

# MARKETS FOR MILK IN ALABAMA

*Note*

INTRODUCTION .....	220
I. OVERVIEW OF BREASTMILK MARKETS.....	220
A. <i>The Demand</i> .....	220
B. <i>The Supply</i> .....	225
1. <i>“Formal” Markets</i> .....	225
2. <i>“Informal” Markets</i> .....	228
II. IMPORTANCE OF INFORMAL MARKETS.....	230
A. <i>Current Legal Status of Informal and Formal For-Profit Markets</i> .....	230
1. <i>Federal and State Governments</i> .....	230
2. <i>Alabama</i> .....	232
B. <i>The Future of Informal and Formal For-Profit Markets</i> .....	233
C. <i>Advantages of Informal For-Profit Markets</i> .....	236
III. A PATH FOR MILK MARKETS IN ALABAMA .....	238
CONCLUSION .....	241

## MARKETS FOR MILK IN ALABAMA

*Note*

## INTRODUCTION

In August 2018, Mary Catherine Fortier and Glenda Nielson met in a parking lot in Maumelle, Arkansas to exchange over 40,000 grams of a product that Nielson had stashed in the trunk of her car.<sup>1</sup> Fortier passed Nielson an envelope stuffed with cash in exchange for the small white bags that filled Nielson's trunk.<sup>2</sup> The product that filled the bags can trade for four hundred times the price of crude oil and cost fifteen times the price of coffee.<sup>3</sup> Fortier and Nielson's exchange was not a drug deal. It was a breastmilk exchange.

This Note examines the market for breast milk in the United States, one for which many states, including Alabama, struggle to set standards and guidelines. I argue that informal, peer-to-peer markets are an enduring and sometimes valuable feature of the growing market for breast milk and require thoughtful treatment from policymakers and regulators in the state of Alabama. Part I explores breastmilk markets in the United States, including an analysis of the growing demand for breast milk and the formal and informal supply channels responding to the need. Part II proposes that peer-to-peer breastmilk transactions are enduring features of the milk market and highlights the current legal status of markets for breast milk across the United States and in Alabama. Finally, Part III argues for a fresh approach to breastmilk transactions in the state of Alabama that can address common concerns over informal markets for breast milk while allowing them to thrive.

## I. OVERVIEW OF BREASTMILK MARKETS

*A. The Demand*

Breast milk has long been shared between non-biological acquaintances due to both necessity and vanity. When mothers died in childbirth or experienced obstacles to breastfeeding, other women with nursing infants would assist in

---

1. See Bobby Ampezzan, *On the Internet, Breast Milk a Free-Market Answer to Oversupply and Demand, for Moms and Men*, ARK. PUB. MEDIA (Aug. 2, 2018, 5:01 PM), <https://www.arkansaspublicmedia.org/health/2018-08-02/on-the-internet-breast-milk-a-free-market-answer-to-oversupply-and-demand-for-moms-and-men>.

2. *Id.*

3. Michael Catalini, *The Battle for Control of the Growing Breast Milk Industry*, ASSOCIATED PRESS (July 7, 2015), <https://apnews.com/article/97fa0b0bf1bf4cf983a724545770a059>.

breastfeeding their infants,<sup>4</sup> able to accommodate the extra demand from another mother's child because lactation represents the "natural equilibrium between supply and demand."<sup>5</sup> Hired wet nurses and enslaved women also commonly breastfed the children of wealthy, elite women who wished to avoid breastfeeding.<sup>6</sup>

The historical demand for breast milk is also explained in part by the reality that breast milk long represented the safest option for feeding a growing infant. In the nineteenth century, the cow's milk used as a substitute for breast milk was usually unpasteurized and contaminated with bacteria and harmful pathogens,<sup>7</sup> and early artificial feeding devices had crude designs that were difficult to clean and allowed bacteria to thrive.<sup>8</sup> Overall, an estimated one-third of all artificially-fed infants died during their first year of life in the early nineteenth century.<sup>9</sup>

However, the demand for breast milk in the United States waned in the twentieth century as pediatricians started recommending infant formula as a worthy substitute for breast milk,<sup>10</sup> states instituted the first cow-milk pasteurization requirements,<sup>11</sup> and innovations in feeding equipment, such as the rubber nipple, made breastmilk alternatives more viable options.<sup>12</sup> As a result, breastfeeding rates in the United States fell by 50% from 1946 to 1956 and continued to experience a steady decline until the 1970s.<sup>13</sup>

Due to a host of factors, breastfeeding rates and breastmilk demand have steadily increased in the United States since the 1970s. Where only about 22% of women reported breastfeeding for some period of time in 1972, 87% of women surveyed in a 2016 study reported breastfeeding their children for at least some period of time.<sup>14</sup> The federal government and organizations such as the American Academy of Pediatrics (AAP) have occupied important roles in

---

4. See Emily E. Stevens et al., *A History of Infant Feeding*, J. PERINATAL EDUC., Spring 2009, at 32, 32–33.

5. See Sarah E. Waldeck, *Encouraging a Market in Human Milk*, 11 COLUM. J. GENDER & L. 361, 361 (2002).

6. See Stevens et al., *supra* note 4, at 33.

7. See JACQUELINE H. WOLF, DON'T KILL YOUR BABY: PUBLIC HEALTH AND THE DECLINE OF BREASTFEEDING IN THE NINETEENTH AND TWENTIETH CENTURIES 42–49 (2001).

8. See Stevens et al., *supra* note 4, at 35.

9. *Id.*

10. See Linda C. Fentiman, *Marketing Mothers' Milk: The Commodification of Breastfeeding and the New Markets for Breast Milk and Infant Formula*, 10 NEV. L.J. 29, 37–38 (2009).

11. See *Raw Milk: A Research Anthology of Legal and Public Health Resources*, CTNS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/phlp/publications/topic/anthologies/anthologies-rawmilk.html> (last visited Dec. 16, 2021).

12. See Stevens et al., *supra* note 4, at 35.

13. See Fentiman, *supra* note 10, at 38 (citing DONNA V. PORTER, CONG. RSCH. SERV., RL 32002, BREAST-FEEDING: IMPACT ON HEALTH, EMPLOYMENT AND SOCIETY 1 (2003)).

14. Esmé E. Deprez, *How Medela Lost Moms*, BLOOMBERG BUSINESSWEEK (Dec. 29, 2020, 4:22 PM), <https://www.bloomberg.com/news/features/2020-12-09/how-medela-known-for-its-breast-pumps-lost-its-monopoly-on-moms>; see NAT'L ACAD. OF SCIS., NUTRITION DURING LACTATION 30 (1991).

promoting breastfeeding in recent years. The Department of Health and Human Services repeatedly promotes breastfeeding as “the normal and preferred method of feeding infants and young children”<sup>15</sup> and rich with bonding and developmental benefits;<sup>16</sup> some argue that even the United States Supreme Court’s recent jurisprudence glorifies milk as “nature’s perfect food.”<sup>17</sup> This nudging towards breast milk has become so pronounced that more recent policy statements from the AAP Committee on Breastfeeding omit language that appeared in the 1997 statement stating that breastfeeding should be a “mother’s decision.”<sup>18</sup>

Alongside the promotion of breast milk as the ideal nutrition for infants by governmental and pediatric groups, modern cultural factors have contributed to the boom in breastmilk demand. An increasing number of parents cannot or struggle to express breast milk, such as adoptive parents, parents through surrogacy, or biological parents separated from their infants at birth, and therefore must seek it on the market.<sup>19</sup> Parents of premature infants often struggle to express milk due to the extensive hospital procedures and routines required for premature babies that make it difficult for mothers to establish a milk supply and teach babies how to latch.<sup>20</sup> Premature births, or births before thirty-seven weeks of gestation, have consistently increased in the United States, with one in every ten infants now born prematurely.<sup>21</sup> During the early stages of the COVID-19 pandemic, some COVID-positive mothers were also separated from their babies immediately after birth at the recommendation of the AAP due to concerns about virus transmission.<sup>22</sup> While the AAP subsequently reversed their recommendation to separate babies from COVID-

---

15. See Fentiman, *supra* note 10, at 41 (quoting U.S. BREASTFEEDING COMM., U.S. DEP’T OF HEALTH & HUM. SERV., BREASTFEEDING IN THE UNITED STATES: A NATIONAL AGENDA 11 (2001)).

16. *Id.* at 39–40.

17. Mathilde Cohen, *Of Milk and the Constitution*, 40 HARV. J.L. & GENDER 115, 115 (2017).

18. See Fentiman, *supra* note 10, at 39.

19. See Nicholas Zill, *An Update on the Changing Face of Adoption*, INST. FOR FAM. STUD. (Nov. 24, 2020), <https://ifstudies.org/blog/an-update-on-the-changing-face-of-adoption>; Judith A. Lothian, *The Birth of a Breastfeeding Baby and Mother*, J. PERINATAL EDUC., Winter 2005, at 42, 43–44.

