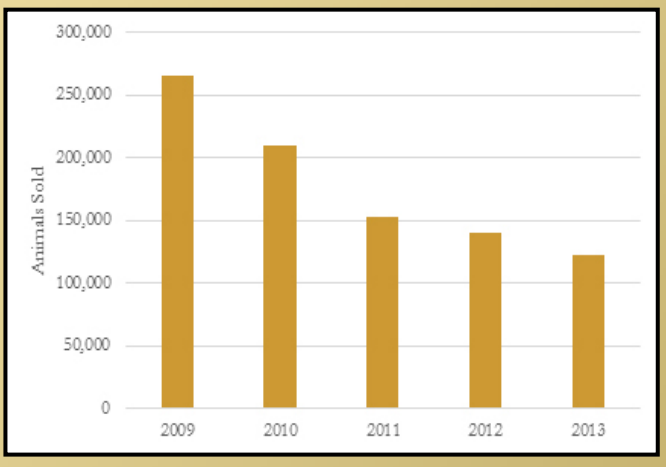
March 2015

Missouri Licensed Dog Breeding Industry Economic Contribution Study



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A special thanks to all Missouri licensed dog breeding operators that responded to the survey and/or contributed information concerning their operations for this study. Additionally, thanks to Missouri Farm Bureau for its work in sending and summarizing survey findings.

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I. Summary

The Missouri dog breeding industry contributes significant jobs and economic activity to the state. However, the industry has constricted. During 2009, 1,664 licensed commercial breeders operated in Missouri, and they sold 265,379 dogs. By comparison, 843 licensed commercial breeders operated in Missouri during 2013, and they sold 122,319 dogs. Although Missouri's dog breeding industry has contracted, U.S. consumers have had growing interest in pets. The American Veterinary Medical Association reports that 34.5 million households owned dogs in 1991, and that number grew to 43.3 million households in 2011. Based on a 2013 to 2014 survey, the American Pet Products Association suggests that 56.7 million households own a dog.

To learn more about the Missouri dog breeding industry, Missouri producers with current commercial dog breeding licenses were surveyed in 2014. Breeders received the survey instrument by mail. A total of 133 survey responses were received.

From a revenue perspective, Missouri dog breeders capture the greatest share of their sales by selling puppies. Breeding fees and adult dog sales represent two other revenue streams. During 2013, Missouri dog breeding industry revenue totaled an estimated $58.7 million. To operate their businesses, Missouri dog breeders incurred the greatest expenses for feed, veterinarian services, labor and transportation in 2013. Based on estimates, Missouri dog breeders collectively spent more than $40.1 million on operating expenses during 2013. In addition to operating costs, developing a new dog breeding operation can require various construction-related expenses that provide a one-time economic impact. Depending on the operation type, total capital investment may range from $69,000 to $656,000. Specific capital investment-related costs would include purchasing/renovating land, buying breeding stock, developing buildings/facilities and purchasing equipment.

The Missouri dog breeding industry includes operations of different types and scales. Five different typologies characterize most Missouri dog breeding operations: starting/retiring operation; supplemental income; small-scale, full-time operator; medium-scale, full-time operator; and large-scale, full-time operator. They vary based on their marketing methods, scale, goals, type of facility and operator characteristics. In Missouri, part-time dog breeding operations are common. Breeders typically start a part-time operation to augment farm or retirement income. Larger scale operations with different marketing channels are also common. Breeders vary by use of marketing channels, such as wholesale or retail. Variations also exist in their use of indoor versus outdoor facilities.

Based on the survey data collected, this report also estimates firm-level and industry-wide economic impacts created by the Missouri dog breeding industry. During 2013, the industry supported an estimated 1,535 jobs and provided $32 million in labor income, which includes wages, benefits and proprietor income. Jobs supported by the Missouri dog breeding industry are primarily classified in the agriculture sector. The industry's value-added impact, which measures the contribution to Missouri's gross domestic product, totaled nearly $77 million in 2013. Dog breeding operations generated $59 million in industry sales. After accounting for indirect and induced economic effects, the Missouri dog breeding industry stimulated total sales of $85 million. The industry also stimulated an estimated $3 million in state and local taxes and $7.6 million in federal taxes in 2013.

II. Economic Contribution of Missouri Dog Breeding Industry

2.1 Annual Economic Contribution

The Missouri dog breeding industry contributes significant jobs and economic activity to the state. The following section details the economic contributions of Missouri's dog breeding industry using standard economic metrics to analyze the value of regional industries. Missouri dog breeders were surveyed during 2014, and the survey findings were used to estimate firm-level sales and expenses. The firm-level survey results were then aggregated to estimate the industry's contribution to Missouri's economy using the IMPLAN economic impact software system.

IMPLAN is an input-output model and includes economic data sets, multipliers and demographic statistics for the entire U.S. economic infrastructure. It is a robust tool that assesses the effects of changes in the economy by sector, and it is widely used by economists and analysts. Estimations in this report used the 2013 IMPLAN data set for Missouri.

