Spring 5-12-2023

High Intensity Drug Trafficking Areas and small/community banks in rural areas.

Samuel Spencer

Murray State University Honors College

HONORS THESIS

Certificate of Approval

High Intensity Drug Trafficking Areas and small/community banks in rural areas.

Samuel Spencer
May/2023

Approved to fulfill the   _____
requirements of HON 437   Dr. Nochebuena-Evans, Finance

Approved to fulfill the   _____
Honors Thesis requirement   Dr. Warren Edminster, Executive Director
of the Murray State Honors   Honors College
Diploma

High Intensity Drug Trafficking Areas and small/community banks in rural areas.

Submitted in partial fulfillment
of the requirements
for the Murray State University Honors Diploma

Samuel Spencer
April 2023

Abstrast:

Drug trafficking is on the rise in America. Drug trafficking brings money laundering, and banks have to combat this with Anti-Money laundering (AML) policies from the Bank Secrecy act. This is combated by the High-Intensity-Drug-Trafficking Area (HIDTA) designation. The designation aims at providing support to local, state, and federal law enforcement to combat drug trafficking in these counties. HIDTA and banks are not connected. Rather I use the HIDTA designation as a proxy to clearly identify counties that have drug trafficking. I specifically focused on small and community banks in rural areas. Small and community banks are disproportionately affected by AML policies compared to larger banks due to larger banks being able to employ economies of scale. Larger banks are able to spread the compliance costs over their network of branches, while a small bank might only have a couple of branches across their local areas. To find this, I found counties based on the census definition of mostly rural, mostly urban, and completely rural. I then used bank deposit information as a proxy for financial health of the bank. I ran regressions, and found that there is a statistical significance that HIDTA does hurt bank deposits in a county. I found that these HIDTA designation hurts bank deposits more in completely rural areas compared to mostly rural and urban counties. Most importantly, I found that when a county started as HIDTA and then was later removed as a HIDTA county, signaling there was no need for HIDTA and it was successful at reducing drug trafficking in the area, median deposits increased. This supports the hypothesis that the elimination of HIDTA designation will positively influence banking behavior.

Table of Contents

List of Figures and Tables:

INTRODUCTION

Drug trafficking and use is on the rise in America. A majority of drugs are trafficked through the Mexican border, to a lesser extent the Canadian border, and then trafficked and distributed all throughout the United States. This results in drug-related deaths, loss of productivity, and healthcare costs harming the U.S. economy. To combat drug trafficking, the High Intensity Drug Trafficking Area (HIDTA) program was created. This program works with local law enforcement agencies to coordinate and combat drug trafficking.

I use the HIDTA designation as a way to measure the impact this designation has on banks, specifically small and community banks in rural areas. HIDTA does not directly impact banks, but we can use it as a proxy. Drug trafficking brings money laundering causing banks to spend more on Anti-Money Laundering (AML) policies in areas that have a high amount of drug trafficking. This is due to the Bank Secrecy Act. The Bank Secrecy act requires financial institutions to assist the government in identifying and preventing money laundering. I specifically focus on whether the HIDTA designation is beneficial or not to small and community banks in rural areas. Rural areas are important to study because they play a major role in the U.S. economy. For example, rural areas are made up primarily of small businesses and are very important to the agricultural sector. Furthermore, rural communities are not immune to drug trafficking problems. As per the Midwest HIDTA regional office (2022), large amounts of drugs are trafficked through and moving to rural areas. Rural youth also consume drugs at a higher rate than urban youth, and the majority of marijuana is grown outside in rural areas. Rural areas rely on small and community banks to lend out agriculture loans as well as small businesses loans.

Unfortunately, Small and community banks are shown to be disproportionately hurt by AML policies compared to larger banks. Counties that have higher costs associated with AML

policies tend to be HIDTA counties. This might not be caused by the designation itself, rather the existing issue of drug trafficking. Banks do not have to follow AML policies due to HIDTA, rather due to the Bank Secrecy Act. Think of the HIDTA designation as a diagnosis of a disease. The diagnosis didn't cause you to get sick, rather it gives you the resources to fight your infection. If HIDTA can prove to be successful in combating drug trafficking, it might severely limit or rid these counties of drug trafficking, and allow small and community banks to not spend as much on AML policies, allowing them to more effectively lend to the community. My research question is: "Is the High Intensity Drug Trafficking Area (HIDTA) designation good for small and community banks in rural areas?"

LITERATURE REVIEW

Impact of Drug Trafficking and Drug Use in the United States

There has been a rise in drug trafficking and drug use in the U.S. which can have a large and negative impact on labor capital (e.g. supply, productivity) and other related costs (e.g., healthcare, social programs) associated with drug use.

According to statistics put forth by U.S. Border Patrol and Office of Field Operations Nationwide Drug Seizures database (see Figure 1), in 2014, cocaine and methamphetamine seizures were 49,877 and 23,543 pounds, respectively, while in 2021 seizures increased to 97,637 and 191,834 pounds, respectively. This also includes a substantial increase in fentanyl seizures, from 0 pounds in 2014 to 11,201 pounds in 2021 (U.S. Customs and Border Protection, 2023).
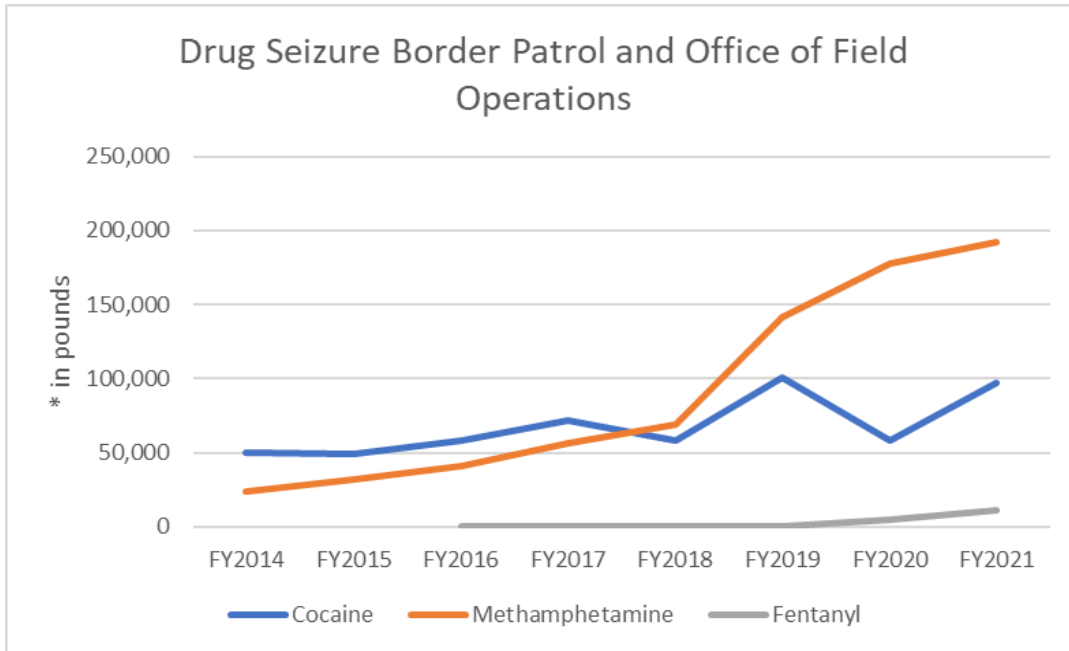
Figure 1. Drug Seizure data FY2014 to FY2021
Source: U.S. Customs and Border Protection

Drug use has a negative impact on human capital and is attributed to high levels of costs. For example, a large portion of employed individuals are reported to use drugs. According to the U.S. Dept. of Health and Human Services (2011) and the Obama White House Archives (2011), "the majority (67%) of current drug users aged 18 or older were employed, either full-time (48%) or part-time (19%), with the unemployed accounting for 13% and the remaining 21% not in the labor force." In 2011 the U.S. Department of Justice estimated a total cost of a little over $193 million related to drug use with 62.3% attributable to lost productivity. Furthermore, in 2001 19,394 individuals died from overdoses while the number increased to 106,699 in 2021 (CDC, 2022). This is a more than 5 times increase in drug overdoses. These statistics show a substantial increase in drug use, overdoses, drug-related deaths, as well as increased levels of drug trafficking which can have a negative impact on the U.S. economy due to increased costs and decreased productivity (see Figure 2).
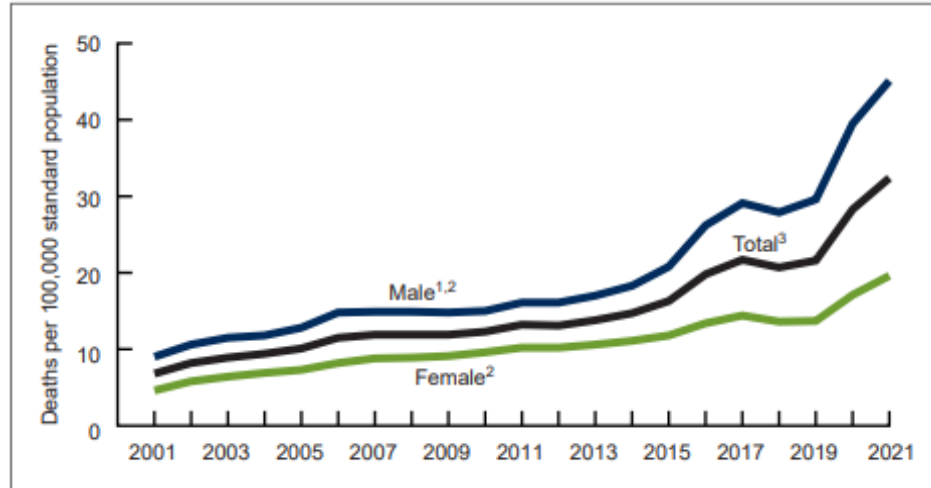
Figure 2. drug overdoses 2001-2021
Source: CDC (2022)

High Intensity Drug Trafficking Areas

Unfortunately, certain areas in the country are hotspots for drug trafficking which have proven tougher to combat. This has required local law enforcement needing federal assistance and resources to combat these drug-related problems.

The HIDTA designation was created by congress with the Anti-Drug Abuse Act of 1988 and administered by the Office of National Drug Control Policy (ONDCP). This designation aids federal, state, and local law enforcement agencies in critical drug trafficking regions in the United States. In 2021, HIDTA program's annual budget was $290 million with more than 22,000 direct and supporting personnel taking part in close to 850 HIDTA initiatives (HIDTA, 2021).[1] The Drug Enforcement Agency (DEA) states it has over 1,500 special agents dedicated to this program (DEA, 2023).

Currently there are at least one or more HIDTA counties in all 50 states (see Figure 3). As of 2018, 67% of the U.S. population is in a HIDTA area and 19.6% of counties in the U.S. are

---

[1] As per survey administered by HIDTA to Law enforcement personnel, 99% of them reported they think HIDTA assistance is helpful (HIDTA, 2021).