20. See Teresa Pitman, *Breastfeeding Premature Babies*, LA LECHE LEAGUE INT’L (Nov. 7, 2018), <https://www.llli.org/breastfeeding-premature-babies/>.

21. See *Preterm Birth*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pretermbirth.htm> (last visited Dec. 15, 2021); see also Tyler J. VanderWeele et al., *Rising Preterm Birth Rates, 1989-2004: Changing Demographics or Changing Obstetric Practice?*, 74 SOC. SCI. & MED. 196, 196 (2012).

22. See Anna Medaris, *Early in the Pandemic, New Moms with COVID-19 Were Separated from Their Babies at Birth—and Postpartum Depression Rates Soared*, INSIDER (May 3, 2021, 8:25 AM), <https://www.insider.com/postpartum-depression-rates-high-in-covid-moms-separated-from-newborns-2021-4>.

positive mothers at birth, mothers affected by this policy were unable to help babies latch and establish a regular milk supply.<sup>23</sup>

Even parents who do not physically struggle to lactate experience barriers to breastfeeding that have contributed to the rising demand for breast milk. Taking certain medications may serve as a barrier to breastfeeding because any substance consumed by a mother can pass through breast milk to a nursing child, such as the antidepressant medications prescribed to women suffering from postpartum depression.<sup>24</sup> An estimated half of all breastfeeding mothers use prescription medication, yet these mothers often receive little guidance about how a prescription might affect their breast milk or their infant.<sup>25</sup> A study in 2017 revealed that most drug labels do not include information about medication use while breastfeeding, finding that only 15% of the drugs and biologics approved by the FDA between 2015 and 2017 included information on breastfeeding.<sup>26</sup> As a result, some women “forgo breastfeeding completely when taking medications” out of an abundance of caution for their infant’s health.<sup>27</sup>

Despite progress in protections for pregnant and breastfeeding mothers in the United States workforce, many women experience trouble expressing breast milk in the workplace. New mothers who comprise part of this workforce are only guaranteed twelve weeks of unpaid leave annually under the Family and Medical Leave Act of 1993 (FMLA) if they work for an employer with more than fifty employees,<sup>28</sup> even though the World Health Organization (WHO) recommends a sixteen-week minimum of maternal leave to ensure the health of mothers and newborns.<sup>29</sup> Women who return to work during the first twelve weeks after giving birth are less likely to meet their breastfeeding goals.<sup>30</sup> The limit on guaranteed leave due to employer size also means that over 40% of

---

23. See *id.*; see also *FAQs: Management of Infants Born to Mothers with Suspected or Confirmed COVID-19*, AM. ACAD. PEDIATRICS, <https://www.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/faqs-management-of-infants-born-to-covid-19-mothers/> (July 20, 2022).

24. See *Breastfeeding: Prescription Medication Use*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/vaccinations-medications-drugs/prescription-medication-use.html> (Nov. 30, 2020); Natasha K. Sriraman et al., *ABM Clinical Protocol #18: Use of Antidepressants in Breastfeeding Mothers*, 10 *BREASTFEEDING MED.* 290, 292 (2015) (“All antidepressants are present in human milk to some extent.”).

25. See Teresa Carr, *Is It Safe to Take that Medication While Breastfeeding?*, N.Y. TIMES (Apr. 20, 2020), <https://www.nytimes.com/2020/04/15/parenting/baby/breastfeeding-medications.html>.

26. See *id.*

27. See *id.*

28. See *Family and Medical Leave (FMLA)*, U.S. DEP’T. OF LAB., <https://www.dol.gov/general/topic/benefits-leave/fmla> (last visited Dec. 15, 2021).

29. See Anjel Vahratian & Timothy R.B. Johnson, *Maternity Leave Benefits in the United States: Today’s Economic Climate Underlines Deficiencies*, 36 *BIRTH* 177, 177 (2009).

30. See Eric A. Lauer et al., *Identifying Barriers and Supports to Breastfeeding in the Workplace Experienced by Mothers in the New Hampshire Special Supplemental Nutrition Program for Women, Infants, and Children Utilizing the Total Worker Health Framework*, 16 *INT’L J. ENV’T RSCH. & PUB. HEALTH* 529, 530 (2019) (“Women who return to full-time employment six to twelve weeks postpartum were more than 50% less likely to meet their breastfeeding intentions . . .”).

United States workers are ineligible for unpaid leave under the FMLA even if they can afford to take it.<sup>31</sup>

Women also experience social difficulties while breastfeeding or expressing milk in public. Mothers are repeatedly told to leave venues such as pools, restaurants, stores, and churches merely because they breastfeed their children.<sup>32</sup> Against this backdrop, 40% of mothers surveyed in a 2012 study indicated that their greatest concern about breastfeeding was the possibility of breastfeeding in public.<sup>33</sup> In particular, mothers in the American Midwest and South indicate the most discomfort with the concept of breastfeeding in public.<sup>34</sup>

Demand for breast milk has also grown as market participants seek the product for nontraditional purposes. Bodybuilders have recently used breast milk as a dietary supplement in the belief that breast milk helps build, grow, and restore muscle.<sup>35</sup> Other adults seek breast milk to fight illness, claiming that drinking breast milk carries benefits ranging from easing the effects of chemotherapy to improving digestion.<sup>36</sup> During the COVID-19 pandemic, adults sought breast milk from mothers with COVID-19 antibodies for personal consumption in the hope of achieving immunity against the virus.<sup>37</sup>

In the same vein, the COVID-19 pandemic spurred milk sharing as many families desired vaccinated mothers' milk in the hope that antibodies in the breast milk provide some immunity to young children under age twelve, who

---

31. See *Paid Leave*, NAT'L P'SHIP FOR WOMEN & FAMS., <https://www.nationalpartnership.org/our-work/economic-justice/paid-leave.html> (last visited Dec. 16, 2021).

32. See Meagan Francis, Opinion, *A Breastfeeding Woman Was Told to Leave a Texas Pool. This Public Shaming of Mothers Has to Stop.*, NBC NEWS (June 13, 2019, 9:10 AM), <https://www.nbcnews.com/think/opinion/texas-pool-told-breastfeeding-woman-leave-public-shaming-mothers-has-ncna1017146>; Jared Leone, *Breastfeeding Woman Asked to Leave Chick-Fil-A Restaurant*, ATLANTA J.-CONST. (Jan. 14, 2018), <https://www.ajc.com/news/national/breastfeeding-woman-asked-leave-chick-fil-restaurant/hWZsrE1rp8qzqgZXFOMceN/>; Michael Alison Chandler & Laura Vozzella, *'My Rights as a Mom Have Been Violated': Mother Is Asked to Find Private Room While Breast-Feeding in Church*, WASH. POST (Apr. 26, 2017), [https://www.washingtonpost.com/local/virginia-politics/this-breastfeeding-mom-caused-a-stir-in-church/2017/04/26/ad7ac84-2a8d-11e7-a616-d7c8a68c1a66\\_story.html](https://www.washingtonpost.com/local/virginia-politics/this-breastfeeding-mom-caused-a-stir-in-church/2017/04/26/ad7ac84-2a8d-11e7-a616-d7c8a68c1a66_story.html); see also Mandy Velez, *Breastfeeding Group Holds Nurse-In at Walmart After Employees Shame Nursing Customer*, HUFFPOST, [https://www.huffpost.com/entry/breastfeeding-group-plans-walmart-nurse-in\\_n\\_5570535](https://www.huffpost.com/entry/breastfeeding-group-plans-walmart-nurse-in_n_5570535) (Dec. 6, 2017).

33. See *Lansinoh Study Reveals Nearly Half of U.S. Moms Uncomfortable Breastfeeding in Public*, BUS. WIRE (Jan. 10, 2013, 5:49 PM), <https://www.businesswire.com/news/home/20130110006362/en/Lansinoh-Study-Reveals-Nearly-Half-of-U.S.-Moms-Uncomfortable-Breastfeeding-in-Public>.

34. *Id.*

35. See Liz Neporent, *Why Bodybuilders Are Pounding Down Breast Milk*, ABC NEWS (Feb. 17, 2015, 12:03 PM), <https://abcnews.go.com/Health/body-builders-pounding-breast-milk/story?id=29020910>.

36. See Barbara Feder Ostrov, *Some Ill Adults Use Breast Milk to Fight Disease*, SEATTLE TIMES (Dec. 30, 2004, 12:00 AM), <https://www.seattletimes.com/nation-world/some-ill-adults-use-breast-milk-to-fight-disease/>.

37. See Lauren Vinopal, *The Men Who Would Rather Chug Mystery Breast Milk than Get the COVID Vaccine*, INSIDEHOOK (Apr. 22, 2021, 7:42 AM), <https://www.insidehook.com/article/health-and-fitness/men-breast-milk-covid-antibodies>.

were not eligible for COVID-19 vaccines until October 2021.<sup>38</sup> Children under the age of five remained ineligible for COVID-19 vaccines until June 2022, when the FDA authorized emergency use of the vaccine for children ages six months to five years old.<sup>39</sup> Furthermore, supply chain issues stemming from the COVID-19 pandemic—exacerbated by the shutdown of Abbott Nutrition’s Sturgis, Michigan infant-formula production facility due to *Cronobacter sakazakii* bacteria contamination—led many to seek breast milk when they could not obtain formula.<sup>40</sup>

## B. The Supply

Today, breast milk can be obtained in the United States through both formal and informal markets. For purposes of this Note, a “formal” market is a market that is subject to screening and quality standards imposed by some intermediary. An “informal” market is a market that is not subject to mandatory oversight or screening from an entity beyond the transacting parties.

### 1. Formal Markets

Breastmilk seekers who must turn to the marketplace for the “liquid gold” can sometimes obtain it through the formal channel of milk banks, which collect, screen, process, pasteurize, store, and distribute human milk donated by nursing mothers.<sup>41</sup> The first human milk bank opened in Vienna, Austria in 1909, and the first milk bank in the United States was established shortly

---

38. See Heather Murphy, *Vaccinated Mothers Are Trying to Give Babies Antibodies via Breast Milk*, N.Y. TIMES, <https://www.nytimes.com/2021/04/08/health/covid-vaccine-breast-milk.html> (July 21, 2021); Kira Vermont, *Got Milk COVID-19 Antibodies?*, TORONTO STAR, <https://www.thestar.com/business/mars/2021/06/09/got-milk-covid-19-antibodies.html> (June 11, 2021); *FDA Authorizes Pfizer-BioNTech COVID-19 Vaccine for Emergency Use in Children 5 Through 11 Years of Age*, U.S. FOOD & DRUG ADMIN. (Oct. 29, 2021), <https://www.fda.gov/news-events/press-announcements/fda-authorizes-pfizer-biontech-covid-19-vaccine-emergency-use-children-5-through-11-years-age>.

39. *Coronavirus (COVID-19) Update: FDA Authorizes Moderna and Pfizer-BioNTech COVID-19 Vaccines for Children Down to 6 Months of Age*, U.S. FOOD & DRUG ADMIN. (June 17, 2022), <https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-authorizes-moderna-and-pfizer-biontech-covid-19-vaccines-children#:~:text=For%20the%20Pfizer%2DBioNTech%20COVID,years%20of%20age%20and%20older.>

40. *Cronobacter and Powdered Infant Formula Investigation*, CTNS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/cronobacter/outbreaks/infant-formula.html#:~:text=Since%20then%2C%20CDC%20has%20identified,facility%20before%20they%20got%20sick.> (May 24, 2022); *Information for Families During the Formula Shortage*, U.S. DEPT OF HEALTH & HUM. SERV., <https://www.hhs.gov/formula/index.html> (last visited July 9, 2022).

41. See Nadja Haiden & Ekhard E. Ziegler, *Human Milk Banking*, 69 ANNALS NUTRITION & METABOLISM 8, 10 (2016).

thereafter in Boston in 1910,<sup>42</sup> which paid lactating mothers to nurse infants.<sup>43</sup> Today, the United States is home to twenty-eight nonprofit milk banks accredited by the Human Milk Banking Association of North America (HMBANA) that screen, collect, and allocate milk,<sup>44</sup> and a few for-profit milk banks, such as Prolacta Bioscience, that primarily sell breast milk to newborn intensive care units in hospitals.<sup>45</sup>

The formal nonprofit banks that sell directly to consumers operate under the “triple screen” process recommended by the HMBANA for donors that involves a personal interview about lifestyle and medication, a medical provider statement about fitness of the mother to donate milk while guaranteeing adequate nutrition of the mother’s own children, and blood testing to check for any harmful pathogens.<sup>46</sup> Donors are unpaid women who produce excess milk.<sup>47</sup> During the initial screening stage, women are excluded if they engage in risky lifestyle choices such as using alcohol or tobacco, or have a history of certain medical issues such as HIV, ongoing chemotherapy or radiation, or chronic infections.<sup>48</sup> During the second stage, if a doctor does not indicate that a mother can guarantee adequate nutrition to her own child and simultaneously donate breast milk, the potential donor is excluded.<sup>49</sup> During the third stage, women are also tested for HIV-1, HIV-2, adult T-cell leukemia virus, syphilis, and in some cases, a broader array of diseases like tuberculosis.<sup>50</sup>

---

42. See *id.*; see also Guido E. Moro, *History of Milk Banking: From Origin to Present Time*, 13 BREASTFEEDING MED. S-16, S-16 (2018) (explaining that the first milk bank in the United States opened in 1910). One survey on milk banking in North America says the first milk bank in the United States opened as late as 1919. See Martha J. Paynter & Kathryn Hayward, *Medicine, Body Fluid and Food: The Regulation of Human Donor Milk in Canada*, HEALTHCARE POLY., Feb. 2018, at 20, 21. However, most sources claim the date is around either 1910 or 1911. See, e.g., *Our History*, MOTHERS’ MILK BANK, <https://milkbank.rmchildren.org/our-history/> (last visited Sept. 30, 2022) (“1910 – The first milk bank in the United States opened in Boston, MA . . .”); Fentiman, *supra* note 10, at 66 (“The first milk bank was established in 1911 . . .”); Waldeck, *supra* note 5, at 369 (“The first bank was founded in Boston in 1911 . . .”).

43. See Waldeck, *supra* note 5, at 369.

44. HMBANA currently has thirty-one member milk banks. See *Find a Milk Bank*, HUM. MILK BANKING ASS’N OF N. AM., <https://www.hmbana.org/find-a-milk-bank/overview.html> (last visited Dec. 16, 2021). Three of those banks are located in Canada. See *id.*

45. See *Human Milk Products*, PROLACTA BIOSCIENCE, <https://www.prolacta.com/en/products/> (last visited Dec. 16, 2021). Until it filed for bankruptcy in March 2021, Medolac Laboratories was another for-profit milk bank engaged in similar business to Prolacta. See Sushma Subramanian, *She Pioneered the Sale of Breast Milk, Then Lost Everything*, WASH. POST (May 13, 2022, 1:06 PM), <https://www.washingtonpost.com/magazine/2022/05/13/price-of-selling-breast-milk/>; see also Voluntary Petition for Non-Individuals Filing for Bankruptcy, *In re Medolac Laby’s.*, No. 21-11271 (Bankr. D. Nev. Mar. 17, 2021) [hereinafter *Medolac Bankruptcy Petition*].

46. See KIMBERLY UPDEGROVE, HUM. MILK BANKING ASS’N OF N. AM., HMBANA DONOR SCREENING STANDARDS: ASSURING SAFETY FOR THE VULNERABLE 14 (2019), [https://www.hmbana.org/file\\_download/inline/1807abad-e04c-4790-b6b0-606cb06631d4](https://www.hmbana.org/file_download/inline/1807abad-e04c-4790-b6b0-606cb06631d4).

47. See Waldeck, *supra* note 5, at 362, 371–72.

48. See UPDEGROVE, *supra* note 46, at 17–19; see also Waldeck, *supra* note 5, at 370–71.

49. See Waldeck, *supra* note 5, at 371.

50. See *id.*



If a mother passes the screening phases and the nonprofit milk bank accepts her milk, the milk goes through a number of further procedures to control its quality before it passes to purchasing hospitals and families.<sup>51</sup> Donors are given written instructions covering requirements about labeling and freezing milk for storage and transportation.<sup>52</sup> Pasteurization team members at the receiving milk bank move donor milk into glass flasks, then pool and mix the donor milk from three to five mothers in order “to ensure an even macronutrient distribution” as each mother’s breast milk has a unique composition.<sup>53</sup> The pooled milk is then pasteurized using the Holder Method, which involves heating the milk to 145 degrees for half an hour followed by rapid cooling to eliminate potentially harmful bacteria.<sup>54</sup> After additional checks for bacterial growth, the milk is frozen and stored.<sup>55</sup> When the donor milk is prepared for shipment to hospitals and families, it is once again checked for bacteria growth and carefully packed to remain frozen in transit.<sup>56</sup> This nonprofit banked milk typically costs four to five dollars per ounce, a charge attributed to the handling costs.<sup>57</sup>

In the face of overwhelming demand for the breast milk, the HMBANA devised a priority system of milk dispensation for its member banks. Banked milk is first dispensed to premature and sick infants.<sup>58</sup> If the milk stores allow, banks will then channel milk by prescription toward families of adopted babies and to those whose mother has died or fallen ill.<sup>59</sup> After these populations are served, milk banks may accept prescriptions from healthy infants whose mother’s milk supply is insufficient to disperse any remaining milk supply.<sup>60</sup> Using this priority system, the HMBANA’s most current statistics on milk

---

51. See *Our Work: Milk Processing and Safety*, HUM. MILK BANKING ASS’N OF N. AM., <https://www.hmbana.org/about-us/our-work/milk-processing-safety.html> (last visited Sept. 3, 2022) [hereinafter *Our Work: Milk Processing and Safety*].