The IMPLAN impacts can be separated into three economic effects: direct, indirect and induced. A **direct** effect can be defined as a direct change in an area that occurs as a result of a change in an industry. For example, estimated sales revenue from dog breeding operations is a direct economic effect. These operations create an **indirect** effect when they purchase goods or services from other industries (feed, veterinary services, utilities, repairs, etc.). **Induced** effects are changes in household spending that stem from income generated by direct and indirect effects. For instance, employees at dog breeding operations will spend their income to buy real estate, shop at grocery stores or spend on other goods or services in the local economy.

Economic contributions from IMPLAN are categorized by various indicators such as output, jobs and value-added. **Value-added** refers to the difference between the industry output (value of production) and the cost of the inputs used in its production. It can also be interpreted as the net gain or contribution to the state's gross domestic product. Salaries, wages, taxes and profit would be included in this value-added classification. Another economic indicator is the number of **jobs**, which can be either full-time or part-time, supported by the industry. **Output** reflects the total value of industry production or sales.

Using the IMPLAN model, Exhibit 2.1.1 details the Missouri dog breeding industry's contribution to Missouri's economy in 2013. The industry supported 1,535 jobs and provided $32 million in labor income, which includes wages, benefits and proprietor income. The value-added impact, which measures the contribution to Missouri's gross domestic product (GDP), totaled approximately $77 million. Dog breeding operations generated $59 million in industry sales, which is otherwise known as the output impact. After accounting for indirect and induced economic effects, the Missouri dog breeding industry stimulated total sales of $85 million during 2013.

Exhibit 2.1.1 – Economic Contribution of the Missouri Dog Breeding Industry, 2013

Impact Type	Employment (Jobs)	Labor Income (Dollars)	Value-Added (Dollars)	Output (Dollars)
Direct effect	1,281	$23,508,180	$61,829,050	$58,654,960
Indirect effect	79	$1,359,187	$2,566,071	$5,292,192
Induced effect	175	$7,134,540	$12,128,691	$21,268,460
Total effect	**1,535**	**$32,001,907**	**$76,523,812**	**$85,215,612**

Note: May not sum due to rounding

Jobs supported by the Missouri dog breeding industry are primarily classified in the agriculture sector. In 2013, the dog breeding industry supported 1,309 agriculture sector jobs. Exhibit 2.1.2 shows the jobs impact by standard IMPLAN sector and also by direct, indirect and induced economic effects. The service sector was the second largest sector supported by the Missouri dog breeding industry. The Missouri Department of Agriculture reported 33 employees working for their department or the USDA as inspectors, veterinarians, administrative staff and managers in the Missouri Animal Care Program. The state's dog breeding industry supported 143 service sector jobs in 2013.

Exhibit 2.1.2 – Missouri Dog Breeding Industry Jobs by Standard Sector, 2013

Description	Direct	Indirect	Induced	Total
Agriculture	1,281.1	27.4	0.8	1,309.3
Mining	0.0	0.1	0.1	0.2
Construction	0.0	0.9	1.8	2.7
Manufacturing	0.0	1.0	1.7	2.7
Transportation, Comm. & Public Utilities	0.0	3.0	4.8	7.9
Trade	0.0	3.8	30.7	34.5
Service	0.0	9.5	133.6	143.0
Government	0.0	33.0	1.9	34.9
Total	**1,281.1**	**78.7**	**175.4**	**1,535.2**

2.2 Survey Results Used to Estimate Economic Contribution

A survey was conducted in 2014 to gather information about the Missouri dog breeding industry. Surveys were mailed to Missouri breeders with current commercial dog breeding licenses. Survey questions were focused on understanding the size, expenses and sales for breeding operations.

A total of 133 survey responses were received, which resulted in a 16 percent response rate. This representative sample was used to estimate average production information per operation and extrapolate about the entire Missouri industry based on the total number of licensed breeders in the state during 2013.

To operate their businesses, Missouri dog breeders incurred the greatest expenses for feed, veterinarian services, labor and transportation during 2013. Total expenses for a Missouri dog breeding operation averaged $47,575 during 2013. Based on estimates for the whole industry, Missouri dog breeders spent more than $40.1 million on operating expenses during 2013. Exhibit 2.2.1 illustrates operating expense data by average operation and the estimated industry total.

Exhibit 2.2.1 – Missouri Dog Breeding Operating Expenses, 2013

Question	Avg. per Operation	Estimated Total Industry
Feed	$8,500	$7,165,874
Veterinarian services	$6,049	$5,099,018
Medicine	$1,945	$1,639,283
Breeding *(female replacement, AI, stud cost)*	$2,766	$2,331,996
Utilities		
Water	$596	$502,347
Electricity	$2,180	$1,837,832
Other	$140	$118,396
Repairs and maintenance	$2,754	$2,321,610
Labor	$5,883	$4,959,270
License *(MDA and USDA)*	$657	$553,827
Registration *(litter and individual dog)*	$845	$712,426
Marketing *(advertising, website development, etc.)*	$878	$739,748
Insurance	$1,096	$923,849
Transportation *(mileage and shipping)*	$5,836	$4,919,523
Supplies	$3,123	$2,632,784
Professional fees *(record keeping, taxes, etc.)*	$722	$608,266
Interest	$926	$780,679
Depreciation	$2,282	$1,923,618
Other expenses	$398	$335,704
Total Expenses	**$47,575**	**$40,106,050**

Note: Totals may not add due to rounding.

