data</i>	28%	28%	23%	25%	16%	14%	10%	9%	6%

# Next Steps: Missing Data Reconciliation



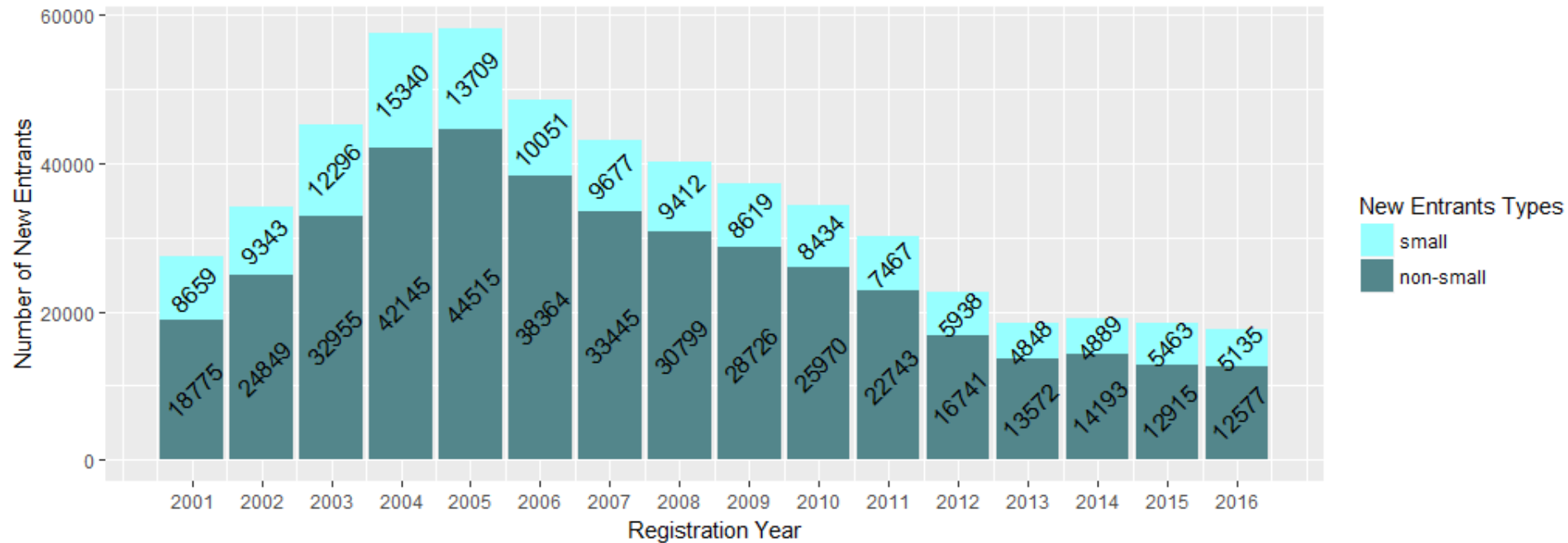
<b>FPDS DUNS Numbers Matches to SAM 1/2</b>										
<i>Fiscal Year</i>	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<i>FPDS Data</i>	39,986	25,346	29,564	39,665	55,097	62,115	48,744	42,391	39,766	
<i>FPDS Matches to SAM</i>	986	602	742	937	1,304	1,492	1,089	895	730	
<i>Percent of Matched Data</i>	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%



<b>FPDS DUNS Numbers Matches to SAM 2/2</b>										
<i>Fiscal Year</i>	2009	2010	2011	2012	2013	2014	2015	2016	2017	
<i>FPDS Data</i>	36,087	33,842	30,757	22,589	17,950	18,415	17,944	16,896	16,580	
<i>FPDS Matches to SAM</i>	673	591	494	417	393	366	287	235	111	
<i>Percent of Matched Data</i>	2%	2%	2%	2%	2%	2%	2%	1%	1%	

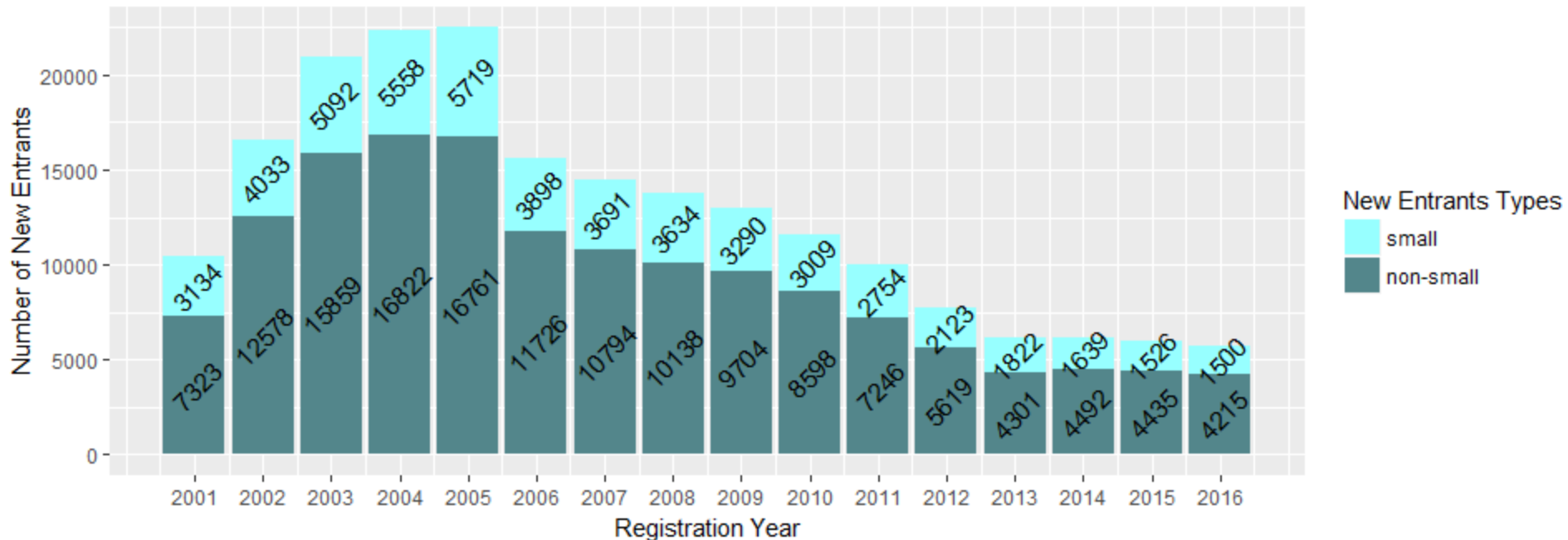
# Next Steps: Missing Data Reconciliation

Number of New Entrants Per Year (2001-2016) - All Federal Agencies



# Next Steps: Missing Data Reconciliation

Number of New Entrants Per Year (2001-2016) - DoD



# Future Considerations

1. Strengthening the statistical capacity of the calculations
2. Investigating the distribution of dollar obligations that go to surviving firms, exiting firms, and graduating firms
3. Parent company split-offs for defining individual businesses
4. Calculating the survival rates of all existing firms