52. See HUM. MILK BANKING ASS’N OF N. AM. GUIDELINES COMM., HMBANA STANDARDS FOR DONOR HUMAN MILK BANKING: AN OVERVIEW 8 (2020), [https://www.hmbana.org/file\\_download/inline/95a0362a-c9f4-4f15-b9ab-cf8cf7b7b866](https://www.hmbana.org/file_download/inline/95a0362a-c9f4-4f15-b9ab-cf8cf7b7b866).

53. See *id.* at 13–14; *Our Work: Milk Processing and Safety*, *supra* note 51.

54. See HUM. MILK BANKING ASS’N OF N. AM. GUIDELINES COMM., *supra* note 52, at 14; see also Anna Petherick, *Holder Pasteurization Holds Up Well Against Most Germs*, INT’L MILK GENOMIC CONSORTIUM (Jul. 2017), <https://milkgenomics.org/article/holder-pasteurization-holds-well-germs/>.

55. See *Our Work: Milk Processing and Safety*, *supra* note 51.

56. *Id.*

57. See Sarah Zhang, *A Bold and Controversial Idea for Making Breast Milk*, ATLANTIC (Feb. 27, 2020), <https://www.theatlantic.com/science/archive/2020/02/lab-grown-breast-milk/606955/>.

58. See *Who Is Eligible to Receive Milk?*, MOTHERS’ MILK BANK AT AUSTIN, <https://milkbank.org/milk-for-families/#:~:text=For%20premature%20or%20sick%20babies,why%20human%20milk%20is%20needed> (last visited Dec. 16, 2021).

59. See Waldeck, *supra* note 5, at 362.

60. See *id.*

distribution show that HMBANA banks dispensed about 9.2 million ounces of breast milk in a calendar year from the milk of about 13,000 donors.<sup>61</sup>

A number of for-profit and startup companies have also attempted to innovate in the breastmilk market to help meet the demand. Although for-profit milk banking companies are not accredited by the HMBANA, they operate under standards similar to those implemented in HMBANA banks before distributing milk to customers.<sup>62</sup> Two of the largest for-profit milk banks that produce a fortified milk product for premature, hospitalized infants, Prolacta Bioscience and Medolac Laboratories (Medolac declared bankruptcy in March 2021), each screen the medical history and blood samples of potential donors, test donor milk for bacteria and other contaminants, and heat process the milk to kill bacteria.<sup>63</sup> Milk from these for-profit banks is costly for the purchasing hospitals and families. Prolacta produces a fortified milk product that “packs the power of 10 ounces of [breast] milk into a single ounce” of product,<sup>64</sup> which costs about \$180 an ounce,<sup>65</sup> and Medolac’s shelf-stable milk product sold for up to \$5.90 an ounce.<sup>66</sup>

## 2. *Informal Markets*

When milk banks have inadequate supply for non-priority milk seekers or when banked milk proves to be prohibitively expensive, families have turned to informal networks to fill the gap. Informal, peer-to-peer markets for breast milk have flourished over the Internet through existing platforms, such as Facebook, as well as new platforms devoted solely to milk exchanges.<sup>67</sup> Researchers

---

61. *Despite Ongoing COVID-19 Disruptions, Nonprofit Milk Banks Celebrate Growth with 9.2M Ounces Distributed in 2021*, HUM. MILK BANKING ASS’N OF N. AM. (Feb. 15, 2022), <https://www.hmbana.org/news/blog.html/article/2022/02/15/despite-ongoing-covid-19-disruptions-nonprofit-milk-banks-celebrate-growth-with-9-2m-ounces-distributed-in-2021>. In 2019, HMBANA banks dispensed about 7.4 million ounces of breast milk from 12,941 donors. *Donor Human Milk Distribution Increases by Nearly 1 Million Ounces*, HUM. MILK BANKING ASS’N OF N. AM. (Mar. 31, 2020), <https://www.hmbana.org/news/donor-human-milk-increases-by-nearly-1-million-ounces.html>.

62. See *Quality & Safety*, PROLACTA BIOSCIENCE, <https://www.prolacta.com/en/about-us/quality-and-safety/> (last visited Sept. 30, 2022).

63. See *id.*; MOTHERS’ MILK BANK, ROCKY MOUNTAIN CHILD’S HEALTH FOUND., DONOR COMPARISON CHART 2 (2017), [https://rmchildren.org/wp-content/uploads/2015/01/MMB\\_DonorComparisonChart\\_Updated\\_121417\\_v1.pdf](https://rmchildren.org/wp-content/uploads/2015/01/MMB_DonorComparisonChart_Updated_121417_v1.pdf) (describing Medolac’s milk processing procedures). As stated previously, Medolac filed bankruptcy in March 2021. See Medolac Bankruptcy Petition, *supra* note 45.

64. See Judy Dutton, *Liquid Gold: The Booming Market for Human Breast Milk*, WIRED (May 17, 2011, 10:05 PM), <https://www.wired.com/2011/05/ff-milk/>.

65. See Andrew Pollack, *Breast Milk Becomes a Commodity, with Mothers Caught Up in Debate*, N.Y. TIMES (Mar. 20, 2015), <https://www.nytimes.com/2015/03/21/business/breast-milk-products-commercialization.html>.

66. See Carolina Buia, *The Booming Market for Breast Milk*, NEWSWEEK (May 23, 2015, 4:11 PM) <https://www.newsweek.com/booming-market-breast-milk-335151>.

67. Facebook officially bans the sale of bodily fluids through its platform. See *Terms and Policies: Commerce*, META, [https://www.facebook.com/policies\\_center/commerce/](https://www.facebook.com/policies_center/commerce/) (last visited Dec. 16, 2021); see

estimate that “tens of thousands of milk exchanges” take place each year over the Internet.<sup>68</sup>

Facebook groups such as Human Milk 4 Human Babies have grown into global networks of parents who request and donate or sell milk.<sup>69</sup> Other sites devoted solely to facilitating breastmilk transactions develop their own personalities and interfaces, such as Eats on Feets, a hub for “Whole Foods-shopping earth mamas,”<sup>70</sup> or Only the Breast, which features options for sellers to classify their milk based on dietary restrictions like veganism as well as their willingness to sell to non-traditional breastmilk seekers.<sup>71</sup> Unlike the formal milk banks, sellers and their breast milk are not screened unless the parties transact for such screening.<sup>72</sup> They allow recipient families to choose the level of precaution they wish to take and do not reject any potential sellers from posting on the platform on the basis of medical history or lifestyle. Human Milk 4 Human Babies calls this an “informed choice” approach, where recipients can engage in the screening measures that they prefer, such as “do[ing] their own research” or “consult[ing] their medical team.”<sup>73</sup>

Eats on Feets also encourages potential buyers to meet with sellers to discuss lifestyle matters that are not typically screened by milk banks, such as any “philosophic oppositions [to] nuts, dairy [sic], eggs and meat.”<sup>74</sup> Only the Breast provides a page listing precautionary measures that a family receiving breast milk can implement that includes many of the strategies used by formal milk markets, such as blood tests, letters from family doctors certifying donor suitability, and health records, and states that milk “must be pasteurized before use.”<sup>75</sup> The platform makes sure to note that some diseases such as HIV and syphilis can spread through breast milk and encourages milk seekers to “reject breast milk from sellers [or] donors that [they] feel uncomfortable with.”<sup>76</sup> However, as on Human Milk 4 Human Babies and Eats on Feets, screening options are discretionary, not mandatory. The average breastmilk price on a

---

also *Safe Milksharing*, EATS ON FEETS, <https://www.eatsonfeets.org/safeMilksharing/> (last visited Dec. 16, 2021).

68. See Elizabeth Preston, *With the Rise of Informal Breastmilk Sharing, Questions of Safety Linger*, UNDARK (Mar. 12, 2018), <https://undark.org/2018/03/12/breastmilk-sharing-networks-online-safety/>.

69. See Human Milk 4 Human Babies Global Network, FACEBOOK, <https://www.facebook.com/hm4hb> (last visited Sept. 30, 2022).

70. See Dutton, *supra* note 64.

71. *Breast Milk Classifieds*, ONLY THE BREAST, <https://www.onlythebreast.com/> (last visited Dec. 16, 2021).

72. See Human Milk 4 Human Babies Global Network, *supra* note 69.

73. See *id.*

74. See *Safe Milksharing*, *supra* note 67.

75. See *Breast Milk and Donor Screening*, ONLY THE BREAST (emphasis omitted), <https://www.onlythebreast.com/buy-sell-donate-breast-milk/breast-milk-screening/> (last visited Dec. 16, 2021).

76. See *id.*

milk-sharing-specific platform like Only the Breast is about \$1 to \$2.50 per ounce, and some members simply donate their milk to others free of charge.<sup>77</sup>

## II. IMPORTANCE OF INFORMAL MARKETS

Many regard informal milk markets with great discomfort, describing them as “shady.”<sup>78</sup> However, supply and demand considerations suggest that informal markets for breast milk are an enduring feature of the market for breast milk, so they require thoughtful treatment from policymakers.

### A. Current Legal Status of Informal and Formal For-Profit Markets

#### 1. Federal and State Governments

The rise of informal milk markets has not gone unnoticed by government organizations. In November 2010, the FDA released a statement regarding peer-to-peer breastmilk exchanges “recommend[ing] against” feeding an infant “breast milk acquired directly from individuals or through the Internet.”<sup>79</sup> The FDA instead encouraged milk seekers to patronize formal human-milk banks that screen milk donors.<sup>80</sup> The FDA has regulatory authority over foods and some human tissues in the United States and currently sets standards for milk products and milk as diverse as cow milk, sheep milk, camel milk, llama milk, yak milk, moose milk, and even reindeer milk.<sup>81</sup> However, the agency has taken no meaningful action to set standards for human-milk markets. In April 2022, House Appropriations Committee Chair Rosa DeLauro and Representative Kim Schrier introduced the Donor Milk Safety Act in the 117th United States Congress seeking to require the FDA to set minimum safety and quality standards for donor breast milk.<sup>82</sup> It awaits action from the House Committee on Energy and Commerce at the time of publishing.<sup>83</sup> Additionally, the Centers for Disease Control and Prevention (CDC) encourages milk seekers to

---

77. See Dutton, *supra* note 64.

78. See David Anderson & Shira Polan, *There's a Shady Market for Breast Milk in the US Where Parents Risk Buying Contaminated Milk*, INSIDER (Nov. 19, 2018, 8:00 AM), <https://www.businessinsider.com/breast-milk-black-market-for-sale-baby-2018-11>.

79. See *Use of Donor Human Milk*, U.S. FOOD & DRUG ADMIN. (Mar. 22, 2018), <https://www.fda.gov/science-research/pediatrics/use-donor-human-milk>.

80. See *id.*

81. See *Tissue and Tissue Product Questions and Answers*, U.S. FOOD & DRUG ADMIN. (May 7, 2019), <https://www.fda.gov/vaccines-blood-biologics/tissue-tissue-products/tissue-and-tissue-product-questions-and-answers>; *CBER Product Jurisdiction*, U.S. FOOD & DRUG ADMIN. (Mar. 26, 2018), <https://www.fda.gov/about-fda/center-biologics-evaluation-and-research-cber/cber-product-jurisdiction>. See generally U.S. FOOD & DRUG ADMIN., GRADE “A” PASTEURIZED MILK ORDINANCE (2019), <https://www.fda.gov/media/140394/download>.

82. Donor Milk Safety Act, H.R. 7358, 117th Cong. (2022).

83. See *id.*

patronize formal, nonprofit milk banks, citing concerns over the potential for milk contamination through informal milk sharing.<sup>84</sup>

Likewise, fractured regulation over human milk has occurred at the state level. Only ten states—California, New York, Maryland, Pennsylvania, Arkansas, Washington, Illinois, Kansas, New Jersey, and Texas (the home of HMBANA’s headquarters)—have set standards for formal milk banks, and no state has set standards for individual sellers.<sup>85</sup> Additionally, the Michigan, Florida, Connecticut, and Virginia state legislatures have considered bills to set standards for the collection and distribution of breast milk by formal nonprofit and for-profit groups but not “mother-to-mother milk sharing groups.”<sup>86</sup>

Complicating this area is the fact that no consensus exists as to the proper label for breast milk, which creates significant consequences as to whether an insurer or an individual will pay for medically necessary breast milk. While the FDA and most states treat breast milk like a food, three states—New York, Maryland, and California—classify breast milk as a tissue.<sup>87</sup> Furthermore, at least thirteen states—California, Connecticut, New York, Missouri, Kansas, Texas, Utah, Florida, Washington, Illinois, Connecticut, Ohio, and New Jersey—and the District of Columbia provide for coverage of donor human breast milk under their state Medicaid programs.<sup>88</sup> The Maine state legislature considered a bill in 2022 to bring medically necessary donor breast milk under its state Medicaid program that was signed by the governor and goes in effect January 1, 2023.<sup>89</sup> Conversely, the Oklahoma, South Carolina, and Virginia legislatures recently considered bills introduced in early 2022 that would have provided Medicaid coverage of medically necessary donor human milk, but

---

84. See *Breastfeeding: Frequently Asked Questions (FAQs)*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/breastfeeding/faq/index.htm#safe> (Aug. 4, 2022).

85. See David Stephanie Dawson, *Legal Commentary on the Internet Sale of Human Milk*, 126 PUB. HEALTH REPS. 165, 166 (2011) (describing standards in California, New York, and Texas); Buia, *supra* note 66 (providing information about Maryland’s treatment of milk sharing); 35 PA. STAT. AND CONS. STAT. ANN. § 5016 (West 2012); ARK. CODE ANN. § 20-7-140 (1987); WASH. REV. CODE § 43.70.645 (2022); 5 ILL. COMP. STAT. ANN. 375/6.16 (West 2013) (adopting the HMBANA’s standards); KAN. STAT. ANN. § 39-7,121g(a)(5) (2019); N.J. STAT. ANN. § 26:2A-18 (West 2018).

86. See H.R. 4206, 98th Leg., Reg. Sess. (Mich. 2015); *NJ Senate Advances Milk Bank Standards*, APP. (Nov. 3, 2016, 7:45 PM), <https://www.app.com/story/news/politics/new-jersey/2016/11/03/nj-senate-advances-milk-bank-standards/93265022/>; S. 240, 2021 Leg., Reg. Sess. (Fla. 2021); H.R. 5369, 2020 Gen. Assemb., Reg. Sess. (Conn. 2020); S. 344, 2022 Leg., Reg. Sess. (Va. 2022).

87. See Olivia Campbell, *When Babies Need Donated Breast Milk, Should States Pay?*, SCI. AM. (Oct. 4, 2016), <https://www.scientificamerican.com/article/when-babies-need-donated-breast-milk-should-states-pay/>.

88. See *id.* (discussing coverage in California, Missouri, Kansas, Texas, Utah, and the District of Columbia); N.Y. SOC. SERV. LAW § 365-a (McKinney 2021); FLA. STAT. § 409.906 (2022); WASH. REV. CODE § 48.43.715 (2022); 5 ILL. COMP. STAT. 375/6.16 (West 2013); Act of June 18, 2019, No. 19-48, 2019 Conn. Acts 270; KAN. STAT. ANN. § 39-7,121g (2019); MO. REV. STAT. § 208.141 (2017); OHIO ADMIN. CODE § 5160-10-26 (2021); N.J. STAT. ANN. § 26:2J-4.42 (West 2018).

89. See Act effective Jan. 1, 2023, ch. 708, 2022 Me. Laws 1993–94.

each died in committee.<sup>90</sup> At the time of publishing, the Massachusetts and Pennsylvania state legislatures are set to consider legislation that seeks to bring donor breast milk within their state Medicaid programs.<sup>91</sup>

Despite a general lack of consensus regarding breast milk, some state-level officials have expressed distaste for individual sellers and desire to curb their activity. In Arkansas, the chief epidemiologist for the state department of health indicated that breast milk “is not something that can be sold” by an individual and advised a fellow staff member through an email that a Facebook milk exchange in the state of Arkansas needed to cease.<sup>92</sup> Despite this exchange, no action was taken against the Facebook group. In the Tennessee state legislature, a bill was introduced in 2010 to make the sale of breast milk through informal channels a misdemeanor.<sup>93</sup> The bill declared that “a market for unscreened breast milk has developed, potentially exposing purchasers or their children to health risks,” and sought to make it “an offense to sell, barter or trade for . . . human breast milk,” a violation of which would be “a Class C misdemeanor.”<sup>94</sup> The bill died in committee<sup>95</sup> but nevertheless evidences a strong negative sentiment towards informal milk markets.

## 2. *Alabama*

Currently, Alabama has a single state law related to breast milk and breastfeeding. Enacted in 2006, Section 22-1-13 of the Code of Alabama provides that “[a] mother may breastfeed her child in any location, public or private, where the mother is otherwise authorized to be present.”<sup>96</sup> Alabama, along with North Carolina, is one of only two states with just a single law outlining breastfeeding and breastmilk protections.<sup>97</sup> Further, Alabama’s law arguably offers the slimmest protections in the entire country for breastfeeding mothers and breast milk, as North Carolina’s statute further clarifies that protected rights to breastfeed in public or private locations are not in violation of indecent exposure laws.<sup>98</sup>

---

90. S. 1556, 58th Leg., Reg. Sess. (Okla. 2022); H.R. 3749, 124th Gen. Assemb., Reg. Sess. (S.C. 2022); Va. S. 344.

91. *See* S. 717, 192nd Gen. Court, Reg. Sess. (Mass. 2022); S. 1202, 2022 Leg., Reg. Sess. (Pa. 2022).

92. Ampezzan, *supra* note 1.

93. H.R. 3704, 106th Gen. Assemb., Reg. Sess. (Tenn. 2010).

94. *Id.*

95. *H.B. 3704, TENN. GEN. ASSEMBLY*, <https://wapp.capitol.tn.gov/apps/Billinfo/default.aspx?BillNumber=HB3704&ga=106> (last visited Sept. 30, 2022).

96. ALA. CODE § 22-1-13 (1975).

97. *See Breastfeeding State Laws*, NAT’L CONF. OF STATE LEGISLATURES (Aug. 26, 2021), <https://www.ncsl.org/research/health/breastfeeding-state-laws.aspx>.

98. *See id.*

The Alabama state legislature considered various bills related to breastfeeding in recent years that have not come to fruition. State Senator Thomas Whatley introduced a bill before the senate on February 2, 2021, that would “require employers to make reasonable efforts to provide breastfeeding employees with a time and place to express milk in private,” but the bill died in committee.<sup>99</sup> Likewise, in February 2021 State Representative Neil Rafferty introduced the Pregnant Workers Fairness Act calling for employers to provide reasonable accommodations for applicants or employees with “the need to express breast milk,” but it also died in committee.<sup>100</sup> Senator Rafferty reintroduced the Act in the 2022 legislative session on January 11, 2022, where it died after referral to the House Judiciary Committee.<sup>101</sup>

Currently, Alabama has no standards for the procurement, processing, distribution, use, or reimbursement of human milk in a formal or informal setting, nor has it considered any legislation to that effect at the time of publishing,<sup>102</sup> despite the fact that Birmingham, Alabama, is home to one of the United States’ twenty-eight HMBANA banks.<sup>103</sup> The Mother’s Milk Bank of Alabama opened in 2015<sup>104</sup> and has nine “depot” locations across the state for collecting milk from donors.<sup>105</sup>

### B. *The Future of Informal and Formal For-Profit Markets*

Supply and demand considerations suggest that for-profit informal and formal milk exchanges are necessary and enduring features of the milk market, and efficiency considerations suggest that informal milk exchanges provide a solution for some milk seekers who are failed by nonprofit and for-profit milk banks. According to the Environmental Protection Agency (EPA), the

---

99. S. 100, 2021 Leg., Reg. Sess. (Ala. 2021); *Bills – Search All Sessions*, THE ALA. LEGISLATURE, <https://alison.legislature.state.al.us/bill-search?tab=3> (search “sb100”; choose the bill from the year “2021”) (last visited Oct. 1, 2022).

100. H.R. 352, 2021 Leg., Reg. Sess. (Ala. 2021); *Bills – Search All Sessions*, THE ALA. LEGISLATURE, <https://alison.legislature.state.al.us/bill-search?tab=3> (search “hb352”; choose the bill from the year “2021”) (last visited Oct. 1, 2022).

101. H.R. 1, 2022 Leg., Reg. Sess. (Ala. 2022); *Bills – Search All Sessions*, THE ALA. LEGISLATURE, <https://alison.legislature.state.al.us/bill-search?tab=3> (search “hb1”; choose the bill from the year “2022”) (last visited Oct. 1, 2022).

102. See *Breastfeeding State Laws*, *supra* note 97.

103. See *Find a Milk Bank*, *supra* note 44.

104. Malia Wollen, *How to Donate Breast Milk*, N.Y. TIMES MAG. (Feb. 16, 2021), <https://www.nytimes.com/2021/02/16/magazine/how-to-donate-breast-milk.html>.

105. *Mother’s Milk Bank of Alabama “Milk Depot” Locations*, ALA. BREASTFEEDING COMM., <http://alabamabreastfeeding.org/mothers-milk-bank-of-alabama-milk-depot-locations/> (last visited Aug. 10, 2022).

recommended average breastmilk intake for an infant varies as they grow, seen in the table below.<sup>106</sup>

<b>Recommended Breastmilk Intake in an Infant's First Year (for Exclusively Breastfed Infants)</b>	
<b>Age Group</b>	<b>Average Recommended Daily Breastmilk Intake (mL/Day)</b>
Birth to <1 month	510
1 to <3 months	690
3 to <6 months	770
6 to <12 months	620

Based on these recommendations, an infant who consumes the recommended average volume of breast milk for their first year of life consumes about 240,902.64 mL of breast milk.<sup>107</sup> Converted to the fluid ounces, which are typically used to measure breastmilk volume in the United States marketplace, this means that a healthy infant needs around 8,145.90 ounces of breast milk in their first year of life.<sup>108</sup>

As discussed in Part I.B.1, the most recent HMBANA statistics show that the HMBANA nonprofit milk bank network in the United States can provide up to 9.2 million ounces of breast milk in a calendar year.<sup>109</sup> With such a store, if full-term, healthy babies were the sole recipients of banked milk, only about 1,129 babies would receive a year of adequate nourishment from nonprofit bank supplies in the United States (9.2 million ounces ÷ 8,145.90 ounces = ~1,129). This suggests that the current formal nonprofit channels championed by many academics and agencies are woefully inadequate for meeting the

106. At the time of this draft, the most recent Exposure Factors Handbook released by the EPA is from 2011. *See* U.S. ENV'T PROT. AGENCY, EPA/600/R-090/052F, EXPOSURE FACTORS HANDBOOK: 2011 EDITION 15-3 (2011).

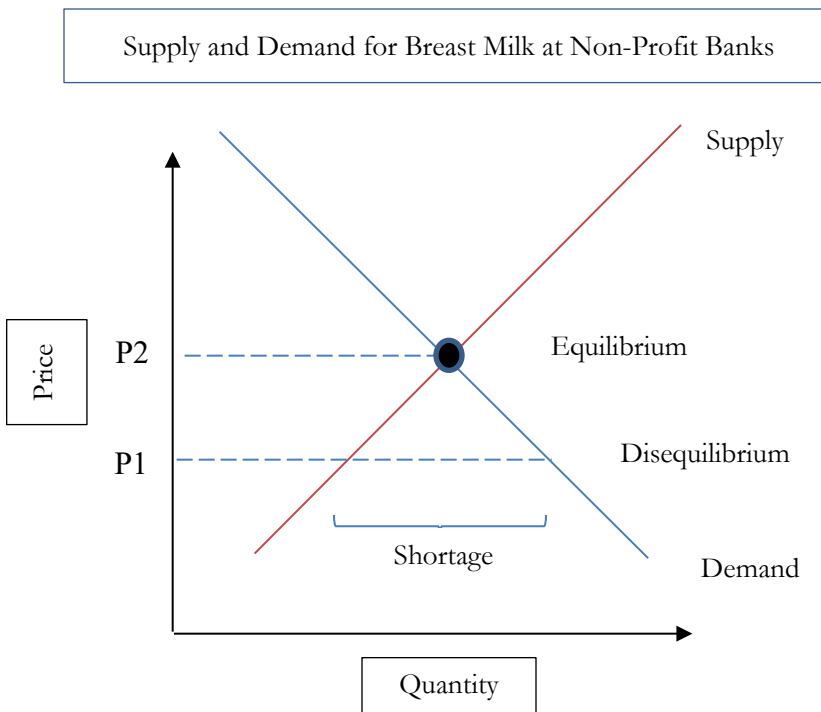
107. If a month has an average of 30.417 days (365 days ÷ 12 months), an infant will consume about 15,512.67 mL of milk from birth to one month of life (510 mL • 30.417 days), 41,975.46 mL of milk from one month to three months of life (690 mL • 60.834 days), 70,263.27 mL of milk from three months to six months of life (770 mL • 91.251 days), and 113,151.24 mL of milk from six months to twelve months of life (620 mL • 182.502 days).

