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Using a Policy Index To Capture Trends and Differences in State Administration of USDA's Supplemental Nutrition Assistance Program

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Abstract

From the early 1970s until the mid-1990s, administration of USDA's Supplemental Nutrition Assistance Program (SNAP)—formerly the Food Stamp Program—was largely uniform across States. However, enactment of welfare reform in 1996 and subsequent legislative and regulatory changes gave States increased administrative discretion. As a result, States adopted policies that affect eligibility, the time and money (transaction costs) associated with enrolling and maintaining benefits, the stigma attached to participation, and outreach to raise awareness of SNAP. Using data from the SNAP Policy Database, a data source of USDA's Economic Research Service (ERS), this study creates a SNAP Policy Index that captures differences in State-level SNAP policies from 1996 to 2014. Findings indicate a general trend toward more accommodative State-level SNAP policies. The largest shifts toward accommodative policies occurred in policies related to transaction costs and eligibility, followed by policies related to stigma. Differences are seen particularly in 1996-2002, as some States acted faster than others in adopting more accommodative policies. The divergence lessened somewhat between 2002 and 2014, as additional States adopted more accommodative rules, though there was still greater variation in State SNAP policies in 2014 than in 1996.

Keywords: Supplemental Nutrition Assistance Program, SNAP, Food Stamp Program, State Policy, Index, SNAP Participation

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Using a Policy Index To Capture Trends and Differences in State Administration of USDA's Supplemental Nutrition Assistance Program

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What Is the Issue?

The U.S. Department of Agriculture (USDA) operates the Supplemental Nutrition Assistance Program (SNAP)—formerly the Food Stamp Program—in partnership with States and local areas. For much of the program's history, SNAP administration was largely uniform across States. However, with passage of welfare reform legislation in 1996, along with subsequent legislative and regulatory changes, States now have considerable discretion in how they administer the program. Although the maximum benefit levels and the benefit calculation formula are set at the Federal level, States have the option to adopt policies that may affect eligibility for benefits, the transaction costs associated with enrolling and maintaining benefits, the stigma attached to participation, and outreach to raise awareness of the program among eligible nonparticipants. USDA's Economic Research Service (ERS) compiles information on State-level SNAP policy changes in its SNAP Policy Database. Using data from 1996 to 2014, this study produces a SNAP Policy Index that captures trends in how accommodative States are to enrolling individuals in SNAP—that is, whether their policies are likely to encourage SNAP participation. Higher values of the index indicate more accommodative SNAP policies. It also measures differences across States and changes within States across years.

What Did the Study Find?

The study finds that since the mid-1990s, State policies related to SNAP eligibility, transaction costs, stigma, and outreach have changed considerably. There is a general trend toward more accommodative SNAP policies, with the largest shifts occurring in policies related to transaction costs and eligibility, followed by policies related to stigma. However, although most States have adopted at least some more-accommodative SNAP policies since 1996, there has been a divergence across States in how accommodative they are. The SNAP Policy Index's standard deviation, which measures how State-level values of the index vary from the national average, more than doubled, from 0.42 in 1996 to 1.017 in 2002, meaning there were greater differences across States when they were granted increased

flexibility as part of the Farm Security and Rural Investment Act of 2002 (the 2002 Farm Bill). Since 2002, the index's standard deviation slowly declined to 0.66 in 2014, which was near the level seen between 1998 and 2000. Using data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), the study also finds that increases in the SNAP Policy Index correspond with increases in SNAP participation, suggesting that changes in a State's SNAP Policy Index matter for the SNAP caseload.

How Was the Study Conducted?

Using SNAP Policy Database data for 1996-2014, the study forms an index that takes into account the 10 State SNAP policies that have been shown to have statistically significant effects on the SNAP caseload, either positively or negatively, based on previous research. The 10 policies include 4 policies affecting SNAP eligibility: exempting at least 1 but not all vehicles from the SNAP asset test; exempting all vehicles from the SNAP asset test; broad-based categorical eligibility (BBCE), which extends categorical eligibility for SNAP to otherwise eligible households based on asset and gross income criteria set for the noncash Temporary Assistance to Needy Families (TANF) program; and eligibility restrictions for adult noncitizens. Another three policies pertain to transaction costs: the frequency at which working households must recertify for SNAP, whether the State has adopted simplified reporting requirements for certain households, and the availability of online applications. Two other policies relate to the stigma of participation: the proportion of SNAP benefits issued by electronic benefit transfer (EBT) cards and whether fingerprinting is required during the application process. The final policy relates to whether the State has federally funded TV or radio ad campaigns for SNAP outreach, which ran from 2004 to 2012 but were prohibited by the Agricultural Act of 2014.