From a revenue perspective, Missouri dog breeders capture the greatest share of their sales by selling puppies. Breeding fees and adult dog sales represent two other revenue streams. See Exhibit 2.2.2. During 2013, industry revenue totaled an estimated $57.2 million for puppy sales, $790,354 for breeding fees and $683,270 for adult dog sales. Revenue per operation averaged $69,579, and industry-wide revenue for Missouri totaled an estimated $58.7 million.

Exhibit 2.2.2 – Missouri Dog Breeding Operating Revenue, 2013

Question	Avg. per Operation	Estimated Total Industry
Total dollars from puppy sales	$67,831	$57,181,336
Total dollars from adult dog sales	$811	$683,270
Total dollars from breeding fees	$938	$790,354
Total Revenue	**$69,579**	**$58,654,960**

Note: Totals may not add due to rounding.

Given the cost and revenue findings and estimates shared in the previous two exhibits, Exhibit 2.2.3 approximates profit for Missouri dog breeding operations. During 2013, the average Missouri dog breeder earned $22,003 in profit. Industry profits in Missouri totaled an estimated $18.5 million.

Exhibit 2.2.3 – Missouri Dog Breeding Operation Economic Summary, 2013

Category	Avg. per Operation	Estimated Total Industry
Total expenses	$47,575	$40,106,050
Total revenue	$69,579	$58,654,960
Net Income (Profit)	**$22,003**	**$18,548,910**

2.3 Tax Revenue Generated by the Missouri Dog Breeding Industry

Tax revenues include those paid to local, state and federal entities. Tax impact values show the revenue generated from employee compensation, proprietor income, indirect business taxes, households and corporations. The Missouri dog breeding industry stimulated approximately $3 million in state and local taxes and $7.6 million in federal taxes during 2013. Exhibit 2.3.1 illustrates the state and local tax impact by category, and Exhibit 2.3.2 depicts the federal tax impact.

Exhibit 2.3.1 – Missouri Dog Breeding Industry State and Local Tax Impact

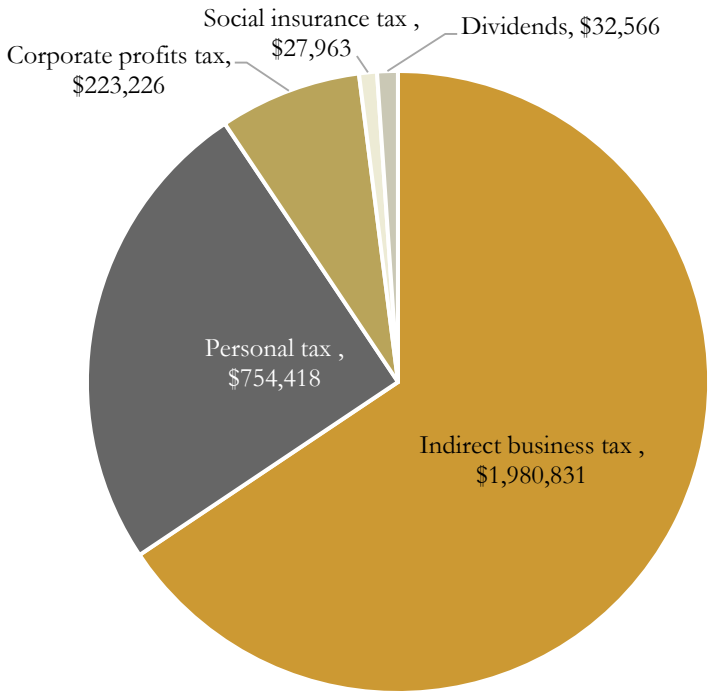
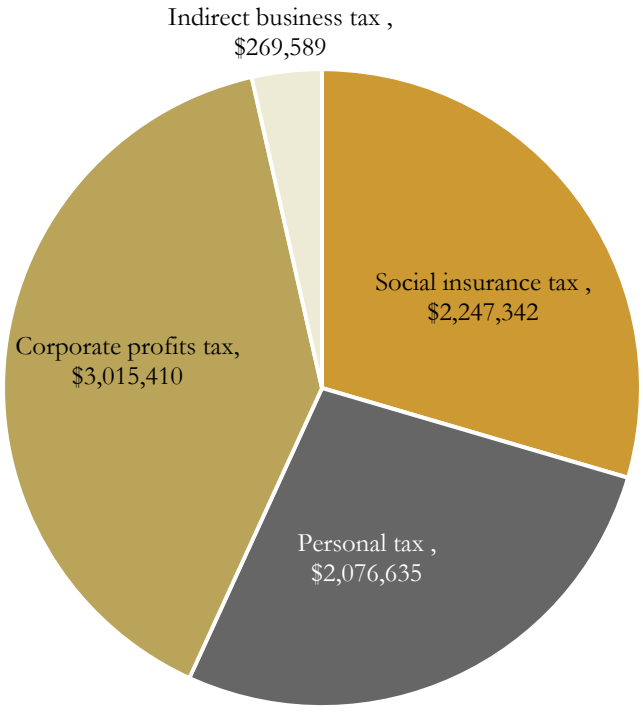


Exhibit 2.3.2 – Missouri Dog Breeding Industry Federal Tax Impact



2.4 Typologies of Missouri Dog Breeding Operations

The Missouri dog breeding industry includes operations of different types and scales. Exhibit 2.4.1 breaks down Missouri dog breeding operations into five different typologies. Within these categories, operations may vary based on their marketing methods, scale, goals, type of facility and operator characteristics. In Missouri, part-time dog breeding operations are common. Breeders typically start a part-time operation to augment farm or retirement income, and these breeders would have long-term interest in the industry. Larger scale operations with different marketing channels are also common. Breeders vary by use of wholesale or retail marketing channels. Some may use a combination of both. Variations also exist in their use of indoor versus outdoor facilities.

Exhibit 2.4.1 – Missouri Dog Breeding Operation Typologies and Their Characteristics

Operation Type	**Description**	**Marketing Method**	**Operation Scale Range** (number of breeding females)
Starting/Retiring Operation	Entry-level enterprise using indoor/outdoor facilities. Good size for FFA project, retirees or young family.	Retail and wholesale	10 to 20
Supplemental Income	Enterprise sized to provide supplemental income for stay-at-home mothers or supplemental full-time livestock farm income.	Retail and wholesale	20 to 60
Small-Scale, Full-Time Operator	Full-time operation using Internet marketing and photo skills to market directly to family buyers who come to the farm.	Retail	40 to 80
Medium-Scale, Full-Time Operator	Full-time operation fits people who do not want to connect directly to customers and be tied to retail time commitments.	Wholesale	100 to 150
Large-Scale, Full-Time Operator	Full-time enterprise geared toward someone with extensive industry experience, efficiency and animal skills.	Wholesale	Greater than 200

2.5 Construction Impacts when Starting New Operations

Developing a new dog breeding operation can require various construction-related expenses that provide a one-time economic impact to the economy. A significant portion of these dollars will be spent locally for contractors, specialized labor and building supplies. Exhibit 2.5.1 demonstrates how new investments stimulate economic benefits – in terms of direct, indirect and induced economic effects – in Missouri when a new operation develops. Total capital investment ranges from $69,000 for a "starting/retiring operation" to $656,000 for a "large-scale, full-time operator." The table also shares one-time output, jobs and value-added impacts for constructing operations of various sizes.

Exhibit 2.5.1 – New Missouri Dog Breeding Operation One-Time Construction Impact

Category	Starting/ Retiring Operation	Supplemental Income	Small-Scale, Full-Time Operator	Medium-Scale, Full-Time Operator	Large-Scale, Full-Time Operator
Number of breeding females	*20*	*40*	*60*	*125*	*200*
Total Capital Investment	$69,000	$173,000	$364,000	$599,000	$656,000
Total Output	$113,042	$284,327	$598,238	$984,463	$1,078,143
Total Jobs Supported	0.7	1.9	3.9	6.5	7.1
Total Value-Added	$57,464	$144,077	$303,144	$498,855	$546,326

Starting a new dog breeding operation requires significant capital. Capital investments would include purchasing/renovating land, buying breeding stock, developing buildings/facilities and purchasing equipment. Exhibit 2.5.2 lists 2014 breeding stock prices by breed. These breeding stock prices indicate the expenses incurred to populate a new operation.

Exhibit 2.5.2 – Estimated Breeding Stock Prices in Missouri, 2014

Breed	Avg. Price	Breed	Avg. Price	Breed	Avg. Price
Affenpinscher	$600	Corgi	$650	Neapolitan Mastiff	$900
Airedale	$1,200	Coton de Tulear	$500	Newfoundland	$1,400
Akita	$500	Dachshund	$400	Norfolk Terrier	$600
Am. Bulldog	$400	Dalmatian	$1,000	Olde English Bulldog	$500
Am. Eskimo	$500	Designer Dog	$300	Papillon	$500
Aus. Shepherd	$400	Doberman	$750	Pekingese	$550
Basset Hound	$500	English Bulldog	$1,200	Pomeranian	$450
Beagle	$400	English Mastiff	$750	Poodle	$800
Bearded Collie	$600	French Bulldog	$1,500	Pug	$600
Ber. Mtn. Dog	$1,200	German Shepherd	$800	Rat Terrier	$250
Bichon Frise	$450	Golden Retriever	$800	Rottweiler	$900
Bloodhound	$800	Great Dane	$800	Schnauzer	$650
Bordeaux	$800	Havanese	$600	Shar Pei	$650
Border Collie	$400	Husky	$500	Shetland Sheep Dog	$400
Boston Terrier	$800	Italian Greyhound	$600	Shiba Inu	$600
Bouvier	$1,250	Jack Russell	$300	Shih Tzu	$600
Brussels Griffon	$800	Japanese Chin	$400	Siberian Husky	$600
Bull Mastiff	$800	Lab Retriever	$500	Silky Terrier	$400
Cairn Terrier	$400	Leonberger	$1,000	Soft Coat Wheaton	$750
Cavalier	$900	Lhasa Apso	$400	St. Bernard	$800
Chihuahua	$350	Malamute	$500	Toy Shepherd	$800
Chow Chow	$800	Maltese	$500	Westie	$700
Clumber Spaniel	$750	Miniature Pinscher	$400	Yorkie	$600
Cocker Spaniel	$400	Miniature Shepherd	$600		

Source: Industry Sources

Each operation typology has different capital investment needs. Exhibit 2.5.3 shares average investments needed to develop a new operation by typology. Information was collected, summarized and averaged from a sample of existing Missouri dog breeding operations to develop these estimates. For all but the "starting/retiring operation" category, buildings and facilities were estimated to be the most significant capital investment required. For a "starting/retiring operation," the breeding stock was estimated to be the greatest capital cost incurred. Per breeding female, capital investments were estimated to be greatest for small-scale, full-time operators and medium-scale, full-time operators. Large-scale, full-time operators were estimated to have the lowest capital investment required per breeding female.

Exhibit 2.5.3 – Missouri Dog Breeding Operations Average Capital Investments

Category	Starting/ Retiring Operation	Supplemental Income	Small-Scale, Full-Time Operator	Medium-Scale, Full-Time Operator	Large-Scale, Full-Time Operator
Number of breeding females	*20*	*40*	*60*	*125*	*200*
Land and site development	$8,000	$17,000	$63,000	$65,000	$57,000
Breeding stock	$17,000	$33,000	$49,000	$102,000	$163,000
Buildings and facilities	$31,000	$78,000	$153,000	$353,000	$330,000
Equipment	$6,000	$27,000	$64,000	$27,000	$48,000
Miscellaneous	$7,000	$18,000	$35,000	$52,000	$58,000
Total Investment	**$69,000**	**$173,000**	**$364,000**	**$599,000**	**$656,000**
Total per Breeding Female	**$3,450**	**$4,325**	**$6,067**	**$4,792**	**$3,280**

III. The Industry

3.1 The Dog Breeding Industry

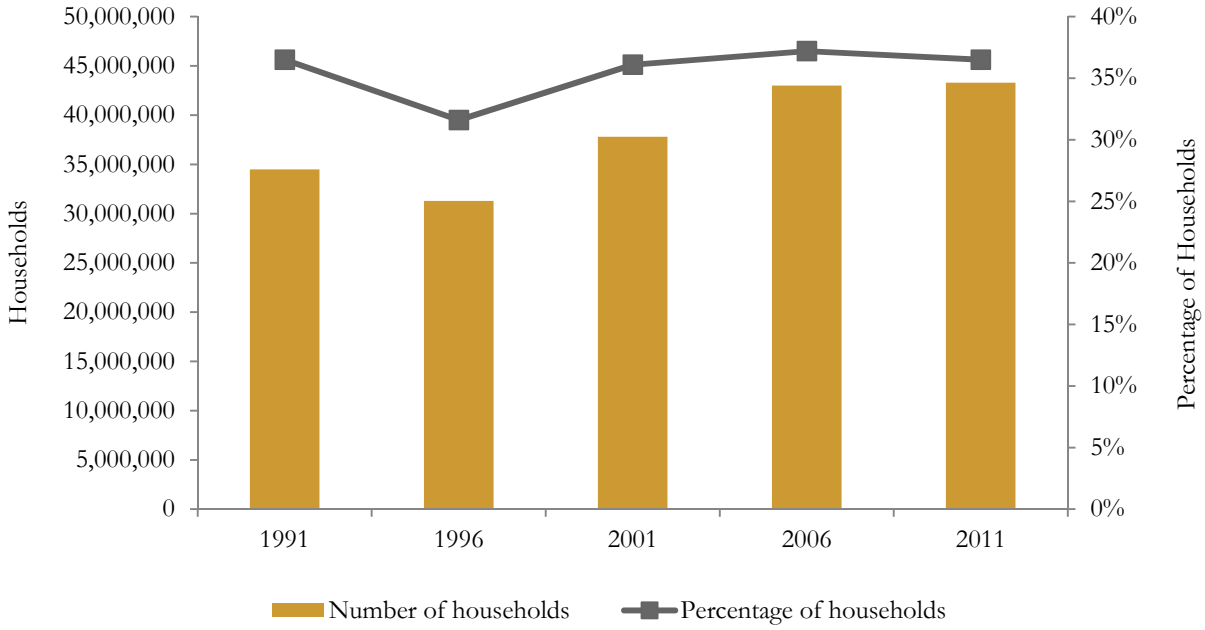
During the past several decades, several factors contributed to the U.S. dog breeding industry growing. As an industry, dog breeding popularized when World War II concluded. At the time, farmers needed new unconventional income-generating opportunities, and USDA encouraged that dog breeding provided such potential (Tushaus 2009). Later, some farmers' wives began breeding dogs to provide added farm revenue, and when market forces challenged the viability of small-scale hog operations, some of those smaller scale operators began breeding dogs to sustain their farms' viability (Benson 2014).

3.2 American Pet Ownership and Spending

Americans have increased their ownership of pets, including dogs. American Pet Products Association data cited by IBISWorld, a market research firm, indicate that 56 percent of U.S. households had a pet in 1998. That share of U.S. households grew to an estimated 68 percent in 2014 (Brennan 2014).