108. 240,902.64 mL • 1 fluid ounce/29.5735 mL.

109. *Despite Ongoing COVID-19 Disruptions, Nonprofit Milk Banks Celebrate Growth with 9.2M Ounces Distributed in 2021*, *supra* note 61.



demand for human milk,<sup>110</sup> such that the AAP and the HMBANA have declared a “shortage” of donor human milk.<sup>111</sup> Represented below, the gap between the demand for breast milk and the stores available solely through formal nonprofit channels at current pricing is the shortage between the supply curve and the demand curve.



This disequilibrium at nonprofit banks could be solved by raising the current price of the milk, “P1,” to price, “P2,” to ration the demand, illustrated in the chart above. However, HMBANA nonprofit banks commit to the principle of “not charg[ing] for the milk itself” and price banked milk only to recoup processing and screening fees, as discussed in Part I.B.1.<sup>112</sup> Therefore, a shift along the demand curve to reach equilibrium is unlikely to occur at current HMBANA donation levels. Given the shortage at nonprofit banks,

110. “80 million ounces of breast milk a year would be needed to feed [only] all the neonatal babies in the nation . . .” See Isabella Alves, *Breast Milk Shortage Affects Life’s Most Vulnerable Babies*, ASSOCIATED PRESS (Feb. 24, 2018), <https://apnews.com/article/05c5c1271b494568994e446f0658bb19>.

111. See Nikita Sood et al., *Are Physicians Helping with the Donor Human Milk Shortage?: Physicians’ Self-Reported Knowledge of Breast Milk Donation and Practices Recommending*, 146 PEDIATRICS 145, 145 (2020); see also Kimberly Horton Updegrave, *Donor Human Milk Banking: Growth, Challenges, and the Role of HMBANA*, 8 BREASTFEEDING MED. 435, 435 (2013) (noting that “[d]emand outstrips supply” for breast milk).

112. See Naomi Bar-Yam, *Why Is Donor Milk So Expensive?*, INT’L LACTATION CONSULTANT ASS’N (Nov. 8, 2013), <https://lactationmatters.org/2013/11/08/why-is-donor-milk-so-expensive/>.

alternatives to nonprofit banks such as for-profit banks and peer-to-peer networks represent a valuable piece of the market in achieving supply and demand equilibrium.

### C. *Advantages of Informal For-Profit Markets*

Peer-to-peer, informal arrangements carry several unique advantages that also suggest they will remain an enduring feature of the milk market. Informal markets can help achieve efficient precaution levels by allowing parties to self-determine the level of screening they desire for purchased breast milk. Some individuals may desire less rigorous screening standards for purchased human milk, particularly if a buyer purchases milk from a close acquaintance or relative whose lifestyle and medical history is known to the purchaser. For these individuals, mandatory screening standards imposed by a nonprofit or for-profit milk bank might prove to be inconvenient, cumbersome, and unnecessary, especially for busy, exhausted new parents. Instead, parties can agree to the desired level of less-rigorous screening for the exchanged milk to reach Pareto efficiency in a peer-to-peer transaction. In contrast, both nonprofit and for-profit milk banks implement standard screening procedures that do not allow for the kind of agreements that can lead to Pareto efficiencies when parties desire less screening and investment in precautionary features.

Alternatively, some milk seekers may want a more rigorous or unique level of screening than a nonprofit or for-profit milk bank can offer. For example, a milk seeker with philosophical objections to milk from mothers who consume meat or dairy may wish to screen a milk seller about certain lifestyle choices. A milk purchaser will likely be unable to screen for this information about a milk donor or seller from a nonprofit or for-profit milk bank that pools milk from many mothers, conceals a mother's identity, and does not inquire about philosophical beliefs. Under a screening system that is self-designed, a parent could glean this information directly in a transaction with a peer for breast milk.

The ability to self-determine additional standards could be particularly useful for individuals of certain faiths. For example, the tradition of milk kinship in the Islamic faith means that any two infants who nurse from the same woman have established "kinship."<sup>113</sup> When milk kinship is established, milk brothers and sisters may not marry one another.<sup>114</sup> At HMBANA nonprofit banks, the mixing and pooling process combines milk from three to five different anonymous donors for each batch of milk disbursed,<sup>115</sup> meaning even only one feeding could create kinship ties between an infant and three to five

---

113. See Sonia Subudhi & Natasha Sriraman, *Islamic Beliefs About Milk Kinship and Donor Human Milk in the United States*, 147 PEDIATRICS 441, 441 (2021).

114. See *id.*

115. See *Our Work: Milk Processing and Safety*, *supra* note 51.

others and preclude the child from a wide swath of potential life partners. Because Muslim families may not view the protective factors of nonprofit and for-profit milk banks, such as a multiplicity of donors, as positive features, a unique screening process tailored to the beliefs of the milk seeker may be more efficient and desirable. For these families, self-imposed screening standards in informal, peer-to-peer transactions can provide a practical solution for obtaining suitable milk.

In addition to enabling parties to adopt the most efficient precaution levels and screening practices, informal channels also represent a valuable opportunity to reduce inefficiencies in the transacting process with formal for-profit banks. For example, one mother named Bonnie Gibson in Tulsa, Oklahoma entered into a milk purchase agreement in the spring of 2020 with Mother's Milk Cooperative,<sup>116</sup> "the supply partner to Medolac,"<sup>117</sup> formerly a large for-profit milk bank. The agreement allegedly guaranteed payment for Gibson's milk; yet after sending 2,000 ounces of breast milk, Gibson claimed that she was not paid.<sup>118</sup> Gibson subsequently filed a lawsuit in Tulsa County District Court for breach of contract, fraud, and punitive damages.<sup>119</sup> When asked about the lawsuit in May 2021, Mother's Milk Cooperative produced a check stub from a payment to Gibson but admitted that the payment to Gibson was "sent late."<sup>120</sup> Gibson's attorney noted that the payment was not delivered until "more than two weeks after Mother's Milk had been served with [the] lawsuit and nearly a year after payment was initially due."<sup>121</sup>

Not all families can afford to spend a year's time and the legal fees Bonnie Gibson required to complete her breastmilk transaction, and the Better Business Bureau (BBB) page for Mother's Milk Cooperative suggests that Gibson's late payment is not an isolated incident.<sup>122</sup> The page is littered with a litany of complaints about the milk purchaser, with most claiming the milk bank failed to issue at least several hundred dollars in compensation for milk.<sup>123</sup> Admittedly, the individuals lodging complaints with the BBB might not have updated the status of their complaints since they were posted. However, at the time of publishing, only four complaints posted on the Mother's Milk

---

116. See Petition at 2, *Gibson v. Mother's Milk Coop.*, No. CJ-2021-680 (Okla. Dist. Ct. Tulsa Cnty. Mar. 5, 2021) (Oklahoma State Courts Network).

117. Peter Daisyme, *Women Empowering Women: Preterm Babies and the Story of Medolac*, ENTREPRENEUR (Jan 31, 2017), <https://www.entrepreneur.com/article/288199>.

118. See Michelle Linn, *Tulsa Woman Suing Company over Payments for Breast Milk*, FOX23 NEWS (May 4, 2021, 11:14 AM), <https://www.fox23.com/news/fox23-investigates/tulsa-woman-suing-company-over-payments-breast-milk/KSFFX473NRAGTN4V7P2KPMOB7Y/>.

119. See *id.*

120. *Id.*

121. *Id.*

122. See *Mother's Milk Cooperative: Complaints*, BETTER BUS. BUREAU, <https://www.bbb.org/us/nv/boulder-city/profile/milk-distributors/mothers-milk-cooperative-1086-90065693/complaints> (last visited Dec. 16, 2021).

123. See *id.*

Cooperative BBB page regarding missing payments were marked as resolved.<sup>124</sup> Informal markets present a real solution for resolving these inefficiencies around payment in the transacting process with for-profit banks.

Informal markets may also be a more attractive option for sellers with privacy concerns about the transacting process. Milk banks collect and retain a vast amount of personal information about donors and sellers, as discussed in Part I.B.1.<sup>125</sup> Concerningly, some individuals have raised allegations that for-profit banks have misused seller DNA.<sup>126</sup> The former director of human relations for Prolacta Biosciences, one of the largest for-profit milk banks in the United States, filed a lawsuit in October 2019 alleging that Prolacta used “milk donors’ DNA for research without their authorization.”<sup>127</sup> Although the case was settled in 2020,<sup>128</sup> it points to the idea that peer-to-peer markets can provide an option for sellers who desire greater control over the selling process and can encourage those who might be hesitant to participate in the market on an intermediary’s terms to join the market as sellers. These unique considerations coupled with current donation levels suggest that informal and formal for-profit milk markets are enduring features of milk markets.