Using a Policy Index To Capture Trends and Differences in State Administration of USDA's Supplemental Nutrition Assistance Program

Introduction

The U.S. Department of Agriculture (USDA) operates the Supplemental Nutrition Assistance Program (SNAP) in partnership with States and local areas. In the early 1970s, the Federal Government established uniform national eligibility standards for SNAP, which was then called the Food Stamp Program, based on income and asset limits. From that time until welfare reform in the mid-1990s, the administration of SNAP was largely uniform across States (Ohls and Beebout, 1993). However, with enactment of welfare reform in 1996 and passage of other legislation, including the Farm Security and Rural Investment Act of 2002 (2002 Farm Bill), States gained considerable discretion in how they administer the program (Andrews and Smallwood, 2012; Tiehen, et al., 2015). Differences now exist across States in policies relating to eligibility for SNAP benefits, transaction costs associated with enrolling and maintaining benefits, the stigma attached to participating in the program, and outreach to raise awareness of the program among eligible nonparticipants.

SNAP remains a legal entitlement program, which means that no household that meets the eligibility requirements can be denied benefits, and the basic benefit formula is nationally uniform.[1] However, the increased State flexibility in some aspects of program administration means that the program's design does not adhere as strongly as it once did to the principle of horizontal equity, in which individuals with equivalent needs have equivalent access to assistance (Plotnick, 1985).

The variation in the policies adopted by States and differences in the timing of their adoption have provided researchers with a natural means to show the extent to which these policies affect household SNAP participation (Dickert-Conlin et al., 2016; Ganong and Liebman, 2013; Klerman and Danielson, 2011; Mabli and Ferrerosa, 2010; Ratcliffe et al., 2008; Ribar et al., 2008 and 2010; Ziliak, 2015).

Given that State flexibility in program administration has important implications for the horizontal equity of the program's design and program administrative costs, and that State policy choices have an impact on the SNAP caseload, it is useful to document the pattern of SNAP policy changes. The goal of this project is to study how accommodative States are to enrolling individuals in SNAP and to provide policymakers and researchers with a tool to examine policies over time and across States. To do this, we form an index that takes into account 10 State policy options, using yearly policy data for each State. A simple measure of the SNAP policies adopted

[1]The maximum SNAP benefit is, however, higher in Alaska and Hawaii to adjust for higher food prices in those States. We do not account for this difference in the SNAP Policy Index because it is designed to make the purchasing power of SNAP benefits in Alaska and Hawaii equal to that in the other 48 States and the District of Columbia.

by States allows for straightforward comparisons of policy choices across States, as well as an assessment of policy changes over time within States.

Policy indexes have been successfully used in other contexts to provide a summary measure of the policy environment. In the United States, researchers have constructed indexes to characterize State policies affecting cash welfare recipients after passage of the 1996 welfare reform legislation (Fellowes and Rowe, 2004; Fender et al., 2002; Hetling et al., 2015). The Social Policy Index, first proposed by the United Nations to summarize tax policy and spending on social programs, has been used to make cross-country comparisons of policy efforts to reduce household economic vulnerability (Garcés Ferrer et al., 2016; Ródenas Rigla et al., 2017). The World Bank's Doing Business index captures the ease of doing business across and within countries by measuring regulations that affect the various stages of the life of a small or medium-size business (World Bank, 2017).[2] Our project falls in this line of work.

[2]Other indexes measure well-being, such as the Organisation for Economic Co-operation and Development's Better Life Index, which compares well-being across countries, and the U.S. Department of Housing and Urban Development's Poor Quality Index, which measures the level of physical deficiencies in housing units.