Regarding dog ownership, Exhibit 3.2.1 presents dog ownership data shared by the American Veterinary Medical Association from 1991 to 2011. These data indicate that the total number of households owning dogs increased from 34.5 million on Dec. 31, 1991, to 43.3 million on Dec. 31, 2011. The share of households owning dogs changed some during the observed period, but in both 1991 and 2011, 36.5 percent of households owned a dog (American Veterinary Medical Association 2012). Based on a 2013 to 2014 survey, the American Pet Products Association suggests that 56.7 million households own a dog. Some households own multiple dogs because 83.3 million dogs are pets in the U.S. (American Pet Products Association 2014). In Missouri, 45.9 percent of households owned a dog on Dec. 31, 2011. Other states with a large share of households owning a dog on Dec. 31, 2011, were Arkansas, 47.9 percent; New Mexico, 46 percent; and Kentucky, 45.9 percent (American Veterinary Medical Association 2012).

Exhibit 3.2.1 – U.S. Dog Ownership Trend, 1991 to 2011



Source: American Veterinary Medical Association

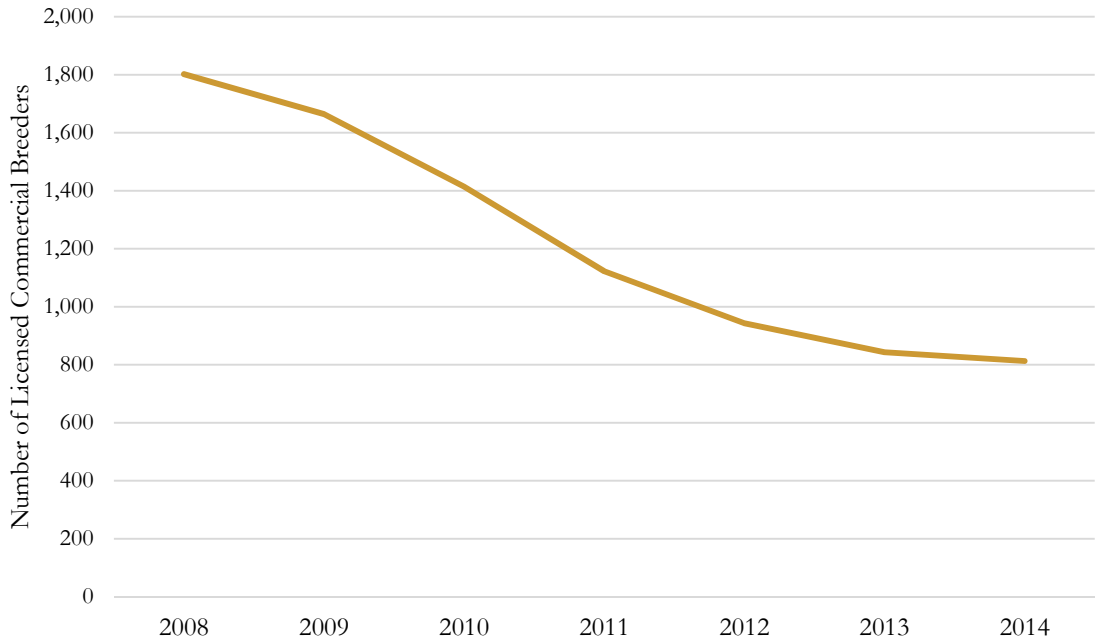
Looking into the future, IBISWorld projects that Americans will own more pets. Through 2019, IBISWorld projects that demand for dogs and cats will increase, especially among single-person households and older Americans because pet ownership is becoming more popular among people in these two groups. In the five years preceding 2019, the number of pets owned will grow 2.1 percent annually on average, based on IBISWorld projections (Brennan 2014). As households add dogs, small dogs will be popular (Bonnell 2013).

The American Pet Products Association reported that estimated pet industry spending would total $58.51 billion for 2014. This is more than three times the $17 billion spent during 1994. Of the estimated 2014 spending, an estimated $2.19 billion would be spent on live animals (American Pet Products Association 2014).

3.3 Missouri Dog Breeding Industry

The Missouri Department of Agriculture (MDA) provides oversight to the state's dog breeding industry. It also issues licenses for animal shelters, boarding kennels, commercial kennels, contract kennels, dealers, pet sitters, exhibitors, hobby shows, intermediate handlers, dog pounds, pet stores, rescues and listing services. If producers have four or more intact females and are breeding dogs for commercial sale, they will need a commercial breeding license issued by MDA. All commercial breeders will be inspected at least once a year by MDA. Exhibit 3.3.1 shows the number of commercial breeders (dogs and cats) in Missouri from 2008 to 2014. The number of licenses dropped significantly during this time period. In 2014, 813 commercial breeders had Missouri licenses. Missouri commercial breeders primarily breed dogs. In 2014, 97.5 percent of the licensed commercial breeders listed that their operation only bred dogs, according to the Missouri Department of Agriculture. Commercial breeders also reported to have a state-wide inventory of 30,056 intact females or 36.2 females per breeder during the 2014 year.