### III. A PATH FOR MILK MARKETS IN ALABAMA

To best support Alabama’s citizens, state policymakers must consider ways to safely support growing breastmilk markets. Alabama’s approach to informal and formal human milk sharing must contend with a variety of concerns and risks to seize the benefits of these markets in milk in a way that ultimately helps the citizens of Alabama.

One potential risk of milk exchanges involves the financial incentive for sellers to adulterate the milk and lie about risk factors when individuals are compensated directly for breast milk. In 2015, a team led by a researcher at Nationwide Children’s Hospital in Ohio purchased 102 samples of milk from Internet-based sellers on Only the Breast’s website.<sup>129</sup> After analyzing the breast milk, the team found that 11 of the 102 samples contained cow DNA, and upon further testing, the team concluded that ten of those samples consisted of at least 10% cow’s milk.<sup>130</sup> The study highlights the risk of tying financial incentives to milk based on volume as some sellers may subsequently feel

---

124. *See id.*

125. *See supra* notes 46–50 and accompanying text.

126. *See Mounting Allegations at Prolacta Biosciences*, PATCH (June 25, 2020, 11:32 AM), <https://patch.com/california/los-angeles/mounting-allegations-prolacta-biosciences>.

127. *See id.*

128. *See Roeder v. Prolacta Bioscience, Inc.*, No. 19STCV37738 (Cal. Super. Ct. L.A. Cnty. Oct. 21, 2019) (LACourt, Case Access).

129. *See Sarah A. Keim et al., Cow’s Milk Contamination of Human Milk Purchased via the Internet*, 135 PEDIATRICS 1157, 1157 (2015).

130. *See id.*

motivated to supplement their milk with additives to reach a certain measurement. The risk of adulteration with cow's milk is especially dangerous for babies with cow's milk protein allergy, which is the most common food allergy in childhood.<sup>131</sup>

As such, Alabama must adopt policies to mitigate these risks, such as setting inspection and quality control standards for formal milk banks like those of Maryland, California, New York, Pennsylvania, and Texas. For informal exchanges, the state should seek to highlight and promote mitigation strategies to protect against dangerous exposures through milk purchased between peers. The CDC counsels that “the risk of transmission of infectious diseases via breast milk is small” for pasteurized milk,<sup>132</sup> and there are currently “no reported cases” of disease transmission through milk sold via informal channels.<sup>133</sup> Educating Alabamians about screening strategies for milk-sharing arrangements, such as requesting sellers to submit to testing for infectious diseases like HIV and hepatitis, requesting that sellers provide proof of sanitary collection and shipping procedures, and pasteurizing or flash heating human milk, must be a priority.

Second, for-profit breastmilk transactions carry the potential to deepen economic divides and undo progress in breastfeeding between a mother and her own child. This could look like a mother “farming out” her breast milk to someone willing to pay a high sum at the expense of providing milk to her own child. This practice was observed in Brazil, when allowing the sale of breast milk meant that some impoverished mothers sold their milk before fully feeding their children, leaving the children malnourished.<sup>134</sup> Eventually, Brazil banned the for-profit model and instituted a nationwide system of 213 donative collection centers.<sup>135</sup> State legislators should therefore seek to implement policies and programs that encourage buyers transacting with unknown sellers to insist on proof of a doctor's clearance to sell milk during their self-determined screening process, which could mitigate the possibility that a woman is selling milk to the detriment of her own child or herself.

---

131. See *Cow's Milk Protein Allergy*, NESTLÉ HEALTH SCI., <https://www.nestlehealthscience.com/health-management/food-allergy/milk-allergy/milk-allergy-babies> (last visited Dec. 16, 2021).

132. See *Breastfeeding: What to Do if an Infant or Child Is Mistakenly Fed Another Woman's Expressed Breast Milk*, CTRS. FOR DISEASE CONTROL & PREVENTION, [https://www.cdc.gov/breastfeeding/recommendations/other\\_mothers\\_milk.htm](https://www.cdc.gov/breastfeeding/recommendations/other_mothers_milk.htm) (last visited Dec. 16, 2021).

133. See Dutton, *supra* note 64.

134. See Carrie Arnold, *Breast Milk for Sale*, ATLANTIC (Oct. 1, 2015), <https://www.theatlantic.com/health/archive/2015/10/ethics-of-donating-breast-milk/408202/>.

135. See *Learning from Brazil's Success with Milk Banks*, UNIV. MICH. NEWS (Dec. 12, 2014), <https://news.umich.edu/learning-from-brazil-s-success-with-milk-banks/>.

Similarly, permitting informal markets introduces both a commodity and a profit incentive that might lead to the exploitation of women.<sup>136</sup> This could happen either through acquiring milk on terms grossly unfair to a lactating woman or through schemes to coerce women to sell their milk for a profit. Such an argument is not far-fetched: “milk” is even colloquially used as a verb to describe exploiting or defrauding someone or something.<sup>137</sup> Asymmetrical power in the transacting process and nonconsensual takings are certainly real concerns whenever property value in the human body is recognized, as some argue that “commodification . . . enables exploitation.”<sup>138</sup>

To combat these challenges, Alabama must adopt policies that discourage egregious behavior and prevent the exploitation of women. Like Maryland, California, Pennsylvania, and New York, Alabama can require special licenses for institutions that distribute milk and set inspection and quality control standards for breast milk. For individual sellers, Alabama must seek to set standards and implement educational programs that deter exploitive behavior and empower both parties in a milk transaction. To promote fair compensation in peer-to-peer transactions, Alabama can equip buyers and sellers with tools to effectively deal with another party in a transaction for bodily fluids through education initiatives and informational toolkits for lactating women. Furthermore, Alabama can mitigate the risk of exploitation by encouraging purchasers to insist on dealing directly with a milk producer during both the initial communication and exchange phases of an informal transaction, which could minimize the risk that a third person profits off the milk through coercion or grossly unfair terms. These mitigation strategies are not fail-proof, as perhaps a third party might coerce a woman to directly communicate or meet with a buyer or to forge medical documents in order to conduct a sale of milk. However, encouraging the use of screening strategies could increase the transaction and opportunity costs for any parties exploiting the process, which would help disincentivize egregious behavior.

---

136. See Mathilde Cohen, *From Human Dairies to Milk Raiders: A Visual History of Milk Banking in New York City, 1918–2018*, 40 FRONTIERS: J. WOMEN STUD., no. 3, 2019, at 139, 140–41 (asserting that exchanges in milk rely on an “embodied female labor that is both emancipatory and exploitative”); see also Michele Goodwin, *Bio Law: A Few Thoughts About Altruism and Markets*, 18 KAN. J.L. & PUB. POL’Y 208, 214 (2009).

137. The Oxford English Dictionary notes that one meaning of “milk[ing]” is “to drain completely of resources; to exploit exhaustively.” *Milk*, *v.*, OXFORD ENGLISH DICTIONARY (Mar. 2002), <https://www.oed-com.libdata.lib.ua.edu/view/Entry/118439?rsk=y&result=3&isAdvanced=false#eid> (last visited Dec. 16, 2021); see also ALDOUS LEONARD HUXLEY, LETTERS OF ALDOUS HUXLEY 631 (1969) (“My feeling about the story is that you have got hold of something big, but have not yet milked it for all it is worth.”).

138. See Herjeet Marway et al., *Commodification of Human Tissue*, in HANDBOOK OF GLOBAL BIOETHICS 581, 592 (Henk A.M.J. ten Have & Bert Gordijn eds., 2014), <https://philpapers.org/archive/MARCOH-2.pdf>.

## CONCLUSION

As markets for human milk develop, Alabama must update its protections, guidelines, and standards for breast milk and breastfeeding within the state. Formal and informal breastmilk markets occupy a valuable role in satisfying the demand for breast milk that remains unquenched in systems based purely on altruistic transfers, and they offer a number of advantages for buyers and sellers. Given this reality, Alabama's legislators and policymakers must embrace both formal and informal milk markets in a thoughtful manner. By implementing policies that grapple with the complicated interests in milk transactions and equip buyers, sellers, and the public with the tools and knowledge they need to navigate milk markets in a safe manner, Alabama can seize a powerful opportunity to support families and contribute to the healthy development of its people.

*Meredith Moore\**

---

\* Juris Doctor Candidate (May 2023), The University of Alabama School of Law. This Note originated in Professor J. Shahr Dillbary's Law and Economics seminar, and I am grateful to him for invaluable direction and feedback. Thank you to my parents, Steve and Michele Moore, my sister, Katherine Moore, and Andrew Sudol for their support during law school. Thank you to my classmates for their insight and encouragement, and thank you to the *Alabama Law Review* editors for their hard work and edits.