SNAP Policy Data

The data used to form the index are based on the USDA, Economic Research Service (ERS) SNAP Policy Database, which contains detailed information on State-level SNAP policies in each year and month from 1996 to the end of 2014.[3] These data include policies related to eligibility for SNAP benefits, transaction costs associated with enrolling and maintaining benefits, the stigma attached to program participation, and outreach to raise awareness of the program among eligible nonparticipants. Currie (2006), in her review of the economics literature, identifies transaction costs, stigma, and lack of information as three primary explanations for a household's decision not to participate in a social assistance program such as SNAP. We focus on the 10 SNAP policies that have been shown to have statistically significant positive or negative effects on the SNAP caseload, based on previous research (Klerman and Danielson, 2011; Dickert-Conlin et al., 2016; Ziliak, 2015). We provide more details on each policy below. It is important to note that the SNAP Policy Database is restricted to State-level policies, so it does not capture changes in SNAP policy enacted at the national level. For example, the 2009 American Recovery and Reinvestment Act temporarily increased SNAP benefits as part of an effort to stimulate economic activity in response to the Great Recession, but this national change is not reflected in the index.[4]

Eligibility

To be eligible for SNAP benefits, households must have limited assets and income.[5] Currently, under Federal SNAP rules, a household may have no more than $2,250 in countable assets ($3,500 if any member of the household is older than 60 or disabled),[6] the household's gross monthly income must not exceed 130 percent of the Federal poverty line (households with an elderly or disabled member do not face the gross income test), and the household's net monthly income must be less than 100 percent of the poverty line. Under Federal rules, the portion of the value of certain vehicles in excess of $4,650 is also counted in the asset test. As we describe in detail below, States have some options to expand these income and asset limits.

Using the data from the policy database, we create four policy variables related to eligibility for SNAP. These are: exempts at least one vehicle (but not all vehicles) from the SNAP asset test, exempts all vehicles from the SNAP asset test, broad-based categorical eligibility (BBCE), and eligibility restrictions for adult noncitizens.

States have the option to align their SNAP vehicle policy with the vehicle policy under their Temporary Assistance for Needy Families (TANF) program. If the State TANF program excludes the value of at least one vehicle (in addition to vehicles excluded by statute) or excludes the value

[3]Detailed information about the SNAP Policy Database can be found on the USDA, ERS website.

[4]For a detailed examination of the evolution of SNAP, highlighting the major policy and economic changes that have shaped the program over time, see Oliveira et al. (2018).

[5]For a full discussion of eligibility restrictions based on assets and income, see the website for USDA's Food and Nutrition Service.

[6]Countable assets include cash, resources easily converted to cash, and some nonliquid assets. The value of retirement and education savings accounts, family homes, business property, and tools of a trade are excluded from countable assets. A portion of the value of certain vehicles may also be excluded from countable assets.

of all vehicles from the household's countable resources, States may implement these exemptions for SNAP purposes.[7]

Under BBCE,[8] States have the option to extend categorical eligibility for SNAP to households that receive or are authorized to receive a noncash benefit or service financed out of TANF or State maintenance of effort (MOE) funds.[9] These noncash benefits include transportation and child-care benefits, but could also include receipt of an informational pamphlet on how to obtain public assistance. Under BBCE, States may align their SNAP income and asset limits with the eligibility criteria used by the TANF/MOE-funded program, conferring categorical eligibility. Often these programs use a higher gross income limit (up to 200 percent of the Federal poverty line) and eliminate the net income and asset tests. If a State eliminates the asset test through BBCE, we also code the State as exempting all vehicles.

Our last policy variable in this category involves eligibility restrictions for legal noncitizen adults. The 1996 welfare reform law eliminated the eligibility of legal noncitizens to participate in SNAP. In response, a handful of States created and maintained State-funded food assistance programs for those who, except for their noncitizen status, were otherwise eligible for SNAP benefits. Subsequent Federal legislation reinstated eligibility for legal noncitizen children, legal immigrants in the country for at least 5 years who have earned, or can be credited with, 40 quarters of work, and some specific legal immigrant groups such as refugees. However, the restrictions on SNAP eligibility for legal noncitizens had important impacts on the SNAP caseload. