

AN ECONOMIC ANALYSIS OF CONTEMPORARY LOCAL CURRENCIES IN
THE UNITED STATES

by

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I. Introduction

Beginning with Ithaca, New York in 1991, over 80 communities in the United States introduced printed local currencies (Figure 1). This is a curious phenomenon. Over the same period of time, the United States economy has been relatively stable by historical standards, electronic payments have grown sharply, and 13 European countries abandoned their national currencies and adopted a common currency, the euro. Why did so many communities in the United States introduce their own currencies?

Local paper currency is a subset of the community currency movement that emerged in a number of countries during the 1980's and 1990's. One indication of the extent of the community currency movement is the establishment in 1998 of the online, peer-reviewed *International Journal of Community Currency Research*. Proponents argue that, as part of the anti-globalization movement, community currency systems empower the economically marginalized, foster social relationships, revitalize local economies by keeping money circulating locally rather than flowing out, and promote ecological sustainability (Collom, 2005, and Solomon, 1996, p. 31). It could also be argued that communities printing their own money receive seigniorage (profits from creating money).

It appears, however, that local currencies have been unsuccessful in revitalizing local economies in the United States. Where data are available, the seigniorage from local money has been minimal. The per capita income of communities which printed their own currencies grew no faster during the 1990s than other communities. Fewer than 20 percent of these local currency systems remain active. These observations suggest that local currencies are not an effective means for economic development in times of economic stability. Although the overall economic benefits appear to be small, there are other reasons people use local currencies.

II. Historical Perspectives on Community Currencies

The emergence of community currencies in the 1980's and 1990's had a precedent in the use of scrip during the first half of the twentieth century in the United States. Scrip is a localized medium of exchange that is redeemable for goods or services sold by the issuer. Scrip was issued by thousands of coal mining companies, and hundreds of companies in other industries, such as agriculture, canneries, lumber, and paper (Timberlake, 1987).

Enterprises such as coal mining and lumbering were often located in isolated communities with few businesses providing specialized services such as banking services. Mining companies built residences, churches, schools, and water works, opened company stores, and issued scrip to be used in lieu of ordinary money. Mining company scrip was essentially an interest-free loan between paydays. Scrip was issued at the request of the miner and deducted from his next paycheck. The miner could buy household goods at the company store with the scrip or redeem it in standard money on the next payday. Scrip's alternative in an urban setting was the pawn shop or loan shark (Timberlake, 1987).

Scrip was widely used in the United States during the depression years 1932-1935. "Depression" scrip was issued (1) by local governments due to decreases in tax revenues, (2) by

chambers of commerce after local bank failures to increase their members' share of business, (3) by "home-owned stores as a weapon against . . . chain-store competition," (4) by "barter groups as a means by which the unemployed could more conveniently exchange services," and (5) by charitable organizations to needy persons (Harper, 1948 as reported in Timberlake, 1987).

Collom (2005) identified three types of contemporary community currency systems in operation worldwide: Local Exchange and Trading Systems (LETS), Time Banks, and Hours systems (printed local currencies). LETS were created in British Columbia in 1983 and have been the most widespread form of community currency schemes. LETS are modern bartering systems. Offers and requests for goods and services are published in a list distributed to members. Transactions between members create credits for the seller and debits for the buyer in units of the national currency. Transactions are reported via telephone, the Internet, or credit notes (checks) to a coordinator who records them in the members' accounts. Most systems have debit and credit limits to discourage free-loading or hoarding. Although uncommon in the United States, in 2000 it was reported that over 2000 communities worldwide had established LETS, but it appears that a substantial proportion of LETS have ceased operations.

Time Banks originated with the Time Dollar Network in Miami, Florida in 1983. Time Banks credit members with a Time Dollar for each hour of service provided to another member, and debit their computerized accounts for each hour of service received. In effect, Time Banks are barter systems restricted to trading hours of service, where each hour of service is equally valued regardless of the skill of the provider. Time Banks USA currently lists 56 Time Dollar networks in the United States and over 200 worldwide.