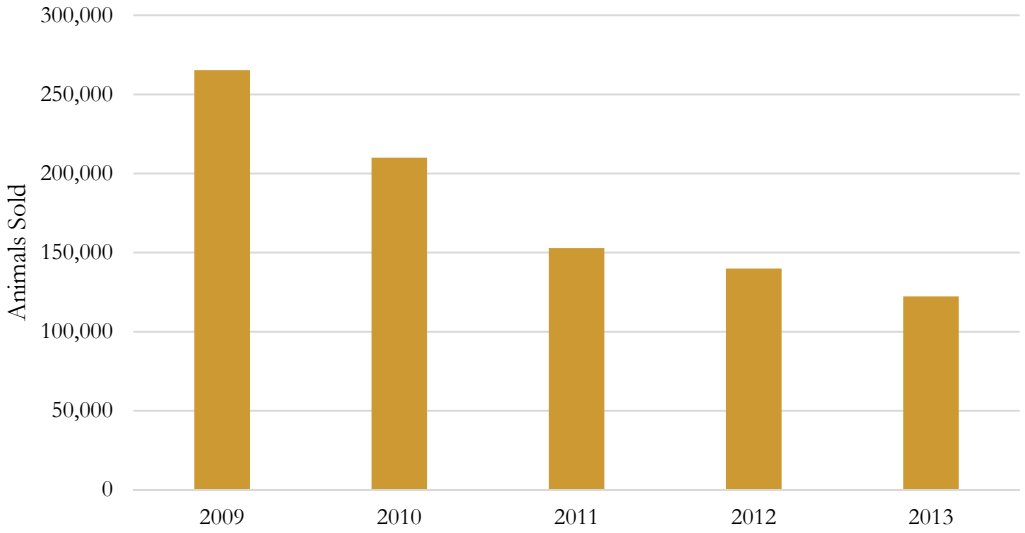
Exhibit 3.3.1 – Missouri Licensed Commercial Breeders, 2008 to 2014



Source: Missouri Department of Agriculture

As the number of Missouri commercial breeders has declined, the number of puppies sold by these operations and dealers has also decreased. Exhibit 3.3.2 shows the number of dogs sold by Missouri-licensed breeders and dealers from 2009 to 2013. In 2013, Missouri commercial breeders sold 122,319 animals. Dogs sold in 2009 totaled 265,379.

Exhibit 3.3.2 – Dogs Sold by Missouri Commercial Breeders and Dealers, 2009 to 2013



Source: Missouri Department of Agriculture

IV. Regulation of Dog Breeding Operations

Regulation at the federal, state and municipal levels influence dog breeders and their ability to operate their businesses. The following sections describe regulation trends at each of these levels.

4.1 Federal Regulations

Federally, the Animal Welfare Act provides USDA with the authority to regulate animal breeding operations that engage a wholesaler to reach consumers. For breeders who only sell directly to consumers, they aren't subject to the federal requirements. Retail pet stores also are exempt (Tushaus 2009). Businesses that breed animals and market them to pet stores, brokers and research facilities must receive a license from the USDA Animal and Plant Health Inspection Service. USDA also regulates wholesale dealers that sell to pet stores, brokers or research facilities. Breeders with USDA licenses are subject to inspections, which occur more often at facilities that struggle to meet standards. Inspections occur before granting a license, on an unannounced basis to monitor rule compliance and in response to complaints. If an inspection reveals a noncompliance issue, then the breeder has a given time period to fix the infraction or undergo further investigation. Inspections check adherence to standards regarding housing, sanitation, food, water and safety from weather and temperature. Licensees must also regularly work with a veterinarian and maintain suitable records. Ultimately, failing to address poor practices and correct noncompliance issues or engaging in a serious incident may lead to an investigation. Enforcement possibilities include warning letters, fines, cease-and-desist orders and license suspensions or revocations (APHIS 2014).

4.2 State Regulations

State laws and regulations may fill voids in federal legislation. The American Veterinary Medical Association reports that just 12 states lack companion animal breeder regulation. These are states without definitions; prohibitions and standards of care; licensing, registration and permit rules; or inspection requirements for companion animal breeding. All other states have at least some form of regulation (American Veterinary Medical Association 2014).

To address Missouri dog breeding facility conditions, Missouri created standards in 1992 with the Animal Care Facilities Act. The act also more broadly regulated animal welfare for other organizations and businesses (Benson 2014). Compliance required that breeders support enough staff to provide the necessary animal husbandry practices and care, schedule regular veterinary care, provide floor space that totals the "length of the dog plus 6 inches squared/144," ensure that dog feet can't pass through wire flooring, devise an exercise plan for dogs housed alone, supply food at least every 12 hours and water every eight hours and allow the Missouri Department of Agriculture to ask the Attorney General to pursue closing operations that create "a substantial ongoing threat to the health and welfare of the animals" (Canine Cruelty Prevention Unit).

Activists have labeled dog breeding operations as "puppy mills." This led to efforts for further regulating these facilities. In November 2010, Missouri voters narrowly approved Proposition B (Benson 2014). Prop B added several provisions for dog breeders to satisfy. Those included setting a 50-dog breeding inventory maximum, limiting dogs from producing more than two litters during an 18-month period, clarifying veterinary care expectations, expanding space requirements, mandating

that enclosures have solid flooring, providing unfettered outdoor access, offering water continuously and providing enough food at least once each day to sustain good health. Prop B also enabled county prosecutors to charge animal cruelty crimes in their jurisdictions (Canine Cruelty Prevention Unit).