HIDTA (HIDTA, 2021). For a county to receive the HIDTA designation, it has to meet the following criteria:

> "The area is a significant center of illegal drug production, manufacturing, importation, or distribution; state, local, and tribal law enforcement agencies have committed resources to respond to the drug trafficking problem in the area, thereby indicating a determination to respond aggressively to the problem; drug-related activities in the area are having a significant harmful impact in the area and in other areas of the country; and a significant increase in allocation of federal resources is necessary to respond adequately to drug related activities in the area (DEA, 2023)."
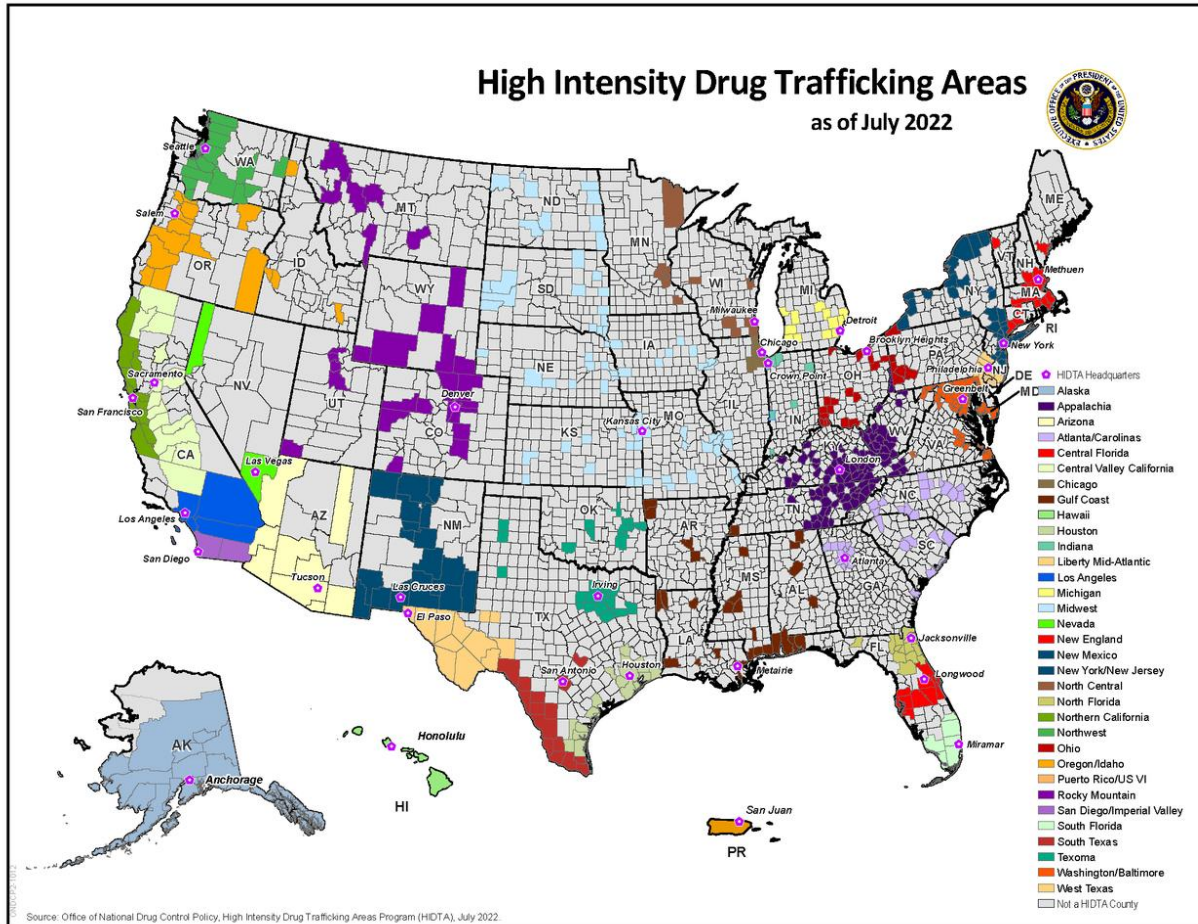
Figure 3. HIDTA county map
Source: White House (2022)

The HIDTA designation has been proven successful in combating the rise in drug trafficking. For example, the HIDTA Annual Report to Congress (2022) states that in 2020 HIDTA initiatives were able to disrupt or dismantle a little under 35% of drug trafficking/money laundering operations identified and were able to remove $17.6 billion in drugs resulting in a return on investment (ROI) of $68.16 for every dollar budgeted.

Financial Institutions: Small Banks and Community Banks

Small and community banks play an important role in the economy. While large banks can take advantage of economies of scale, small and community banks can take advantage in processing soft information.[2]

Community banks make up the vast majority of banks in the U.S.. "As of year-end 2019, there were 4,750 community banks in the country with more than 29,000 branches in communities from coast to coast" (FDIC Community Banking Study, 2020). You can see the clear number of community banks in the following Figures. Figure 4 shows how there are more rural community banks than urban community banks. Figure 5 and 6 show a much greater average number of community banks compared to large banks in both urban and rural markets.

Source: Federal Reserve Board staff calculations using bank Reports of Condition and Income filed with the Federal Financial Institutions Examination Council and Thrift Financial Reports filed with the Office of Thrift Supervision.
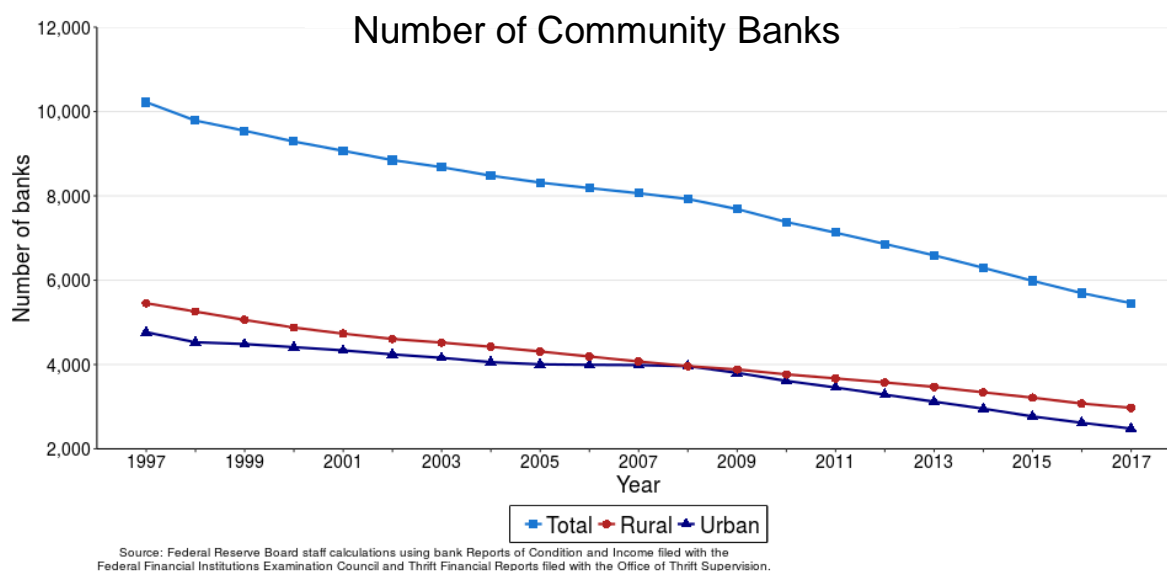
Figure 4. Number of Community banks by county type
Source: FDIC (2018)

---

[2]"Information that is difficult to completely summarize in a numeric score, that requires a knowledge of its context to fully understand, and that becomes less useful when separated from the environment in which it was collected"(Liberti & Petersen, 2018).
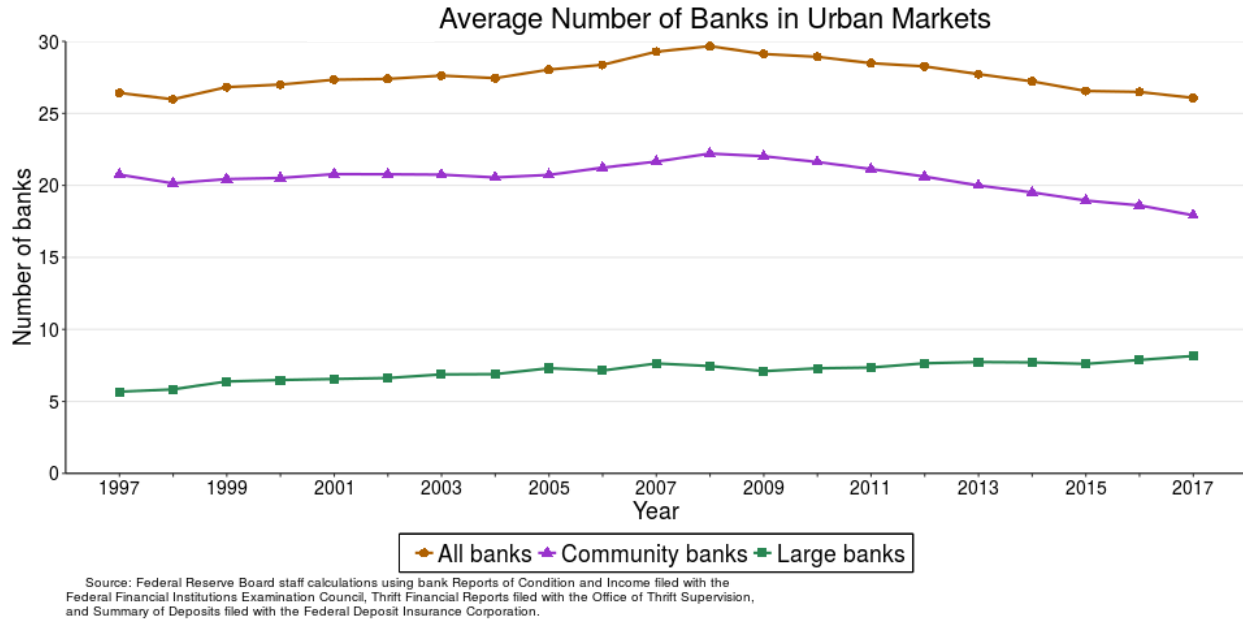
Figure 5. Average of types of
Banks in Urban markets
Source: FDIC (2018)
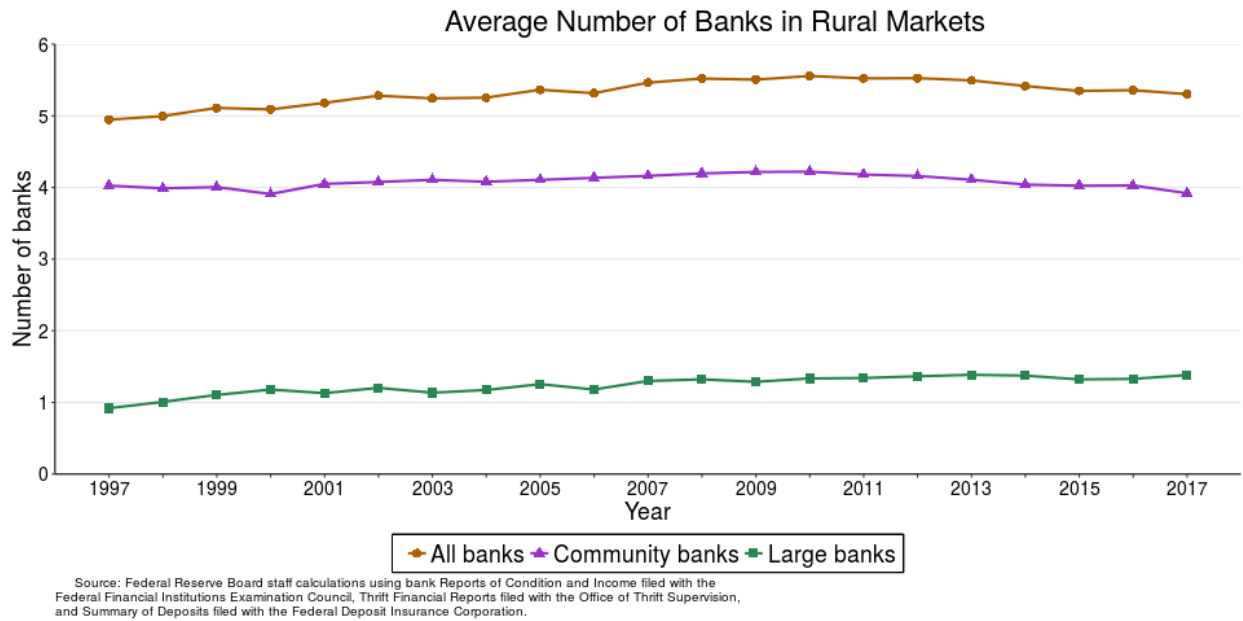
Figure 6. Average of types of Banks in Rural markets
Source: FDIC (2018)

The FDIC also states that relative to noncommunity banks, community banks have had

faster growth on asset ratios, higher loan growth rates, and stronger asset quality. "Coming off

the recession that ended in 2009, community bank pretax ROA ratios steadily improved, increasing from 1.05 percent in 2012 to 1.44 percent in 2019" (FDIC Community Banking Study, 2020)." "The full-year net charge-off rate reported by community banks reached a post-crisis low of 0.13 percent in 2019, which was 45 basis points below the rate reported by noncommunity banks (FDIC Community Banking Study, 2020)."

| Deposit Growth Remained Elevated for Community Banks but Moderated for Noncommunity Banks in 2022						
	2018	2019	2020	2021	2022	2017 to 2022
Bank Designation	Year-Over-Year Domestic Deposit Growth, Not Adjusted for Mergers (Percent)					
Noncommunity Banks	4.3	4.5	23.9	10.4	5.3	57.0
Community Banks	0.9	2.2	8.9	12.1	4.8	32.0
	Year-Over-Year Domestic Deposit Growth, Adjusted for Mergers (Percent)					
Noncommunity Banks	3.7	3.9	22.6	10.3	4.8	52.6
Community Banks	4.9	5.5	16.5	13.5	8.4	58.7

Figure 7. Summary of Deposits for Community and Non-Community Banks
Source: FDIC (2023)

Community banks have shown that they are less likely to close than noncommunity banks. From 2011 to 2019, 30% of community banks had closed compared to 36% of noncommunity banks (FDIC Community Banking Study, 2020). Smaller and community banks have proven that they can be more resilient to closing, and loan less proportionately in total industry loans, but make it up in small business and farm loans (FDIC Community Banking Study, 2020). Due to their nature, small banks are able to employ farm lending specialists to help better loan to farms. "From first quarter 2000 through fourth quarter 2019, in only two quarters did community-bank agricultural specialists see an annual decline in aggregate agricultural production loan volume, and never in aggregate farmland-secured loans." (FDIC Community Banking Study, 2022) They also show higher loan rates, faster growth on asset ratios, and stronger asset quality (FDIC Community Banking Study, 2020).

Rural Communities

As per the 2010 Decennial Census, the U.S. Census Bureau estimated approximately 11.9% of the population live in mostly rural counties while 86.3% of the population live in mostly urban communities (U.S. Census Bureau, 2016).[3] Seven hundred and four counties were classified as 100% rural (U.S. Census Bureau, 2016). (See figure 8).
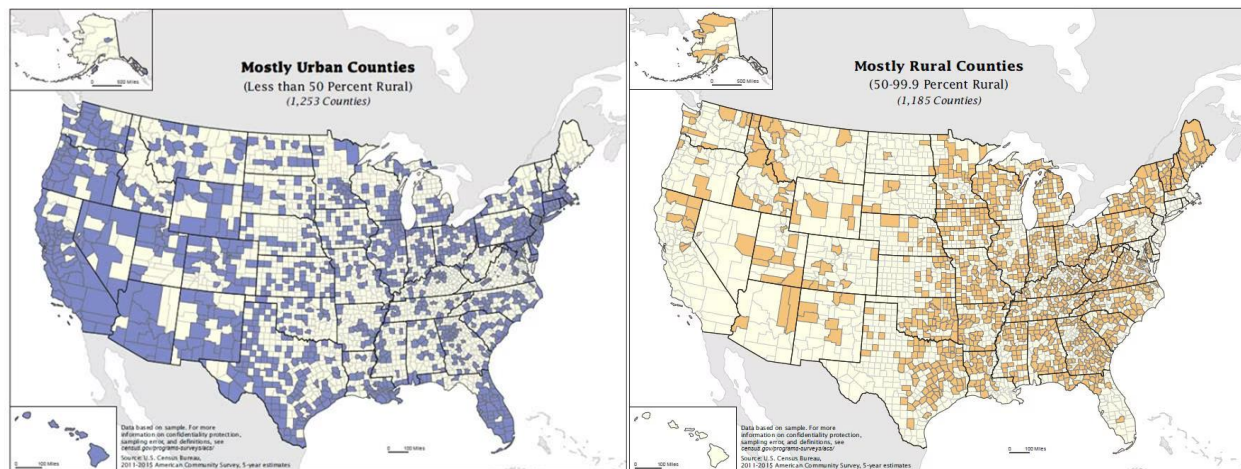
Panel A: Less than 50% Rural   Panel B: 50%-99.9% Rural
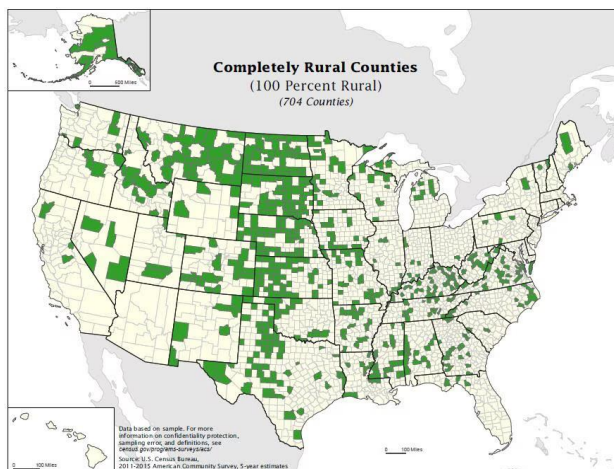
Panel C: 100% Rural

Figure 8. County map by designation
Source: Census (2016)

---

[3] Around 86.3% of the population live in mostly urban counties (U.S. Census Bureau, 2016).

Rural areas are experiencing population growth. For example, from July 2019 to July 2020, there was a 0.1% population decline in rural communities, but a 0.3% increase in the following 12 months. The USDA Economic Research Service (2022) has found that for the first time since the mid-1990s "nonmetro areas began growing at a faster rate than metro areas."[4] This growth is primarily attributed to "declining rural unemployment, rising incomes, and declining poverty since 2013 (USDA, 2018)" and changes in migration patterns. For example, there was a 0.5% net change in migration from 2020 to 2021 and "these improved labor market conditions have allowed rural areas to retain more residents and attract more newcomers (USDA, 2018)".

Rural areas are of extreme importance to the U.S. economy (see Figure 9). In 2019, over 15% of total government employment was located in rural areas, compared to around 12% in nonrural areas. Over 11% of total employment in 2019 were manufacturing jobs in rural areas, compared to around 6% in nonrural areas (USDA Economic Research Service, 2022). Furthermore, rural labor productivity and GDP has been increasing. As per the USDA Economic Research Service (2022), "labor has increased around 80% and GDP has increased around 60% in rural areas".

---

[4] The United States Department of Agriculture (2022) defines a nonmetro area as "open countryside, rural towns (places with fewer than 2,500 people), and urban areas with populations ranging from 2,500 to 49,999 that are not part of larger labor market areas (metropolitan areas)."
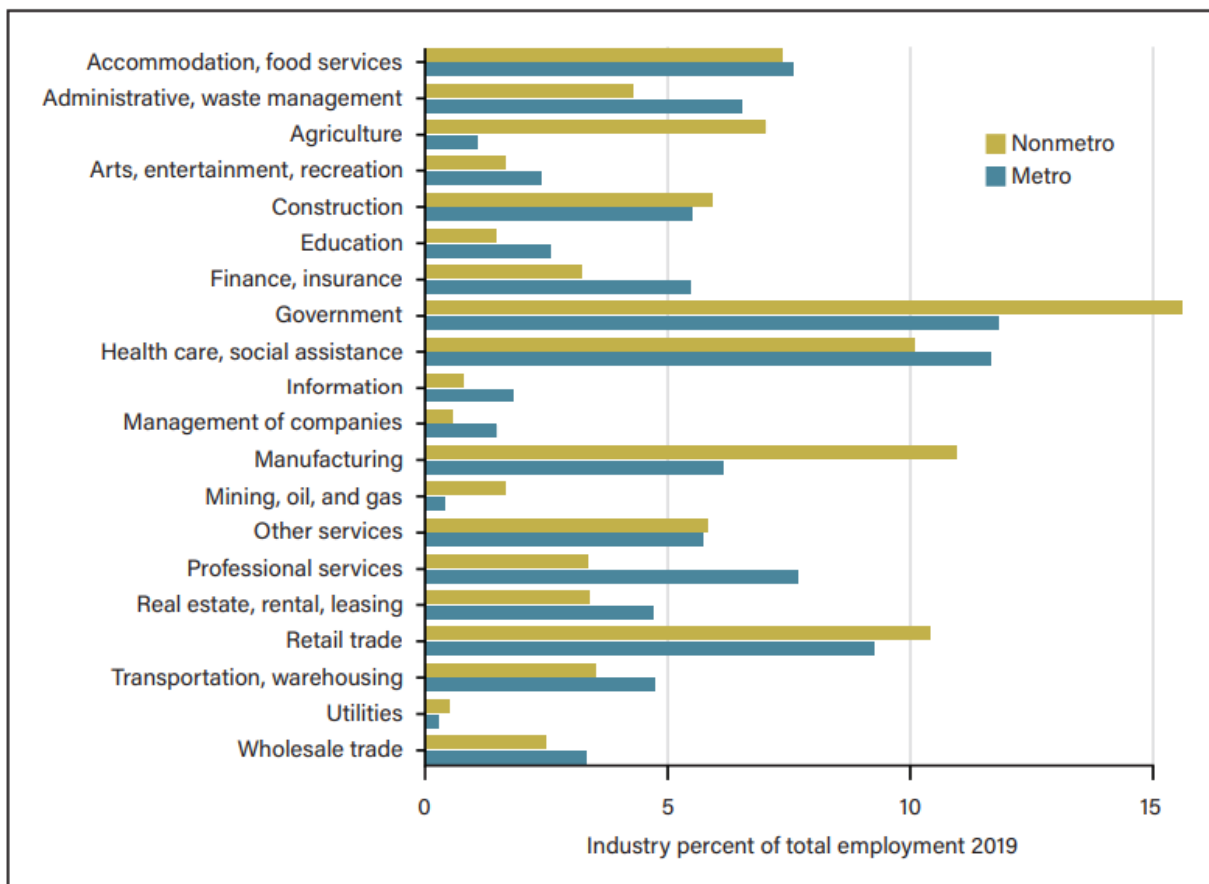
Figure 9. Percent of total employment by industry in 2019
Source: USDA Economic Research Service (2022)

Small businesses are of extreme importance to the national economy. Small businesses

create two-thirds of net new jobs and account for 44 percent of U.S. economic activity. For

example, from 1998 to 2014, small business GDP has grown by about 25% (SBA's Office of

Advocacy, 2022). Score (2021) states that "80% of rural small business owners believe the

quality of life and cost of living are much better in rural areas." By the end of 2015, the Fed

Small Business (2017) finds that a higher percentage of rural small businesses (56%) are at a

profit compared to urban small businesses (53%) with rural small businesses more likely to receive financing (51%) compared to urban small businesses (38%).

Rural areas account for a large amount of the U.S. economy and are very important to the U.S. agricultural sector. There are 2 million farms in the rural landscape, and 98% are operated by families (American Farm Bureau Federation, 2020). Agriculture and food makes up 10.5% of total jobs in the U.S. in 2021 (USDA, 2023) with most of the employment located in rural areas. The USDA Economic Research Service (2022) found that in 2019 7% of total employment were agriculture jobs coming from non-metro areas, compared to only 1.1% of total employment of agriculture jobs coming from metro areas.

The U.S. agricultural sector is very competitive in the international market (Council of Economic Advisors, 2023) with agriculture making up a large percentage of U.S. exports. For example, "in 2008, U.S. agricultural exports were worth $70 billion according to Census definitions, and $115 billion using the Department of Agriculture's broader definition (Council of Economic Advisors, 2023)".

Rural Communities and Financial Institutions Interaction

The Federal Reserve (2017) finds that there are a greater number of community banks in rural areas compared to urban areas in 2017. There is also a greater number of small institutions in rural areas compared to large institutions (see figure 10). These financial institutions are essential to keeping rural and small communities alive. Research finds that small businesses prefer to bank with small and community banks. For example, "studies find that interest rates increase as the distance between a business and the local branch of its lender grows—a potential reason why the majority of small businesses borrow from institutions with a local presence (Federal Reserve, 2019)." "Researchers have found that a relationship approach to banking can be especially advantageous to small businesses and banks in rural areas,

because greater social capital in these areas allows for more informed transactions (Fed Small Business, 2017)."
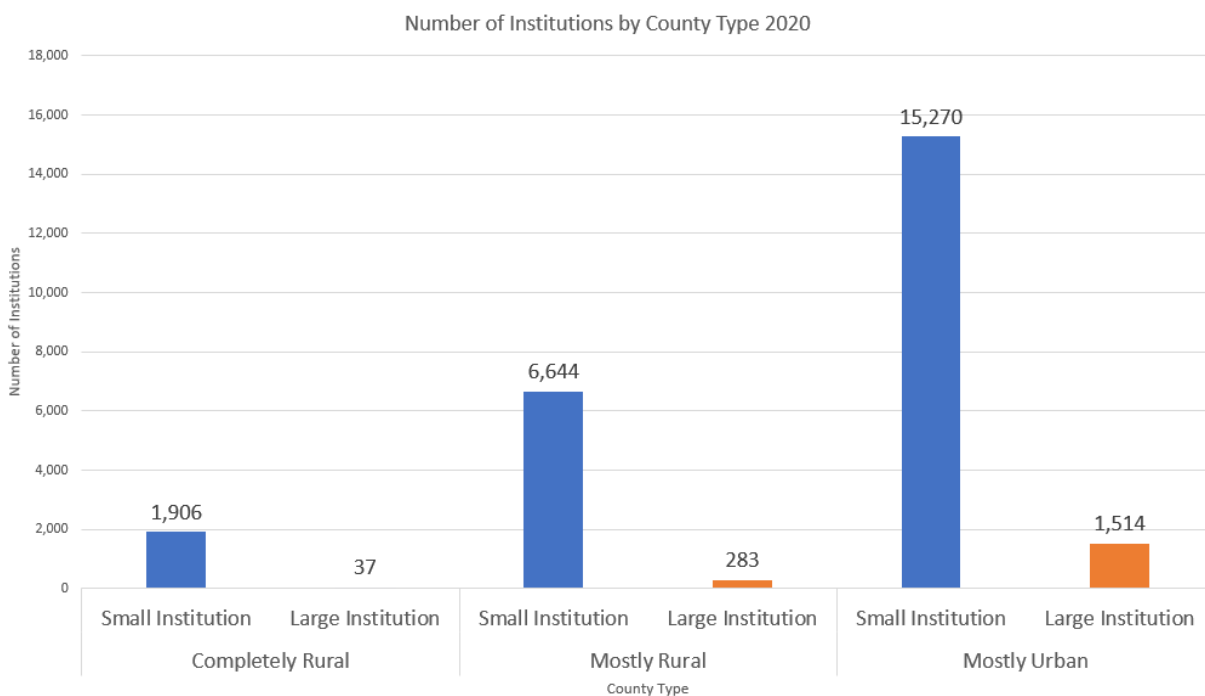
Figure 10. Number of institutions by county type in 2020

Community banks are able to specialize to a community's needs due to their small size and are key providers of small business loans, agricultural loans, and commercial real estate (CRE) loans. For example, community banks hold 30% and 36% of CRE and small business loans in the banking industry, respectively, while funding roughly 31 % of the farm sector in 2019 (FDIC Community Banking Study, 2020).

Furthermore, community banks have shown to be resilient to major economic shocks. Relative to banks in urban areas, community banks in rural areas had a better recovery from the 2008 financial crisis. For example, the Federal Reserve (2017) found that "the rate of decline was steeper for rural banks than for urban banks before the financial crisis but has reversed in the post-crisis period." This is shown in figure 11.
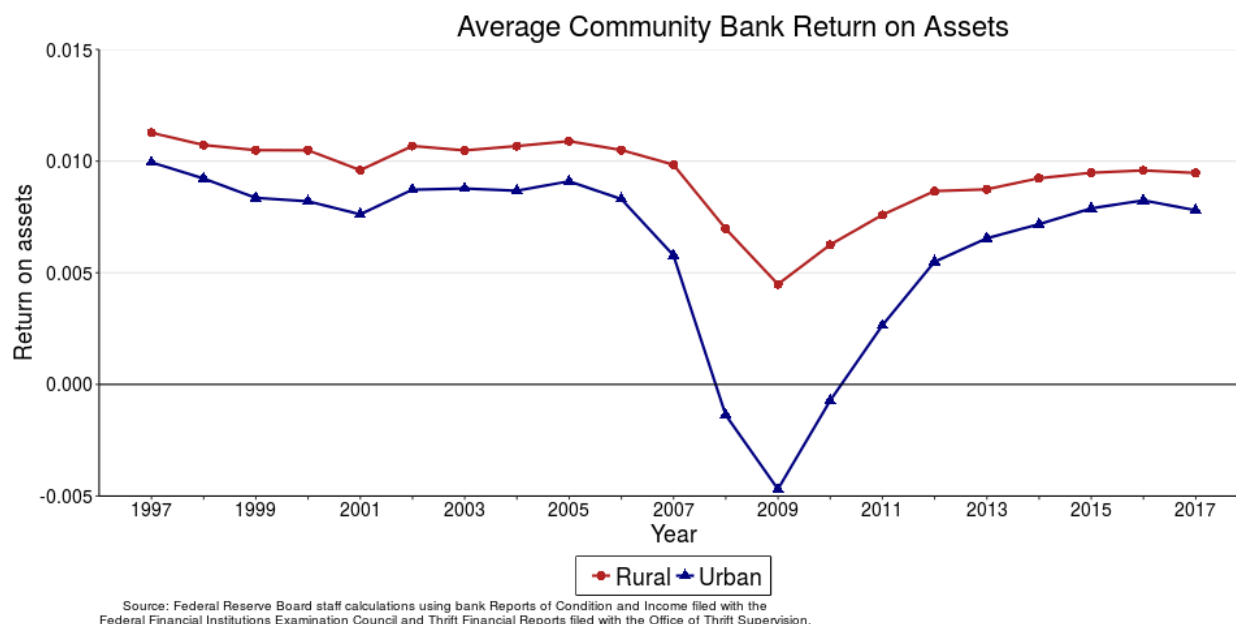
Figure 11. Average community bank ROA
Source: FDIC (2018)

High Intensity Drug Trafficking Areas and Financial Institutions Interaction

The effects of drug trafficking also influence the behavior of financial institutions. For example, as per federal policy, banks combat drug trafficking via their Anti-Money Laundering (AML) policies. Unfortunately, small banks are disproportionately affected by AML policies (Agca et al., 2020) while large banks can take advantage of economies of scale and spread their compliance costs. Examples of compliance costs are the salaries of people in compliance, the technology, and systems in place to carry out the compliance, and the time and energy spent to be in compliance. Agca et al. (2020) find that the cost of AML is 8 times larger among small banks than large banks at 0.8% of total assets. Compliance costs are also higher for areas more exposed to money laundering activities. For example, banks in HIDTA areas face higher compliance costs than non-HIDTA areas (Agca et al., 2020).

This can very much hurt smaller communities. Agca et al. (2020) state that large banks have a broader network of branches which allows them to allocate funds in high risk areas to

other areas in their network, lowering the overall credit availability in high risk communities. Small banks also have an advantage in terms of collecting and processing soft information in comparison to large banks (Agca et al., 2020).

Small and community banks have the advantage of processing soft information and providing loans to small banks and farms (Agca et al., 2020), but struggle with the compliance costs from AML policies (Agca et al., 2020). I hypothesize that these compliance costs are higher in HIDTA areas, which means small and community banks could have less money to loan out. HIDTA does not force banks to invest in more compliance, but it does show that there is an underlying drug trafficking problem in the area. If HIDTA is successful at reducing or eliminating drug trafficking in these areas, it could allow small and community banks to reduce compliance costs and continue to loan to their local communities.

Rural Communities and High Intensity Drug Trafficking Areas Interaction

Even though a large portion of HIDTA counties are in urban communities (see Figure 12), rural communities are in a unique position to produce drugs. Rural communities are remote, can be blended in with legitimate crops, and most rural areas have ideal climate and soil for growing drugs such as marijuana (Donnermeyer et al., 2016). There is a distrust that rural communities have with law enforcement, on top of the already limited rural law enforcement resources. Since 1991, the DEA has made a distinction between indoor and outdoor cultivated plant seizures. The DEA have found that around 7%, and never above 10%, of seized plants are indoor operations (Donnermeyer et al., 2016). Indoor operations are facilities that use hydroponics and control the lighting patterns and carbon dioxide levels to allow marijuana to grow indoors. Methamphetamine production is also highly successful in rural areas. Methamphetamine is shown to be produced by cooks and sold to people that know each other (Donnermeyer et al., 2016). On top of that some chemicals needed to produce methamphetamine are commonly used by people on farms. All of these factors allow rural areas to be very successful in producing marijuana and methamphetamine. Drug use is also higher in

rural adolescents compared to urban adolescents in rural US. "Both lifetime use and past 30-day use of any substance were significantly higher within rural areas relative to rural areas" (Coomber et al., 2011). Rural adolescents use marijuana twice as often as their urban counterparts (Coomber et al., 2011).
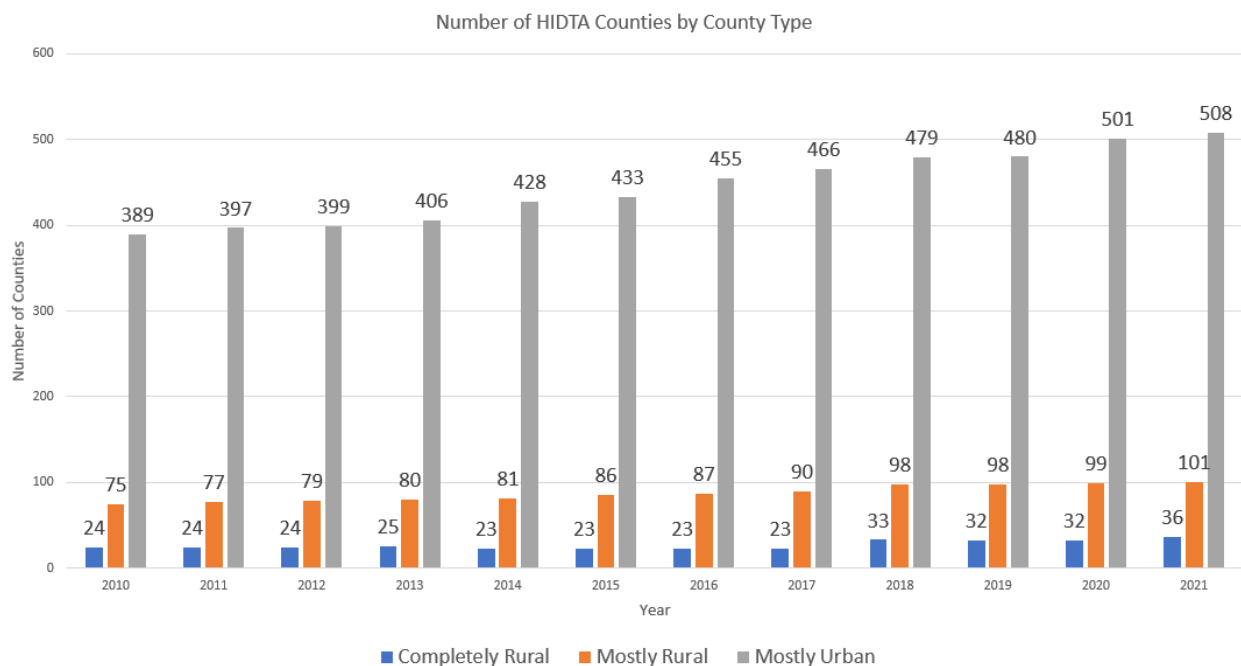
Figure 12. Number of HIDTA by county type

One example of a successful HIDTA designation is in a rural area such as Oregon. "During 2012 alone, task forces operating under the HIDTA Program umbrella nationwide prevented over $15 billion in drugs from reaching communities throughout the United States. During the same time, HIDTA-sponsored task forces seized over $2 billion from drug traffickers, which had a dramatic and negative impact on their bottom line and reason for being in business." (Sutton & Gibson, 2013). Another example is the Midwest HIDTA program. Due to the Midwest central location, it allows easy access for drug users to use roadways to move drugs into the Midwest or through it. The Midwest is a very rural area, and the Midwest HIDTA has seen a trend of Drug trafficking operations (DTO) moving to a more rural setting. "Approximately 24 percent of [law enforcement] LES respondents noted the movement of large

metropolitan gangs (e.g. Gangster Disciples, MS-13) from major cities into smaller more rural areas" (Midwest HIDTA, 2022). Small and community banks pay the price for these money laundering operations due to the higher compliance costs. "The Midwest HIDTA region serves as an attractive area for drug trafficking and money laundering organizations because of its extensive transportation network, varied demographics, substantial population, and centralized geography.

HYPOTHESES

When rural areas are used in drug trafficking, small and community banks pay a disproportionate amount in compliance costs. This hurts rural communities, because rural communities are invested in agriculture and small businesses, which rely on small and community banks for loans. This in turn hurts the overall economy in addition to the costs associated with drug use. With this I postulate my first three hypotheses:

Hypothesis 1: The HIDTA designation negatively influences financial institution behavior.

Hypothesis 2: Financial institution behavior is statistically different in rural versus non-rural communities.

Hypothesis 3: A rural HIDTA county will be financially less impacted due to high amounts of small banks and community banks?

If HIDTA is successful in rural areas, they can combat drug trafficking and possibly lower compliance costs for small and community banks, allowing them to invest and loan more into their community. Therefore, I present my last hypotheses:

Hypothesis 4: The elimination of HIDTA designation will positively influence banking behavior.

METHODOLOGY

Sample Construction

My overarching hypothesis is that drug trafficking has negative spillover effects to banks in a county, but HIDTA's efforts help combat drug trafficking and result is secondary, positive effects to the banks in the area. To test my overarching hypothesis, I employ an ordinary least squares (OLS) estimation method. My sample is composed of 34,210 county-year observations for the sample period of 2010 through 2020. My data is sourced from Federal Deposit Insurance Corporation (FDIC), HIDTA regional offices, as well as the U.S. Census, U.S. Department of Labor Statistics, and the U.S. Bureau of Economic Analysis.

Table 1. Descriptive statistics

	N	Min	Median	Mean	Max	SD
ln(Deposits)	34210	5.79	9.72	9.74	15.74	0.59
HIDTA	34210	0.00	0.00	0.18	1.00	0.38
Completely_rural	34206	0.00	0.00	0.22	1.00	0.41
Mostly_rural	34206	0.00	0.00	0.38	1.00	0.49
Mostly_urban	34206	0.00	0.00	0.40	1.00	0.49
ln(Population)	34210	6.04	10.17	10.30	16.13	1.45
Minority_Black	34210	0.00	2.20	9.06	87.80	14.54
Minority_American Indian/Alaskan Native	34210	0.00	0.30	1.67	87.80	6.43

Minority_Asian	34210	0.00	0.60	1.26	44.80	2.62
Minority_Native Hawaiian/Pacific Islander	34210	0.00	0.00	0.08	13.70	0.42
Minority_Other	34210	0.00	0.80	2.06	58.80	3.66
Minority_Two/More	34210	0.00	1.80	2.28	29.50	2.02
Minority_Hispanic	34210	0.00	3.70	8.75	99.20	13.45
ln(Household_income)	34208	9.85	10.74	10.75	11.90	0.26
ln(GDP)	33640	9.07	10.54	10.56	15.82	0.52
ln(Establishments)	34210	3.69	25.35	27.95	181.33	11.62
Unemployment_rate	34206	1.07	5.75	6.31	29.41	2.87
Unemployment_growth	34206	-0.57	-0.07	-0.00	6.11	0.29
Poverty	34210	2.60	15.00	15.98	56.70	6.30
Education_<HS	34210	0.00	15.10	2293.84	625644.00	12015.47
Branches	34210	0.04	0.38	0.47	4.08	0.31

Models

Equation 1 tests my first hypothesis, that the HIDTA designation negatively influences financial institution behavior.

$$y_{i,s,t} = \beta_1 HIDTA_{i,s,t} + \lambda_{i,s,t} + \tau_s + \varphi_t + \varepsilon_{i,s,t} \qquad (1)$$

$y_{i,s,t}$ is the proxy variable, *In(Deposits)*, for financial health which is bank deposits. This is due to loan data being unavailable. This bank deposit information will be a proxy for the bank's financial behavior. *In(Deposits)* is defined as the natural log of total deposits per 1,000 of county i in state s at year t. I am assuming that higher deposits mean a healthier financial position for the bank. HIDTA counties are identified based on factors relating to drug production use, trafficking, and production. This also includes how harmful the drugs activities are to the surrounding areas, and if local law enforcement have already spent money trying to solve the issue. $HIDTA_{i,s,t}$ is the dummy variable taking a value of 1 if county i in state s at year t is designated as a high intensity drug trafficking area and 0 otherwise. τ_s controls for state fixed effects, and φ_t controls for time effects. $\lambda_{i,s,t}$ identifies all my control variables. I control for minority populations because minorities tend to bank less. *Minority_Black* is defined as the percentage of black or African American population of county i in state s at year t. *Minority_American Indian/Alaskan Native* is defined as the percentage of American Indian or Alaskan Native population of county i in state s at year t. *Minority_Asian* is defined as the percentage of Asian population of county i in state s at year t. *Minority_Native Hawaiian/Pacific Islander* is defined as the percentage of Native Hawaiian or Pacific Islander population of county i in state s at year t. *Minority_Other* is defined as the percentage of population identifying as other race of county i in state s at year t. *Minority_Two/More* is defined as the percentage of population identifying as two or more races of county i in state s at year t. *Minority_Hispanic* is defined as the percentage of Hispanic population of county i in state s at year t. I control for other factors based off previous literature (e.g., Agca et al., 2020). *In(Household_income)*: the natural log of the median household income of county i in state s at year t. *In(GDP)*: the natural log of GDP per 1,000 inhabitants of county i in state s at year t. *In(Establishments)*: the natural log of the total number of establishments per 1,000 inhabitants of county i in state s at year t.

Unemployment_rate is defined as the rate of unemployment of county i in state s at year t.

Unemployment_growth is defined as the unemployment growth of county i in state s at year t.

Poverty is defined as the percentage of households of county i in state s at year t below the poverty line. *Education_<HS* is defined as the rate of population age 25 and over with a 9th grade education and over but not high school graduation (or equivalency). *Branches* is defined as the total number of branches of county *i* in state *s* at year *t*.

To test my second hypotheses, whether financial institution behavior is statistically different in rural versus non-rural communities, I use equation:

$$y_{i,s,t} = \beta_1 CompletelyRural_{i,s,t} + \beta_2 MostlyRural_{i,s,t} + \lambda_{i,s,t} + \tau_s + \varphi_t + \varepsilon_{i,s,t} \tag{2}$$

The Census defines a rural county as any county not classified as urban based on population density, population thresholds, land use and distance. $CompletelyRural_{i,s,t}$ is a dummy variable taking a value of 1 if 100% of county i's population in state s at year t is rural and 0 otherwise. $MostlyRural_{i,s,t}$ is a dummy variable taking a value of 1 if 50.0-99.9% of county i's population in state s at year t is rural and 0 otherwise. The dependent and control variables are the same as previously defined above. I also control for state and time fixed effects.

To test my third hypothesis, will a rural HIDTA county be financially less impacted due to high amounts of small banks and community banks? I will use the equation:

$$y_{i,s,t} = \beta_1 HIDTA_{i,s,t} + \beta_2 CompletelyRural_{i,s,t} + \beta_3 MostlyRural_{i,s,t} + \beta_4 HIDTA*CompletelyRural_{i,s,t} + \beta_5 HIDTA*MostlyRural_{i,s,t} + \lambda_{i,s,t} + \tau_s + \varphi_t + \varepsilon_{i,s,t} \tag{3}$$

All dependent, independent and control variables remain the same as the equations above. I also control for state and time fixed effects. The variables of interest are the interaction terms.

Results

To answer the research question, I first look at the effect the HIDTA designation has on financial institutions at the county-level based on the county's rural designation. Figure 13 shows that the median for non-HIDTA counties is 9.72 while the median for HIDTA counties is 9.74. The figure shows the minimum, lower quartile, median, upper quartile, and max values of the natural log of branch deposits per 1,000 inhabitants for counties that do not have (orange) and have (blue) the HIDTA designation.

To test whether the difference in the mean of the natural log of branch deposits per 1,000 inhabitants between HIDTA and non-HIDTA is statistically significant, I use a Non-Parametric Two-Sample Wilcoxon Rank Test since my sample is not normally distributed and the variance between the two groups are not equal. The test statistics indicates that the difference in the mean between the two groups is 0.02 and is statistically different at <0.001 level.

Figure 13

ln(Deposits)

HIDTA classification

Non-HIDTA

HIDTA

Non-Hidta   Hidta
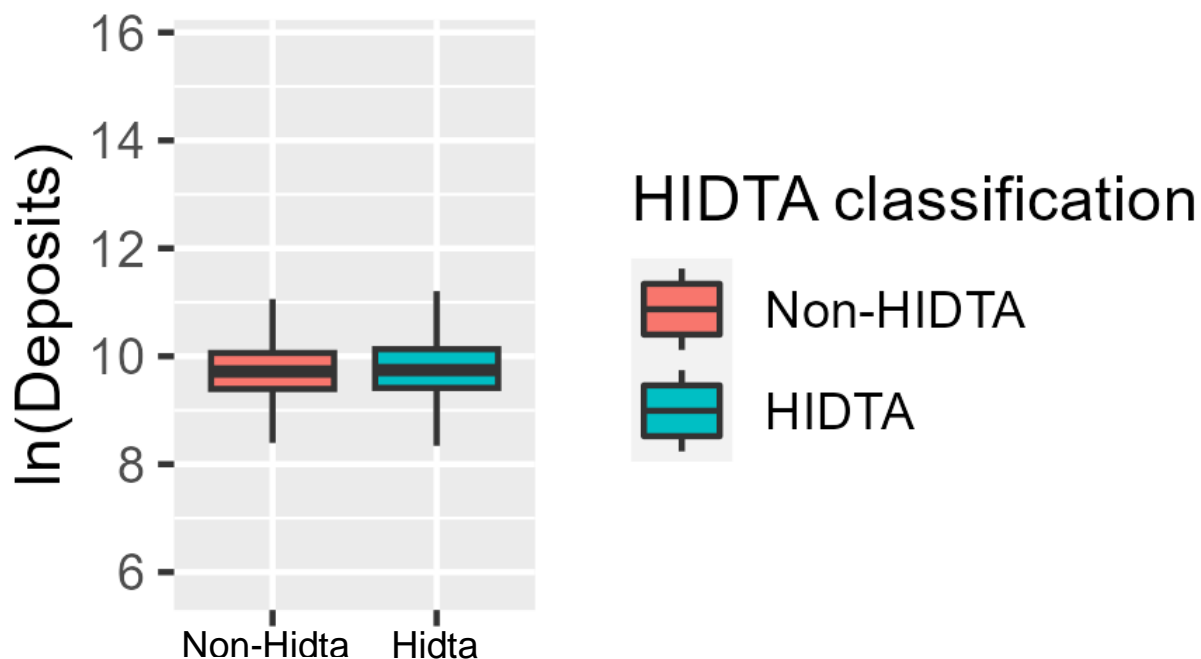
HIDTA classification

Table 2 shows the effect on *ln(Deposits)* when a county is designated as HIDTA versus a county without such designation. Model 1 looks at the direct relationship with no controls or fixed effects, Model 2 looks at the direct relationship with controls and no fixed effects, Model 3 looks at the direct relationship with no controls and with fixed effects, and finally Model 4 looks at the direct relationship with controls and with fixed effects.

Table 2

	(1) In(Deposits)	(2) In(Deposits)	(3) In(Deposits)	(4) In(Deposits)
HIDTA	0.10***	-0.01	0.13***	-0.03*
	(0.03)	(0.02)	(0.03)	(0.02)
Controls	No	Yes	No	Yes
S.E. Cluster	County	County	County	County
F.E.	None	None	Year State	Year State
N	34210	33638	34210	33638
R2	0.00	0.54	0.28	0.61

The model of interest is Model 4. The actual coefficient is statistically significant at the 10%. This shows that HIDA counties experience 3% less in deposits compared to non-HIDTA counties. This could indicate that drug and drug related activities have a negative spillover effect to the financial industry.

To test my second hypothesis, I look at deposits by a county's rural or non-rural designation. Figure 14 shows the natural log of branch deposits per 1,000 inhabitants is larger in completely rural counties compared to mostly rural and mostly urban. The figure shows the minimum, lower quartile, median, upper quartile, and max values of the natural log of branch deposits per 1,000 inhabitants for counties designated as completely rural (orange), mostly rural (green), and mostly urban (blue). Interestingly, the natural log of branch deposits per 1,000 inhabitants is larger in completely rural counties.