Unlike LETS and Time Banks where no physical currency changes hands, Hours systems use a paper currency. Hours systems get their name from the first of these systems, Ithaca Hours, established in Ithaca, New York in 1991. One Ithaca Hour can be purchased at a fixed rate of US\$10 because this was the approximate average hourly wage in the area at the time the system was started. The use of printed currency makes the administrative costs of Hours systems lower than those of LETS and Time Banks. The latter require every transaction between members to be accounted for. With paper currency, no transactions are recorded, although there are printing costs and costs of recruiting businesses to accept local currency, as well as the inconvenience of carrying and handling two different currencies.

Collom (2005) found 82 local paper currency systems that had been attempted in 80 United States cities between 1991 and 2004. Of those, only 17 remained active in 2004. A recent internet search found only 10 of these 17 local currency systems to be functional. Two more systems have been established recently: BerkShares in Berkshire County, Massachusetts, and Trade Community Currency in Nevada County, California (Table 1).

A few additional types of currency systems are listed in the "2006 Annual Report of the Worldwide Database of Complementary Currency Systems" (DeMeulenaere, 2007). Complementary currencies are "currencies that operate separately or in combination with the national currency, and are not limited to a specific geographical area (DeMeulenaere, 1998). Admittedly, the data "do not reflect the state of the complementary currency movement as a whole" as the currency systems are relied on to submit their information to the database. There

is one noteworthy system in the database: the Liberty Dollar. The Liberty Dollar is private currency backed by silver and gold. It comes in the form of notes of various denominations and coins. Introduced in 1998, its purpose is to provide an inflation-proof currency in the United States (von NotHaus, 2007). There are 62 Liberty Dollar systems registered in the Complementary Currency database.

Federal law does not prohibit local paper currency, but its use is restricted, and private coinage is prohibited. “Nothing in the Constitution barred private manufacture of coin and through the first half of the nineteenth century Congress did not act against private coinage . . . General contract law allowed any contractor to issue his notes and circulate them so far as the market would take them” (Hurst, 1973, p. 37). In 1862, however, Congress outlawed any note, memorandum, token, or other obligation “for a less sum than one dollar intended to circulate as money or to be received or used in lieu of lawful money of the United States” (Timberlake, 1987). Then in 1864, Congress prohibited the issue of any private coins intended to circulate as “current money,” defined as a general medium of exchange (Hurst, 1973, p. 37, note 21). Under these statutes, local paper currencies such as Ithaca Hours are allowed as long as the minimum value is one dollar or more and the notes are dissimilar to the lawful currency of the United States (Solomon, 1996, p. 98-99). On September 13, 2006, however, the United States Mint issued a “Warning” that it was illegal to use the Liberty Dollar. Liberty Services, the organization that promotes and distributes the Liberty Dollar, has filed suit against the U.S. Mint to enjoin the government from claiming that the use of Liberty Dollar is a 'federal crime' (von NautHaus, 2007).

The present study focuses on the economics of printed local currencies (Hours systems). To better understand how these systems work and why so many have failed, the original and still active contemporary local currency system, Ithaca Hours, will be described in further detail.

III. Ithaca Hours

Ithaca Hours is a local currency established in 1991 with a fixed value of \$10 per Ithaca Hour. Hours are not backed by any commodity such as gold, nor are they redeemable in dollars. The current denominations of Ithaca Hours are One Hour, One-Half Hour, One-Quarter Hour, One-Eighth Hour, and One-Tenth Hour. A Two Hour note is still in circulation but is no longer being printed. Each denomination is imprinted with the motto, “In Ithaca We Trust,” and an image representing some aspect of Ithaca, New York. For example, Lick Brook Falls is depicted on the One-Hour note, two children on the One-Quarter Hour note, and a salamander on the One-Eighth Hour note (Figure 2). The One-Tenth Hour note, equivalent to \$1, was introduced five years ago to facilitate making change. To reduce production and handling costs, it was suggested at the time that the One-Eighth Hour note, worth \$1.25, be discontinued. The suggestion, however, was met with opposition. Some users did not want to see the salamander go. The opposition prevailed, and the salamander was saved (Burke, 2007).

The stated purpose of Ithaca Hours is to promote “local economic strength and community self-reliance in ways which will support economic and social justice, ecology, community participation and human aspirations in and around Ithaca, New York. Ithaca Hours help to keep money local, building the Ithaca economy. It also builds community pride and

connections.” These aims resonate with some of the reasons for issuing Depression scrip in the 1930’s. Over 900 participants publicly accept Ithaca Hours for goods and services, including a hospital and a credit union. Some local employers and employees have agreed to pay or receive part of wages in Ithaca Hours (Ithaca Hours, Inc., 2007).

Although anyone can exchange Ithaca Hours, individuals and businesses that pay a \$10 fee receive 2 Hours (worth \$20) and a listing in the Ithaca Hours Directory, indicating that they accept some amount of Ithaca Hours for the goods or services provided. The Directory is the system’s “yellow pages” and is distributed throughout Tompkins County and on the system’s web site. Low-cost publicity and a small amount of local currency are incentives for businesses to participate in the system.

Disbursements to those who pay for a listing in the Directory are one way that new Hours get into circulation. Small grants to community organizations, loans to business participants, and paying printing and administration costs also put Hours into circulation (Ithaca Hours, Inc., 2006). For example, last year 30 Hours were given to support the Fall Creek Elementary School’s reading program. Another 30 Hours were granted to Catholic Charities for building repairs. In 2006, 566 new Hours worth \$5,660 were circulated through disbursements, community grants and system expenses. An additional 97.60 Hours worth \$976 were sold or exchanged for damaged notes (Feuer, 2007). It was estimated that in 2005 approximately 10,000 Hours worth \$100,000 circulated in Ithaca (Ju, 2005). The supply of Hours is controlled by the Circulation Committee of Ithaca Hours, Inc.

It is recognized that businesses must take in United States dollars to meet obligations outside of the Ithaca Hours system. Merchants are asked by officials of the system to accept only a quantity of Hours that they are able to spend in the local economy. For example, a credit union accepts Hours for 100 percent of any fees and up to one Hour per loan payment. To spend the Hours, the credit union gives preference to vendors who accept Hours in partial payment, pays staff members partially in Hours, and gives Hours as change (Chernikoff, 2007). In spite of the guidance offered, a problem that the system faces is the stockpiling of Hours at businesses. It can be difficult for larger businesses to spend Hours they receive. A food co-op, for example, is reported to have stockpiled \$20,000 worth of Hours, approximately one-fifth of the amount in circulation (Burke, 2007). The stockpiling of Hours threatens their acceptability at that establishment and therefore throughout the local economy.

For the first five years or so of its existence, the Ithaca Hours system had no formal structure. Upon request of the state government of New York, a non-profit organization, Ithaca Hours, Inc., was formed to manage the system. An eight-person Board of Directors is elected from the membership and meets on a monthly basis. The biggest tasks of the organization are to disburse the currency, to collect listing fees, and to update the directory. A part-time administrator was hired a few years ago to perform and direct some of the tasks, and at least 25 percent of the administrator’s pay is in Hours (Burke, 2007).

The largest annual expenses for Ithaca Hours, Inc. are for the administrator and other professional services (\$4,464 in 2006) and the Directory (\$2,899). The currency is printed in bulk every several years to reduce printing costs. The last printing was six or more years ago.

At that time, Hours worth \$50,000 were printed at a cost of approximately \$5,000, or 10 percent of the face value of the currency (Burke, 2007, and Feuer, 2007).

IV. Some Economics of Local Currencies and Evidence of Their Effects

Money is anything that is generally accepted as payment for goods and services or in the repayment of debt. Money benefits society by lowering the costs of transactions, which encourages specialization and raises the standard of living. Money accomplishes this by serving as a unit of account, which lowers the costs of price information and record-keeping, and by eliminating the double coincidence of wants necessary for barter. Like other assets, money is a store of value.

Many commodities have served as money throughout history, but gold and silver were most common, frequently in the form of coins. In recent centuries, representative paper money (redeemable in gold or some other commodity), paper fiat money (money by government decree), bank deposit checks, and electronic money such as stored value cards have been widely used as means of payment (Hubbard, 2005, p. 7-21).

The forms of money have evolved due to improvements in the characteristics of money and government intervention the monetary system. Desirable characteristics of money are wide use, portability, homogeneity (standardized quality), divisibility, durability, and stability in value (Simpson, 1976, p.19). Coins are more standardized than metals, paper currency more portable than coins. Checks are more secure and more portable for large transactions than currency, but are more cumbersome for small transactions. Electronic money is easy to store and fast to transmit, but unlike cash leaves a record of transactions, which is undesirable for persons wishing to evade taxes or to engage in illegal activities.

Governments involved themselves in early monetary societies to certify the purity and weight of coins. This resulted in coins being more readily acceptable which stimulated trade. Governments also sought seigniorage as a source of public revenues. Especially during war when their expenditures grew rapidly, governments obtained seigniorage by debasement (a reduction in the value of metal contained in coins), issuing token coins (coins whose face value is greater than the value of the metal in the coin), and issuing paper fiat money. The seigniorage from printing fiat money is nearly 100 percent (Simpson, 1976, p.24-25).

Government fiat money plays an important role in the monetary systems of most nations today. Fiat money has the advantage over representative paper currency of freeing up a monetary commodity for other uses. Paper currency redeemable in gold or some other commodity has the additional disadvantage of subjecting the money stock to forces in the commodity market, such as mineral discoveries, mining technology, commercial and industrial demand, and policies of other nations concerning the place of the commodity in their monetary systems (Hurst, 1973, p. 67). However, because the seigniorage from fiat money is so large, governments may be tempted to issue it at such a high rate as to cause inflation, which reduces the value of money and, if high enough, leads to a substitution of another currency for the domestic currency (Feige, 2003). Maintaining a stable value of money requires that

governments exercise restraint in issuing fiat money and regulate the supply of bank deposits and other forms of private money (Simpson, 1976, p. 25).

With this background in mind, let us turn to the question at hand: What explains the emergence and demise of so many printed local currencies in the United States during the 1990s and 2000s?

Over the past 20 years, theorists have studied dual-currency economies with monetary search models. These models feature trading frictions that lead traders to accept fiat currency. The basic assumptions of many search models are the absence of a double coincidence of wants, which implies that barter is not possible, an absence of credit, a lack of a smoothly functioning banking system, and a reliance on currency as the sole medium of exchange. These monetary search models are useful for studying currency acceptability in economies with unsophisticated payments systems or unstable banking systems (Craig and Waller, 2000).

Colacelli and Blackburn (2006) applied a monetary search model to analyze the use of a private fiat currency called the *crédito* in exchange clubs in Argentina during its national monetary problems in 2001-2002. They emphasize the scarcity of the national currency in explaining the emergence of the *crédito*. The money stock of Argentina declined nearly 18 percent in 2001. In July 2002, the unemployment rate soared to over 20 percent, and approximately 7 percent of the population was using *créditos* to trade in exchange clubs. This experience is similar to that of the United States with Depression scrip in the 1930s, although a smaller percentage of the United States population is estimated to have participated in self-help and barter organizations. Colacelli and Blackburn estimate that *crédito* use increased the gross domestic product of Argentina by 0.6 percent in 2002. The acceptability of *créditos* declined in 2003 after the government expanded unemployment insurance benefits and the supply of pesos increased.

Scarcity of money and high unemployment do not, however, explain the emergence of local currencies in the United States during the 1990s. The stock of money (M1) increased by 7.6 percent per year on average in the 1980s (December to December) and 3.5 percent per year in the 1990s. From 1983 to 2000, the United States economy experienced two long economic expansions separated by a mild recession in 1990-1991 (National Bureau of Economic Research, 2007). Neither does a high rate of inflation account for the appearance of local paper currencies in the 1990s. The rate of inflation has been low and fairly stable since 1982. The period of relative stability of the United States economy since the mid-1980s has been dubbed "the Great Moderation" (Bernanke, 2004).

Another possible explanation for the emergence of local currencies is seigniorage. The situation is similar to a country using a domestic currency rather than a foreign currency. Fischer (1982) argued that if there are no costs of exchanging domestic for foreign money in international transactions, then a rational, self-controlled government would use its own currency to gain the seigniorage. Fischer showed seigniorage to be an important source of revenue for most governments, averaging about 1 percent of gross national product (GNP) per year. There is also a one-time benefit of switching to a domestic currency of about 8 percent of GNP on average. This argument for using a domestic currency might be overturned if the transaction

costs of exchanging domestic for foreign money are large enough, as might be the case for small open economies, or if a country lacks the discipline to control its money supply.

Local paper currencies, of course, do not replace the national currency, rather they are complementary currencies. Therefore, the seigniorage from local currencies is likely to be much less than 1 percent of local production and income. How large is the seigniorage from local currencies? For the Ithaca Hours system, a crude measure of seigniorage is the new issues of Hours through disbursements and grants minus the costs of printing the currency. Printing costs are approximately 10 percent of the value of the Hours. In 2006, this crude measure of seigniorage is $\$5,660 - \$566 = \$5,094$. Personal income in Ithaca was approximately $\$393$ million in 1999, so this measure of seigniorage from Ithaca Hours is less than one-hundredth of a percent of personal income (Gaquin and DeBrandt, 2006, p. 1066, 1069 and authors' calculation).

A better measure of seigniorage from Ithaca Hours would account for administrative costs, the cost of the Directory (which enhances the acceptability of Hours), and revenue from the Directory and sales of Hours. As shown in Table 2, one such measure of seigniorage is $\$5,550$. This particular measure might overstate true seigniorage because it excludes the value of volunteer labor supplied to the system and includes in revenues some transfers from other accounts. The conclusion, however, is the same reached by the crude measure above: Seigniorage from Ithaca Hours is small relative to the size of the local economy.

It is argued that local currencies revitalize local economies by keeping money circulating locally. This argument is rather unconvincing. Buying from locally-owned business does not require a local currency; a national currency can be used just as well. Perhaps the listing of businesses accepting the local currency provides information about which businesses are locally owned, but it is difficult to imagine that consumers who are concerned do not know which establishments are chain-stores.

Even if a local currency increased sales of locally owned businesses at the expense of non-locally owned businesses, the effect on local income is likely to be a fraction of the shift in sales. Wage income would not increase if employees move from non-locally owned business to locally owned businesses. In this case, the increase in local income would be limited to the increase in proprietors' income times a multiplier reflecting any additional local spending generated. Proprietors' income and corporate profits amounted to 22 percent of national income in 2006 (Bureau of Economic Analysis, 2007, and authors' calculation). Given the demand for goods and services not produced locally (e.g. food, vehicles, energy, and entertainment), a reasonable value for the multiplier in a large metropolitan area is 1.5 (Noll and Zimbalist, 1997, p. 75). The multiplier would be less in a small community that imports a greater proportion of the goods and services it consumes. Therefore, the increase in local income from a shift in sales from non-locally owned to locally owned businesses resulting from the use of a local currency might be less than 33 percent ($.22 \times 1.5$) of the shift in sales.

Unfortunately, there is no direct evidence of the effect of local currencies on local economies due to the lack of data on the incomes of locally owned and non-locally owned establishments in a community. Indirect evidence, however, can be obtained by comparing rates

of economic growth over the 1990s of United States cities that used local paper currencies to growth rates of cities that did not.

The model of city income growth developed by Glaeser, Scheinkman, and Shleifer (1995) was adapted to compare cities with and without local currencies. Income growth is related to population, income level, education level, unemployment rate, industrial composition, government expenditures, and geographical location. The model is similar to national models of economic growth with the inclusion of initial income to test for income convergence, education to account for human capital, and geographical location as a proxy for weather. Compared to countries, however, there is relatively free movement of labor, capital, and ideas between cities, so additional variables related to the quality of life and to migration are included in the city growth model.

Data used to estimate the model came from the 1994 County and City Data Book and the 2006 County and City Extra (Gaquin and DeBrandt, 2006). The sample consisted of 1051 cities that had 25,000 or more citizens in 1990 less the 55 observations with missing government expenditure data. None of the cities with missing data had a local currency. Of the 17 communities with active local currencies in 2004, 14 were in the sample. Of the communities which attempted local currency systems but were inactive in 2004, 33 were in the sample. These two groups of cities were identified by dummy variables. Growth in city per capita income was measured by the difference in the logarithm of per capita income between the years 1989 and 1999. Manufacturing's share of employment was from 1987. Other variables use 1990 values.

The model was estimated by feasible generalized least squares due to an indication of heteroskedasticity in the error term (Greene, 1997, p. 558-559). The estimation results for the city income growth model over the 1990s are similar to those found by Glaeser et al. for 1960-1990. City per capita income growth was negatively related to initial population and per capita income, and positively related to education levels as measured by the percentage of the population with a bachelor's degree (Table 3). Manufacturing's share of employment was insignificant, but per capita government expenditures were positively related to per capita income growth. Cities in the South grew faster, and cities in the Northeast grew slower, than those in the West. Two differences with the Glaeser et al. results are that the unemployment rate was insignificant and that per capita income in the Midwest grew faster than in the South in the 1990s.

Of central concern to us are the economic effects of local currencies. The results show no significant difference between the growth rate of per capita income for cities that have or had local currencies compared to those that never did (Table 3). The effects of seigniorage and any increase in spending on goods and services produced by locally owned businesses resulting from the introduction of a local currency were too small to be detected in data on the growth of local per capita income over the 1990s. There might have been some increases in income that were distributed among a number of individuals and community organizations, but the overall benefits of local currencies on local economies were insignificant.

Local paper currencies also raise transactions costs. It is inconvenient for individuals to carry local currency in addition to the national currency, and it is cumbersome for merchants to

handle two forms of currency. Consider the unpopularity of the two-dollar bill (United States Department of Treasury, 2007). If people are reluctant to handle the two-dollar bill, they are unlikely to embrace several denominations of a local currency. The absence of widespread economic benefits and the increase in transactions costs might explain why over 80 percent of the local currency systems attempted in the 1990s failed to survive.

V. Conclusion

Local currencies have a history of spontaneously arising to the benefit of local populations in circumstances of inadequate banking services, shortages of money, and high unemployment. The experience of the United States during the 1990s, however, suggests that local currencies do not offer large economic benefits during periods of economic and financial stability. In such times, printed local currencies do not appear to foster local economic development.

Valid reasons for introducing and maintaining a local currency in relatively good economic times are largely non-economic. Local currencies may build “community pride and connections.” In other words, local currencies may function as cultural capital. Cultural capital has been defined in terms of “the sentiments and dispositions that constitute one’s attachment to particular places” (Jacob et al., 2004). In their sociological study of Ithaca Hours, Jacob et al. wrote:

“While HOURS have not yet, nor will they likely in the foreseeable future, become even a second-choice currency for most Ithaca residents, they nevertheless carry a symbolic value far beyond even their economic potential. They represent both a celebration of the virtues of a self-reliant local economy and a resistance to the dehumanizing effects of the global economy. An inquiring survey researcher would be hard pressed to discover Ithaca residents unaware of their local currency and who did not at least implicitly acknowledge that HOURS stand for the protection and enhancement of the quality of their community. It is arguably here, in the symbolic realm rather than in the material world of goods and services, that Ithaca HOURS make their lasting contribution.”

These arguments fall outside of the usual purview of economic analysis.

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Table 1. Communities with active local paper currency systems as of April 2007.

System name	City	State
1. Humboldt Exchange	Arcata	CA
2. Trade Market	Nevada City	CA
3. Northern Colorado Local Currency and Barter Project	Fort Collins	CO
4. BerkShares	Great Barrington	MA
5. NCPlenty, Inc.	Chapel Hill	NC
6. Ithaca Hours	Ithaca	NY
7. Corvallis Hours	Corvallis	OR
8. Cascadia Hours	Portland	OR
9. Equal Dollars	Philadelphia	PA
10. Charlottesville Barter Network	Charlottesville	VA
11. Burlington Currency Project	Burlington	VT
12. Madison Hours	Madison	WI

Sources: Collom (2005) and authors' on-line search.

Table 2. Seigniorage from Ithaca Hours, 2006
Values in dollars.

	Ithaca Hours	US\$
Revenue	8,465	6,301
New issues of Hours (disbursements and grants)	5,660	
Directory income (fees and ads)	2,305	3,660
Hours sold/exchanged		976
Other revenue	500	1,665
Costs	3,101	6,115
Printing new issues (estimate)		566
Directory expenses	1,271	1,628
Professional services	1,375	3,089
Other costs	455	832
Seigniorage = Revenue – Costs		
= (8,465 + 6,301) – (3,101 + 6,115)		
= 5,550		

Sources: Feuer (2007), Burke (2007), and authors' calculations.

Table 3. Estimation Results

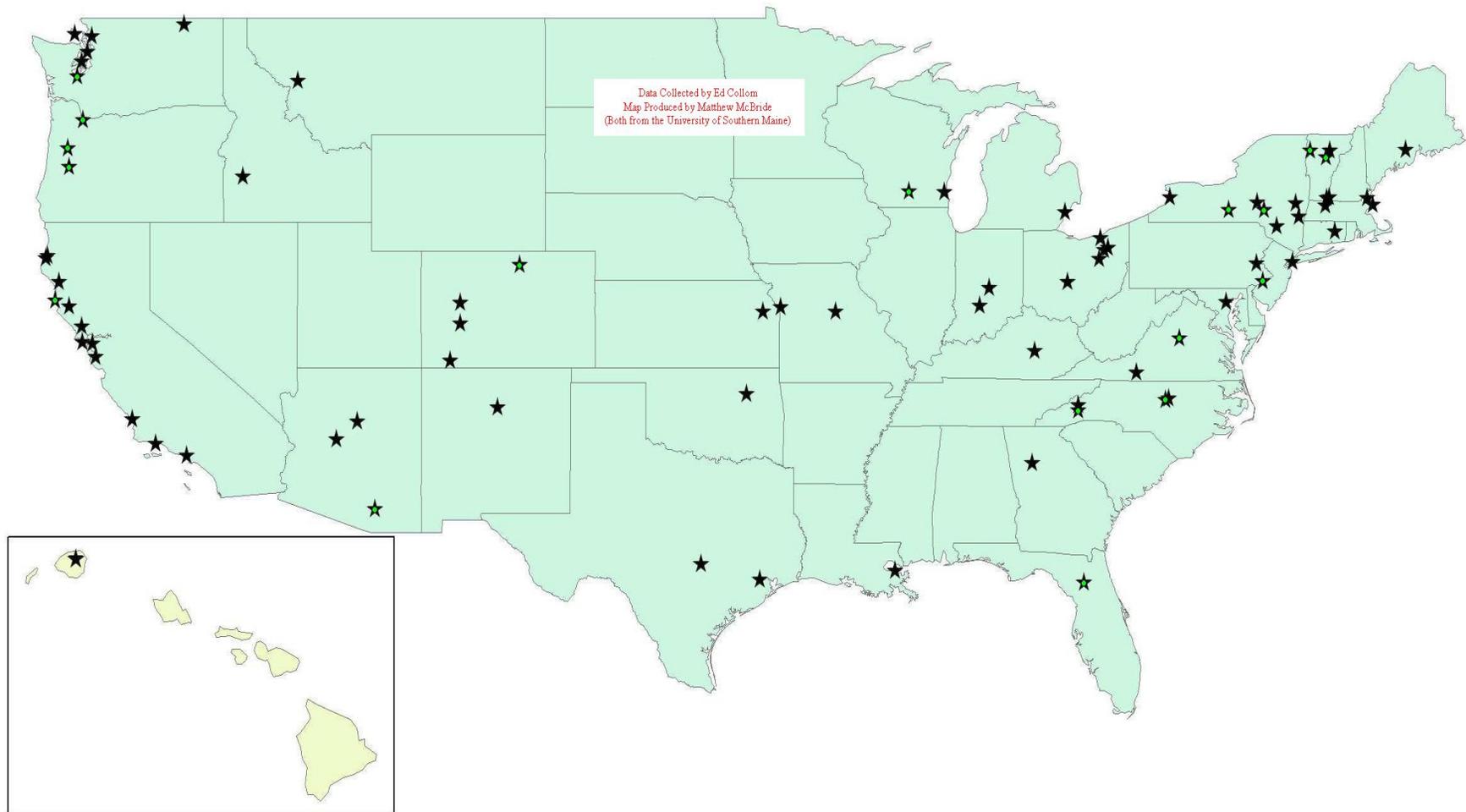
Explanatory variable	Coefficient	t-statistic	p-value
Log population (1990)	-.006	-2.35	.019
Per capita income (1989)	-5.24E-06	-5.96	.000
Percent bachelor's degree (1990)	.003	8.13	.000
Unemployment rate (1990)	.001	.52	.605
Manufacturing share employment (1987)	.000	.97	.333
Per capita government expenditure (1990)	7.13E-06	1.97	.049
South dummy	.025	3.31	.001
Midwest dummy	.055	7.75	.000
Northeast dummy	-.026	-2.93	.003
Have a local currency	-.012	-.83	.405
Had a local currency	.002	.34	.736

Dependent variable: Change in log per capita income, 1989-1999.

Number of observations: 996.

Method of estimation: Feasible generalized least squares.

Figure 1. Cities in which printed local currencies were attempted, 1991-2004.



Source: Collom (2005).

Figure 2. Denominations of Ithaca Hours



Source: Ithaca Hours, Inc. Home page on-line.