After Prop B's passage, the Missouri legislature sought to refine components of the law. These efforts and compromise with the governor led to the Canine Cruelty Prevention Act, which was otherwise called the "Missouri Solution" (Benson 2014). Exhibit 4.2.1 summarizes provisions of the act. Missouri dog breeders have the obligation to adhere to these provisions.

Exhibit 4.2.1 – Canine Cruelty Prevention Act Provisions

	Provision
Dogs allowed per facility	"No limit – will leave in effect current requirement that there must be enough employees to carry out the level of husbandry practices and care as required by law"
Breeding frequency	"Ensure female dogs are not bred to produce more litters in any given period than is recommended by a licensed veterinarian as appropriate for the species, age and health of the dog; all pertinent veterinary records shall be maintained for a two-year period and shall be available to inspectors"
Veterinary care	"Examination at least once yearly by a licensed veterinarian; prompt treatment of any serious illness or injury by a licensed veterinarian; humane euthanasia where needed by a licensed veterinarian using lawful techniques deemed acceptable by the AVMA"
Space	"Two times the space allowable under current regulations by January 1, 2012; three times the space allowable for any enclosure constructed after April 15, 2011, and for all enclosures as of January 1, 2016"
Flooring	"Prohibits wire flooring for any enclosure newly constructed after April 15, 2011, and for all enclosures as of January 1, 2016"
Exercise	"Except as prescribed by rule, licensees shall provide constant and unfettered access to an attached outdoor run for any enclosure newly constructed after April 15, 2011, and for all enclosures as of January 1, 2016"
Food and water access	"Access to appropriate nutritious food at least twice a day sufficient to maintain good health, and continuous access to potable water that is not frozen and is generally free of debris, feces, algae, and other contaminants"
Enforcement	"Gives the Missouri Department of Agriculture the ability to request the Attorney General to sue operators for past violations of the ACFA and the CCPA to bring them into compliance with the law, including compelling operators to obtain a license to operate, to assess civil penalties of $1,000 per violation, and to charge individuals with the crime of canine cruelty"

Source: Canine Cruelty Prevention Unit

4.3 Municipal Regulation

Municipalities have also implemented regulation that influences dog breeders. Such regulation has restricted selling companion animals at retail, such as pet shops. Several municipalities have adopted companion animal sales limitations in their cities. Those include Chicago, IL; Los Angeles, CA; San Diego, CA; Phoenix, AZ; Albuquerque, NM; Austin, TX; Glendale, CA; and Irvine, CA (Smith and Dardick 2014 and Zara 2013). Such ordinances started gaining popularity around 2010 after West Hollywood, CA, created an ordinance focused on this issue (Zara 2013). By restricting pet stores from selling animals sourced from breeders, the breeders lose a market.

Each municipality may create its own rules. The Chicago ordinance provides an example. It precludes pet stores from purchasing dogs, cats or rabbits from "large-scale breeding operations" and reselling the animals in their stores beginning in March 2015. To sell animals, they must be sourced "from government pounds, rescue operations or humane societies." The rule exempts animals sold online and those that breeders don't sell at retail stores (Smith and Dardick 2014).

At some point, states may adopt similar measures. Connecticut became the first state to evaluate restricting dog sales at retail (Newsweek 2013). The proposed bill didn't pass a ban, however. Instead, the state formed a task force to further explore the issue (Lemon 2013).

4.4 Regulation Guidance

Many states have adopted provisions to hold dog breeders accountable for their husbandry and care methods; however, the laws in these states vary. To provide more consistency throughout the industry, the Center for Animal Welfare Science at Purdue University has committed to developing a standards-of-care framework built on research findings and expert opinion. The framework would address health, genetics, reproductive management, wellness and ethical practices (NEWStat 2014). By sharing such information, the industry may have better resources to consistently self-regulate dog breeders, or lawmakers may use the recommendations to create a more uniform approach to creating and implementing dog breeding standards.

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Appendix

A.1 Survey Instrument

The following survey instrument was used to collect information from Missouri dog breeders in 2014. The questionnaire gathered economic information used in this report to describe the Missouri dog breeding industry. Surveys were mailed to Missouri producers with a current commercial dog breeding license. Survey questions were focused on understanding the size, expenses and sales for the participating operations.

Exhibit A1 – Missouri Dog Breeding Industry Survey Instrument

Question #1: Number of intact animals, six months and older, on hand January 1st, 2014
a. Females (number)
b. Males (number)
Question #2: Detail your operating expenses ($) in the year 2013.
a. Feed
b. Veterinarian Services
c. Medicine
d. Breeding (female replacement, AI, stud cost)
e. Utilities
Water
Electricity
Other – please specify _____
f. Repairs and maintenance
g. Labor
h. License (MDA and USDA)
i. Registration (litter and individual dog)
j. Marketing (advertising, website development, etc.)
k. Insurance
l. Transportation (mileage and shipping)
m. Supplies
n. Professional fees (record keeping, taxes, etc.)
o. Interest
p. Depreciation
q. Other expenses – please specify _____
r. Other expenses – please specify _____
Question #3: Detail your revenue information that occurred in the year 2013.
a. Total number of puppies sold
b. Total dollars from puppy sales
c. Total number of adult dogs sold (1 year and older)
d. Total dollars from adult dog sales
e. Total dollars from breeding fees