Figure 14
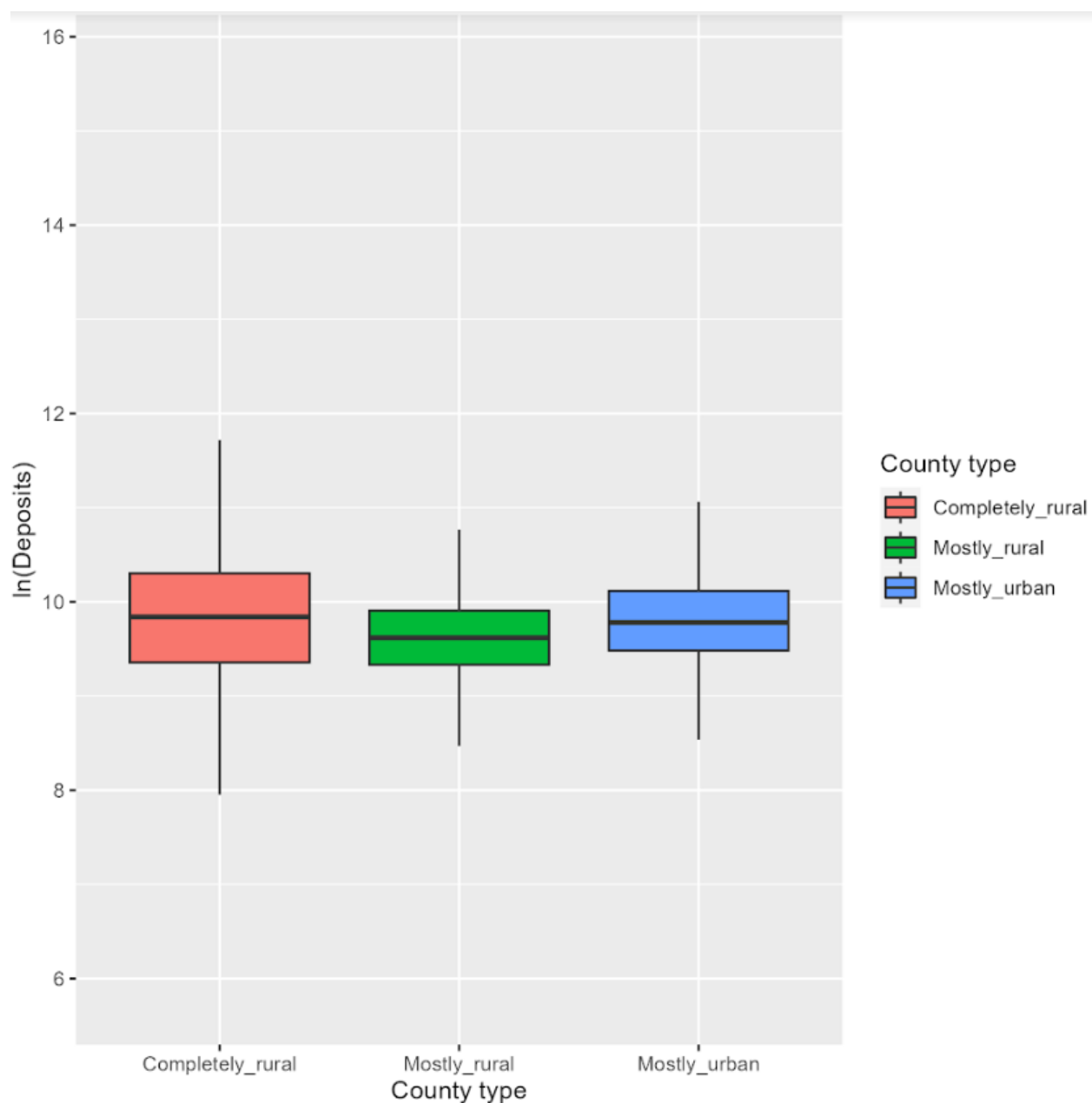
To test whether the difference in the mean of the natural log of branch deposits per 1,000 inhabitants is statistically significant between completely rural, mostly rural, and mostly urban counties, I use a Kruskal-Wallis Test (similar to an ANOVA). The reasoning behind the sample has more than two groups and is not normally distributed. The difference in the mean between the three groups are statistically significant (see Table 3).

Table 3

	Completely Rural	**Mostly Rural**
Mostly Rural	<0.001***	-
Mostly Urban	0.018**	<0.001***

Table 4 shows how the variables completely rural areas and mostly rural areas compare to mostly urban areas affect deposits. Model 1 looks at the direct relationship with no controls and no fixed effects. Model 2 looks at the direct relationship with controls and no fixed effects. Model 3 looks at the direct relationship with no controls and with fixed effects. Model 4 looks at the direct relationship with controls and with fixed effects.

Table 4

	(1) *ln*(Deposits)	(2) *ln*(Deposits)	(3) *ln*(Deposits)	(4) *ln*(Deposits)
Completely rural	-0.03	-0.08***	-0.16***	-0.04
	(0.03)	(0.03)	(0.03)	(0.03)
Mostly rural	-0.22***	0.01	-0.17***	0.03*
	(0.02)	(0.02)	(0.02)	(0.02)
Controls	No	Yes	No	Yes
S.E. Cluster	County	County	County	County
F.E.	Year State	Year State	Year State	Year State
N	34206	33638	34206	33638
R2	0.03	0.54	0.29	0.61

Completely rural is not statistically significant but mostly rural is statistically significant at the 10%. There is no difference in the natural log of deposits per 1,000 inhabitants between completely rural and mostly urban counties. However, mostly rural counties experience a little over 3% more deposits per 1,000 inhabitants. This shows an interesting difference in banking behaviors.

Figure 15 shows that the largest disparity between HIDTA and non-HIDTA counties is in completely rural counties. The figure shows the minimum, lower quartile, median, upper quartile, and max values of the natural log of branch deposits per 1,000 inhabitants for counties designated as completely rural, mostly rural, and mostly urban based on their HIDTA designation.

Figure 15

I use Equation 3, to estimate the effect a HIDTA completely rural and a HIDTA mostly rural county on deposits. Table 5 shows how HIDTA in completely rural and mostly rural areas behave compared to HIDTA in mostly urban. Model 1 looks at the relationship with no controls

and no fixed effects. Model 2 looks at the relationship with controls and no fixed effects. Model 3 looks at the relationship with no controls and with fixed effects. Model 4 looks at the relationship with controls and with fixed effects
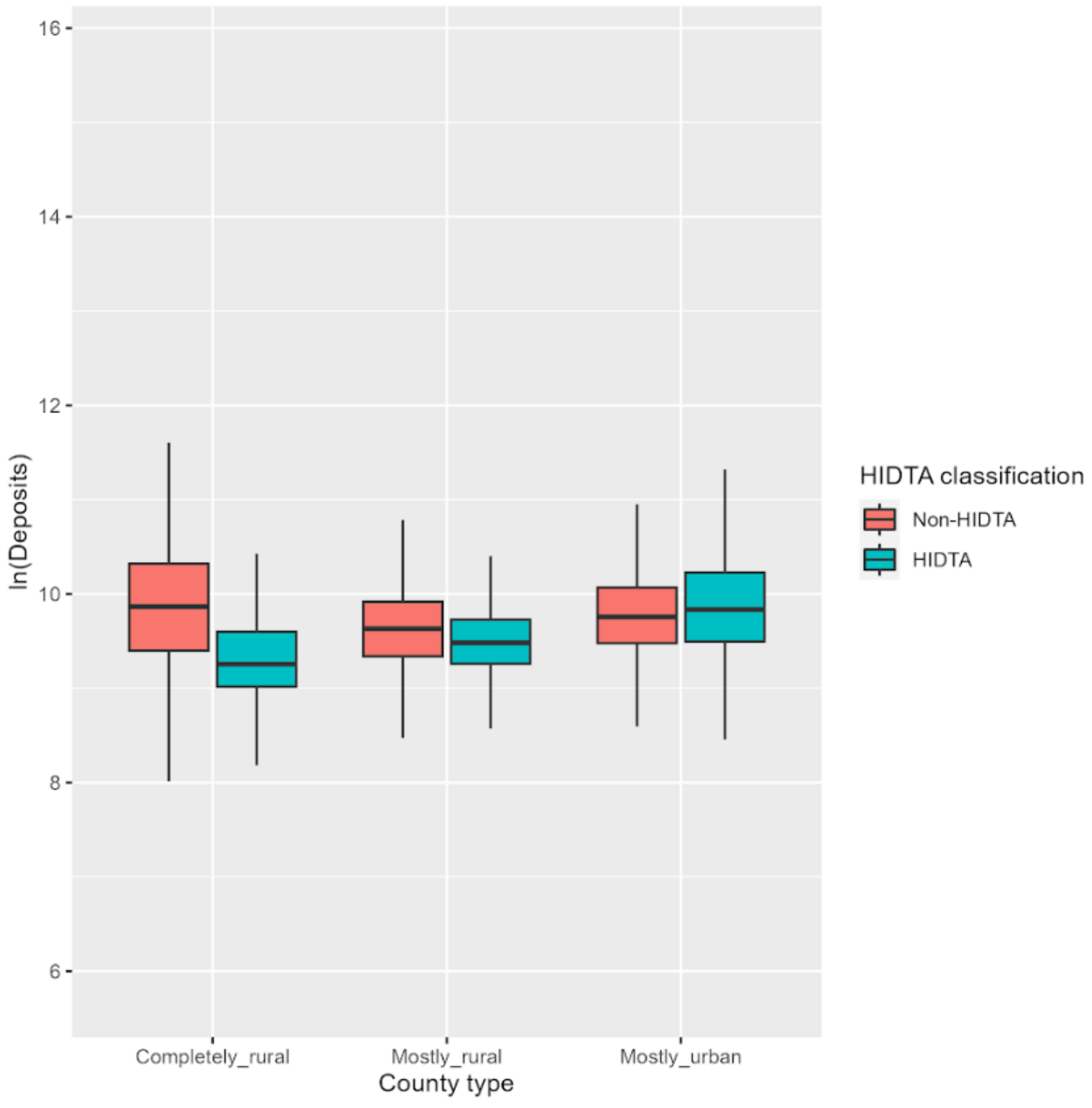
Table 5

	(1) In(Deposits)	(2) In(Deposits)	(3) In(Deposits)	(4) In(Deposits)
HIDTA	0.14***	0.03	0.13***	0.02
	(0.03)	(0.02)	(0.03)	(0.02)
Completely_rural	0.04	-0.07**	-0.11***	-0.03
	(0.03)	(0.03)	(0.03)	(0.03)
Mostly_rural	-0.16***	0.02	-0.12***	0.05**
	(0.02)	(0.02)	(0.02)	(0.02)
HIDTA * Mostly_rural	-0.27***	-0.13***	-0.25***	-0.16***
	(0.06)	(0.04)	(0.05)	(0.03)

Controls	No	Yes	No	Yes
S.E. Cluster	County	County	County	County
F.E.	Year State	Year State	Year State	Year State
N	34206	33638	34206	33638
R2	0.04	0.54	0.30	0.61

HIDTA in completely rural is -0.18, while HIDTA in mostly rural is -0.09. The decrease in deposits is a lot more for completely rural than mostly rural. Decrease in deposits is less for mostly rural compared to completely rural. HIDTA designation negatively affects the deposit behavior which might result in less money banks have to lend out as loans, especially in completely rural areas.

Table 6 shows the effect on deposits when I split my sample based on a high and low presence of community banks and small banks.

Table 6

	(1) Small_banks Below Median	(2) Small_banks Above Median	(3) Community_banks Below Median	(4) Community_banks Above Median
HIDTA	-0.08***	0.02***	-0.06***	0.05***
	(0.01)	(0.01)	(0.01)	(0.00)
Completely_rural	-0.11***	-0.05**	-0.09***	-0.00
	(0.00)	(0.01)	(0.01)	(0.01)
Mostly_rural	-0.04***	0.09***	-0.03***	0.10***
	(0.00)	(0.00)	(0.01)	(0.01)
HIDTA * Completely_rural	-0.09***		-0.12***	0.31***
	(0.02)		(0.01)	(0.03)
HIDTA * Mostly_rural	-0.04**	-0.13***	-0.08***	-0.12***
	(0.01)	(0.01)	(0.01)	(0.01)
Controls	Yes	Yes	Yes	Yes
S.E. Cluster	County	County	County	County
F.E.	Year State	Year State	Year State	Year State
N	34206	33638	34206	33638
R2	0.04	0.54	0.30	0.61

This model shows that community banks help shield the negative effects of drug activity. This could be because they have a stronger relationship in their community.

Figure 16 shows the control (counties that were HIDTA designated at the beginning of the sample period) and the treatment (HIDTA designation was removed in the later years). This seems to show that the median value of the natural log of branch deposits per 1,000 inhabitants improves after the HIDTA designation is removed. The figure shows the minimum, lower quartile, median, upper quartile, and max values of the natural log of branch deposits per 1,000 inhabitants for counties designated as completely rural, mostly rural, and mostly urban based on their HIDTA treatment.

Figure 16
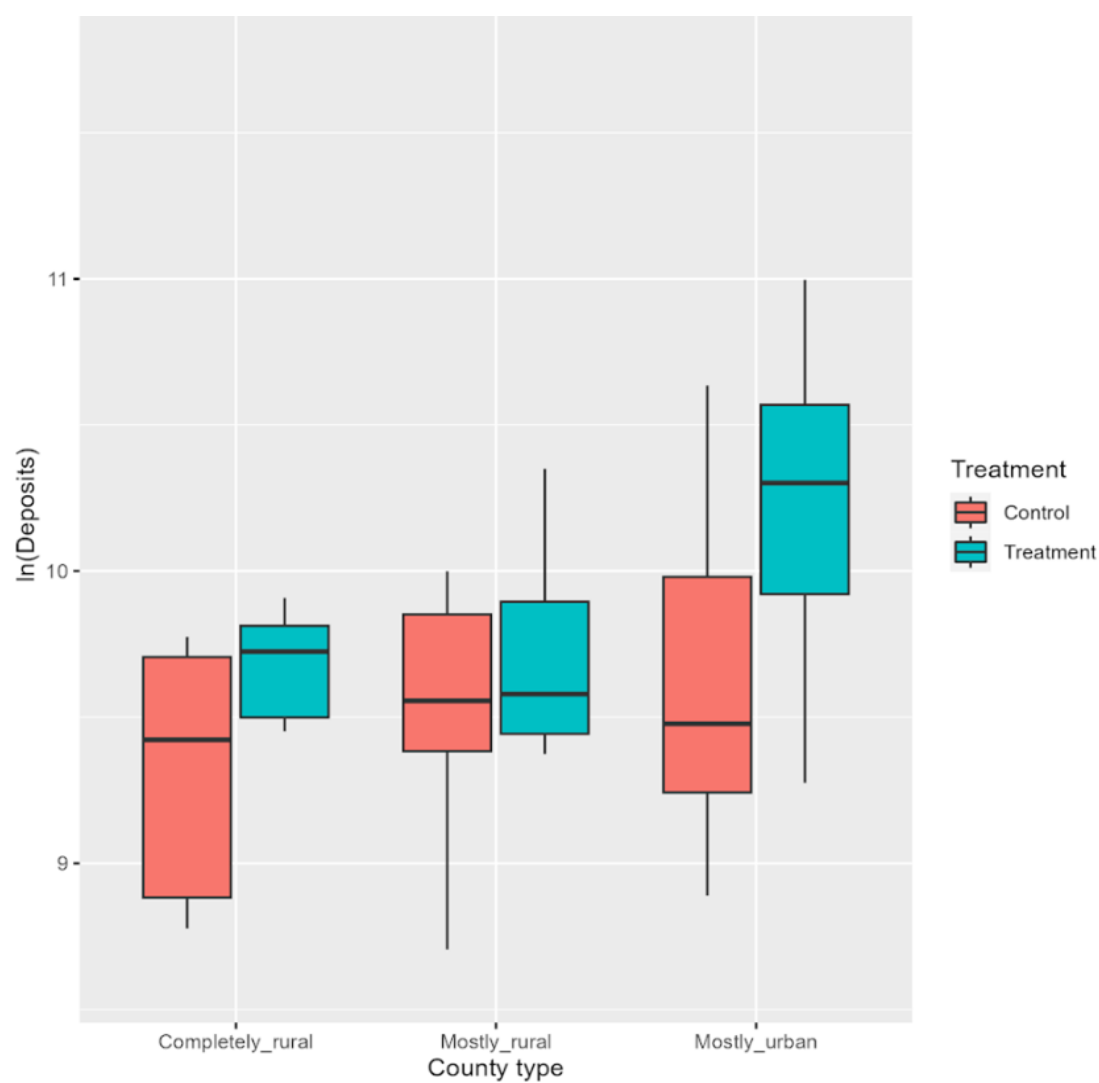
I have found that deposits do increase once a county that was HIDTA drops the designation. This could signal that HIDTA possibly dismantled drug operations in the county and thus that spilled over into the financial sector.

Conclusion

There is a statistical significance that shows that HIDTA counties do hurt the bank deposits. This supports the hypothesis that the HIDTA designation negatively influences financial institution behavior. On top of that, it also hurts completely rural areas more than mostly rural or mostly urban. This supports the second hypothesis that financial institution behavior is statistically different in rural versus non-rural communities. It was found that a higher number of community banks lessens the negative impacts of drug activities which supports the third hypothesis. Finally, it is found that the median deposits improve in a county once they stop being a HIDTA county. This supports the final hypothesis that the elimination of HIDTA designation will positively influence banking behavior. Overall, this supports the research question.

Appendix

Small Bank Definition:

Federal Deposit Insurance Corporation (FDIC) and Federal Reserve defines a small bank if "as of December 31 of either of the prior two calendar years [the institution] had assets of less than [a certain asset threshold] (FFIEC, 2021)." Currently less than $1.322 billion.

Community Bank Definition:

Table 7

Includes	Excludes

Any organization with:
● No loans or no core deposits
● Foreign Assets > 10% of total assets
● More than 50% of assets in certain specialty banks, including:
   ○ credit card specialists
   ○ consumer non bank banks[1]
   ○ industrial loan companies
   ○ trust companies
   ○ bankers' banks
	All remaining banking organizations with:
	● Total assets < indexed size threshold[2]
	● Total assets > indexed size threshold, where:
	   ○ Loan to assets > 33%
	   ○ Core deposits to assets > 50%
	   ○ More than 1 office but no more than the indexed maximum number of offices.[3]
	   ○ Number of large MSAs with offices < 2
	   ○ Number of states with offices < 3
	   ○ No single office with deposits > indexed maximum branch deposit size.[4]

[1] Consumer nonbank banks are financial institutions with limited charters that can make commercial loans or take deposits, but not both (FDIC, 2020)	[2] Asset size threshold indexed to equal $250 million in 1985 and $1 billion in 2010. [3] Maximum number of offices indexed to equal 40 in 1985 and 75 in 2010. [4] Maximum branch deposit size indexed to equal $1.25 billion in 1985 and $5 billion in 2010.

Rural Community Definition:

What exactly defines a rural community? To determine what was rural, the Census Bureau decided to define what was urban, and designate everything else as rural. The Census Bureau defines an urban community by using population density, population thresholds, land use and distance. In the 2000s, they defined two areas of urbanization, urbanized areas and urban clusters. Urbanized areas have 50,000 or more people while urban clusters have at least 2,500 but fewer than 50,000 people. Next, an urban area must have a density of 1000 people per square mile. Starting in 2010, the Census Bureau started identifying areas such as airports that should be included in the urban designation. An airport must have a minimum of 2,500 passengers annually and be within a half mile of other urban territory (U.S. Census Bureau, 2016). Finally, distance is taken into consideration. There are instances where urban development is not continuous, so the Census Bureau allows what's called hop and jump criteria. "The hop criteria allows for areas up to half a mile along a road corridor (with multiple hops) to be included. The jump criteria allows for the inclusion of areas up to 2.5 miles, but only one jump along a road" (U.S. Census Bureau, 2016).

Full regression tables

Table 8

Minority_Asian		0.02***		0.02***
		(0.01)		(0.01)
Minority_Native Hawaiian/Pacific Islander		-0.08***		-0.07
		(0.03)		(0.05)
Minority_Other		-0.00		0.00
		(0.00)		(0.00)
Minority_Two/More		-0.01**		-0.02***
		(0.00)		(0.00)
Minority_Hispanic		-0.00***		-0.00

		(0.00)		(0.00)
ln(Household_income)		-0.11		-0.21**
		(0.07)		(0.07)
ln(GDP)		0.26***		0.22***
		(0.03)		(0.03)
ln(Establishments)		0.01***		0.02***
		(0.00)		(0.00)
Unemployment_rate		-0.04***		-0.02***
		(0.00)		(0.00)
Unemployment_growth		0.29***		0.08***
		(0.01)		(0.01)
Poverty		0.01**		0.00
		(0.00)		(0.00)
Education_<HS		0.00		0.00
		(0.00)		(0.00)
Branches		0.86***		0.65***
		(0.05)		(0.06)
S.E. Cluster	County	County	County	County
F.E.	None	None	Year State	Year State

N	34210	33638	34210	33638
R2	0.00	0.54	0.28	0.61

Table 9

		(0.00)		(0.00)
Minority_Asian		0.02***		0.02***
		(0.01)		(0.01)
Minority_Native Hawaiian/Pacific Islander		-0.08***		-0.06
		(0.03)		(0.05)
Minority_Other		-0.00		0.00
		(0.00)		(0.00)
Minority_Two/More		-0.01**		-0.01***
		(0.00)		(0.00)
Minority_Hispanic		-0.00***		-0.00

		(0.00)		(0.00)
ln(Household_income)		-0.10		-0.20**
		(0.07)		(0.07)
ln(GDP)		0.25***		0.22***
		(0.03)		(0.03)
ln(Establishments)		0.01***		0.02***
		(0.00)		(0.00)
Unemployment_rate		-0.04***		-0.02***
		(0.00)		(0.00)
Unemployment_growth		0.29***		0.08***
		(0.01)		(0.01)
Poverty		0.01**		0.00
		(0.00)		(0.00)
Education_<HS		0.00*		0.00
		(0.00)		(0.00)
Branches		0.87***		0.66***
		(0.05)		(0.06)
S.E. Cluster	County	County	County	County
F.E.	Year State	Year State	Year State	Year State
N	34206	33638	34206	33638
R2	0.03	0.54	0.29	0.61

Table 10

	(1) ln(Deposits)	(2) ln(Deposits)	(3) ln(Deposits)	(4) ln(Deposits)
HIDTA	0.14***	0.03	0.13***	0.02
	(0.03)	(0.02)	(0.03)	(0.02)
Completely_rural	0.04	-0.07**	-0.11***	-0.03
	(0.03)	(0.03)	(0.03)	(0.03)
Mostly_rural	-0.16***	0.02	-0.12***	0.05**
	(0.02)	(0.02)	(0.02)	(0.02)
HIDTA * Completely_rural	-0.63***	-0.07	-0.42***	-0.17*
	(0.08)	(0.08)	(0.09)	(0.08)
HIDTA * Mostly_rural	-0.27***	-0.13***	-0.25***	-0.16***
	(0.06)	(0.04)	(0.05)	(0.03)
ln(Population)		0.10***		0.12***
		(0.01)		(0.01)
Minority_Black		-0.00***		-0.00***
		(0.00)		(0.00)
Minority_American Indian/Alaskan Native		-0.00		-0.00
		(0.00)		(0.00)
Minority_Asian		0.02***		0.02***
		(0.01)		(0.01)

Minority_Native Hawaiian/Pacific Islander		-0.08***		-0.07
		(0.03)		(0.05)
Minority_Other		-0.00		0.00
		(0.00)		(0.00)
Minority_Two/More		-0.01**		-0.01***
		(0.00)		(0.00)
Minority_Hispanic		-0.00***		-0.00
		(0.00)		(0.00)
ln(Household_income)		-0.09		-0.20**
		(0.07)		(0.07)
ln(GDP)		0.26***		0.22***
		(0.03)		(0.03)
ln(Establishments)		0.01***		0.02***
		(0.00)		(0.00)
Unemployment_rate		-0.04***		-0.02***
		(0.00)		(0.00)
Unemployment_growth		0.29***		0.08***
		(0.01)		(0.01)
Poverty		0.01***		0.00

		(0.00)		(0.00)
Education_<HS		0.00*		0.00
		(0.00)		(0.00)
Branches		0.87***		0.66***
		(0.05)		(0.06)
S.E. Cluster	County	County	County	County
F.E.	Year State	Year State	Year State	Year State
N	34206	33638	34206	33638
R2	0.04	0.54	0.30	0.61

Full Descriptive statistics

Table 11

	0 / N	0 / Min	0 / Median	0 / Mean	0 / Max	0 / SD	1 / N	1 / Min	1 / Median	1 / Mean	1 / Max	1 / SD
ln(Deposits)	28142	5.79	9.72	9.72	13.42	0.56	6068	7.01	9.74	9.83	15.74	0.68
ln(Population)	28142	6.04	9.96	9.97	14.17	1.21	6068	6.58	11.90	11.82	16.13	1.50
Minority_Black	28142	0.00	1.80	8.98	87.80	14.91	6068	0.00	4.30	9.42	79.50	12.66
Minority_American Indian/Alaskan Native	28142	0.00	0.30	1.77	87.80	6.83	6068	0.00	0.40	1.21	83.20	4.10
Minority_Asian	28142	0.00	0.50	0.85	38.30	1.46	6068	0.00	1.60	3.16	44.80	4.94
Minority_Native Hawaiian/Pacific Islander	28142	0.00	0.00	0.06	5.60	0.17	6068	0.00	0.00	0.18	13.70	0.91
Minority_Other	28142	0.00	0.70	1.70	57.00	3.18	6068	0.00	1.90	3.76	58.80	4.98
Minority_Two/More	28142	0.00	1.70	2.11	22.60	1.80	6068	0.00	2.50	3.06	29.50	2.70
Minority_Hispanic	28142	0.00	3.20	7.04	89.30	10.58	6068	0.00	8.50	16.66	99.20	20.59
ln(Household_income)	28142	9.88	10.73	10.73	11.71	0.24	6066	9.85	10.85	10.86	11.90	0.31
ln(GDP)	27688	9.07	10.49	10.52	15.82	0.52	5952	9.25	10.73	10.74	13.96	0.50
ln(Establishments)	28142	3.69	25.11	27.96	179.96	11.88	6068	7.51	26.35	27.89	181.33	10.35
Unemployment_rate	28138	1.07	5.73	6.28	25.80	2.84	6068	1.17	5.84	6.46	29.41	3.04
Unemployment_growth	28138	-0.57	-0.08	-0.01	4.52	0.26	6068	-0.47	-0.07	0.04	6.11	0.39
Poverty	28142	3.20	15.00	16.04	56.70	6.22	6068	2.60	14.80	15.71	47.00	6.66
Education_<HS	28142	0.00	15.00	1032.92	6377 4.00	2543 .47	6068	0.80	15.50	8141.73	62564 4.00	2724 8.10
Branches	28142	0.04	0.41	0.50	4.08	0.32	6068	0.06	0.29	0.32	1.39	0.14

Table 12

HIDTA Designation		completely rural / N	completely rural / Mean	completely rural / SD	mostly rural / N	mostly rural / Mean	mostly rural / SD	mostly urban / N	mostly urban / Mean	mostly urban / SD
0	ln(Depopsits)	7139	9.82	0.70	12055	9.62	0.49	8944	9.78	0.51
	ln(Population)	7139	8.65	0.82	12055	10.09	0.66	8944	10.86	1.13
	Minority_Black	7139	6.86	15.07	12055	9.89	15.51	8944	9.46	13.74
	Minority_American Indian/Alaskan Native	7139	2.40	8.46	12055	1.86	7.44	8944	1.15	3.78
	Minority_Asian	7139	0.40	1.25	12055	0.53	0.50	8944	1.64	2.05
	Minority_Native Hawaiian/Pacific Islander	7139	0.05	0.18	12055	0.04	0.14	8944	0.08	0.20
	Minority_Other	7139	1.31	3.22	12055	1.34	2.31	8944	2.48	3.94
	Minority_Two/More	7139	1.86	2.01	12055	1.98	1.79	8944	2.49	1.58
	Minority_Hispanic	7139	5.75	9.84	12055	5.23	7.66	8944	10.50	13.35
	ln(Household_income)	7139	10.68	0.23	12055	10.70	0.22	8944	10.81	0.25
	ln(GDP)	7139	10.54	0.69	11933	10.39	0.42	8616	10.69	0.42
	ln(Establishments)	7139	33.46	15.83	12055	24.47	8.08	8944	28.26	10.74
	Unemployment_rate	7139	5.79	3.05	12055	6.61	2.79	8944	6.23	2.65
	Unemployment_growth	7139	-0.02	0.23	12055	-0.02	0.25	8944	-0.00	0.30
	Poverty	7139	16.19	6.54	12055	16.55	6.06	8944	15.23	6.09
	Education_<HS	7139	237.59	417.52	12055	866.32	1324.29	8944	1892.75	4070.83
	Branches	7139	0.73	0.47	12055	0.43	0.21	8944	0.40	0.19
1	ln(Deposit)	285	9.33	0.44	950	9.49	0.42	4833	9.92	0.70

	ln(Population)	285	8.96	0.88	950	10.54	0.65	4833	12.24	1.32
	Minority_Black	285	1.07	1.41	950	3.87	5.50	4833	11.00	13.51
	Minority_American Indian/Alaskan Native	285	2.74	9.38	950	1.90	7.02	4833	0.99	2.44
	Minority_Asian	285	0.93	4.20	950	0.51	0.37	4833	3.81	5.25
	Minority_Native Hawaiian/Pacific Islander	285	0.09	0.33	950	0.05	0.13	4833	0.21	1.02
	Minority_Other	285	2.26	5.45	950	1.43	2.09	4833	4.31	5.21
	Minority_Two/More	285	2.67	3.70	950	2.25	2.34	4833	3.24	2.66
	Minority_Hispanic	285	13.38	24.71	950	5.94	9.01	4833	18.96	21.26
	ln(Household_income)	284	10.45	0.33	950	10.61	0.25	4832	10.93	0.28
	ln(GDP)	285	10.21	0.81	924	10.32	0.36	4743	10.85	0.43
	ln(Establishments)	285	26.68	21.46	950	22.30	8.60	4833	29.06	9.24
	Unemployment_rate	285	8.52	3.55	950	7.44	2.87	4833	6.15	2.95
	Unemployment_growth	285	-0.02	0.23	950	-0.00	0.28	4833	0.05	0.41
	Poverty	285	23.77	8.45	950	19.76	6.84	4833	14.44	5.80
	Education_<HS	285	410.60	610.14	950	1581.92	2203.50	4833	9887.06	30269.03
	Branches	285	0.39	0.22	950	0.37	0.17	4833	0.30	0.12

REFERENCES

2020 community banking study - FDIC: Federal Deposit Insurance Corporation. (2020, December). Retrieved March 15, 2023, from https://www.fdic.gov/resources/community-banking/report/2020/2020-cbi-study-full.pdf

2016 Small Business Credit Survey: Report on rural employer firms. Fed Small Business. (2017, December). Retrieved March 10, 2023, from https://www.fedsmallbusiness.org/survey/2017/report-on-rural-employer-firms

2022 Midwest HIDTA Threat Assessment. Midwest HIDTA. (2022, June). Retrieved March 10, 2023, from https://midwesthidta.org/resources

Advocacy, O. of. (2019, January 30). *Small businesses generate 44 percent of U.S. economic activity*. SBA's Office of Advocacy. Retrieved February 22, 2023, from https://advocacy.sba.gov/2019/01/30/small-businesses-generate-44-percent-of-u-s-economic-activity/

AG and food sectors and the economy. USDA ERS - Ag and Food Sectors and the Economy. (2023, January). Retrieved March 10, 2023, from https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/ag-and-food-sectors-and-the-economy/#:~:text=Agriculture%20and%20its%20related%20industries,percent%20of%20total%20U.S.%20employment.

Agca, Senay, Pablo Slutzky, and Stefan Zeume. 2020. "Anti-Money Laundering Enforcement, Banks, and the Real Economy." *SSRN Electronic Journal*. doi:10.2139/ssrn.3555123.

Bank secrecy act (BSA). OCC. (2019, March 25). https://www.occ.treas.gov/topics/supervision-and-examination/bsa/index-bsa.html

Centers for Disease Control and Prevention. (2022, December 21). *Products - data briefs -*

number 457 - December 2022. Centers for Disease Control and Prevention. Retrieved February

22, 2023, from

https://www.cdc.gov/nchs/products/databriefs/db457.htm#:~:text=System%2C%20

Mortality%20File.-,Summary,increased%20from%2017.1%20to%2019.6

Chapter 1 - defining the Community Bank - Federal Deposit Insurance ... (2020, December 16).

Retrieved February 22, 2023, from https://www*2020 community banking study - FDIC: Federal*

Deposit Insurance Corporation. (2022, May 9). Retrieved February 22, 2023, from

https://www.fdic.gov/resources/community-banking/report/2020/2020-cbi-study-full.pdf

.fdic.gov/resources/community-banking/report/2012/2012-cbi-study-1.pdf

Coomber, K., Toumbourou, J. W., Miller, P., Staiger, P. K., Hemphill, S. A., & Catalano, R. F.

(2011). Rural Adolescent Alcohol, tobacco, and illicit drug use: A comparison of students in

Victoria, Australia, and Washington State, United States. *The Journal of Rural Health*, *27*(4),

409–415. https://doi.org/10.1111/j.1748-0361.2010.00360.x

Donnermeyer, J. F., Weisheit, R., & Brownstein, H. (2016). Drug Production in the rural context.

In *The Routledge International Handbook of Rural Criminology*. essay, Routledge.

Drug overdose deaths in the United States, 2001–2021 - cdc.gov. (n.d.). Retrieved February 22,

2023, from https://www.cdc.gov/nchs/data/databriefs/db457.pdf

Drug seizure statistics FY2023. U.S. Customs and Border Protection. (2023, February 8).

Retrieved February 22, 2023, from https://www.cbp.gov/newsroom/stats/drug-seizure-statistics

Explanation of the community reinvestment act asset-size threshold change. (2021, December

16). Retrieved February 22, 2023, from

https://www.ffiec.gov/cra/pdf/2022_Asset_Size_Threshold.pdf

Fast facts about Agriculture & Food. American Farm Bureau Federation. (2020). Retrieved

February 22, 2023, from https://www.fb.org/newsroom/fast-facts

HIDTA. DEA. (2023, February 22). Retrieved February 22, 2023, from

https://www.dea.gov/operations/hidta

Hidtaprogram. (2021). Retrieved March 9, 2023, from

https://www.hidtaprogram.org/summary.php

Infographic: Rural entrepreneurship. SCORE. (2021, July). Retrieved March 10, 2023, from

https://www.score.org/resource/infographic/infographic-rural-entrepreneurship

Liberti, J. M., & Petersen, M. (2018). Information: Hard and soft. https://doi.org/10.3386/w25075

National Archives and Records Administration. *(2011, May 24). How illicit drug use affects*

business and the economy. National Archives and Records Administration. Retrieved February

22, 2023, from https://obamawhitehouse.archives.gov/ondcp/ondcp-fact-sheets/how-illicit-drug-

use-affects-business-and-the-economy

National Archives and Records Administration. (2023). *Strengthening the rural economy - the*

current state of Rural America. National Archives and Records Administration. Retrieved

February 22, 2023, from

https://obamawhitehouse.archives.gov/administration/eop/cea/factsheets-reports/strengthening-

the-rural-economy/the-current-state-of-rural-america

Oregon Office of Rural Health. OHSU. (2022). Retrieved February 22, 2023, from

https://www.ohsu.edu/oregon-office-of-rural-health/about-rural-and-frontier-

data#:~:text=Using%202021%20Claritas%20data%2C%2033,(2%2C789%2C625)%20in%20ur

ban%20areas.

Overview. USDA ERS - Rural Classifications. (2022, November 19). Retrieved February 22, 2023, from https://www.ers.usda.gov/topics/rural-economy-population/rural-classifications/#:~:text=open%20countryside%2C,market%20areas%20(metropolitan%20areas).

Perspectives from main street: Bank branch access in rural communities ... (2019, November). Retrieved March 10, 2023, from https://www.federalreserve.gov/publications/files/bank-branch-access-in-rural-communities.pdf

Quarterly banking profile. FDIC. (2023, March). Retrieved April 23, 2023, from https://www.fdic.gov/analysis/quarterly-banking-profile/index.html

Rural population trends. USDA ERS - Rural Population Trends. (2018). Retrieved February 22, 2023, from https://www.ers.usda.gov/amber-waves/2019/february/rural-population-trends/

Speech by vice chairman for supervision quarles on trends in urban and rural community banks. Board of Governors of the Federal Reserve System. (2018, October). Retrieved March 9, 2023, from https://www.federalreserve.gov/newsevents/speech/quarles20181004a.htm

Sutton, J., & Gibson, C. (2013, July 15). *University of Oregon Libraries*. Oregon High Intensity Drug Trafficking Area (HIDTA) Program: Threat Assessment, Counter-drug Strategy, Position, and Conclusion. Retrieved February 22, 2023, from http://hdl.handle.net/1794/13614

U.S. Census Bureau. (2016) *Defining Rural at the U.S. Census Bureau.* Michael Ratcliffe, Charlynn Burd, Kelly Holder, and Alison Fields

U.S. Department of Justice, *The Economic Impact of Illicit Drug Use on American Society 9–11 (2011). Washington, D.C.*

U.S. Dept. of Health and Human Services, *Substance Abuse and Mental Health Services Administration, Center for Behaviorial Health Statistics and Quality, Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings (2011). Rockville, MD.*

USDA Economic Research Service. (2022) *Rural America at a Glance.* James C. Davis, Anil Rupasingha, John Cromartie, and Austin Sanders

Www.whitehouse.gov. (2022, January 10). Retrieved February 22, 2023, from https://www.whitehouse.gov/wp-content/uploads/2022/12/HIDTA-Annual-Report-to-Congress-2022.pdf

Www.whitehouse.gov. (n.d.). Retrieved April 19, 2023, from https://www.whitehouse.gov/wp-content/uploads/2022/12/HIDTA-map-July-2022.pdf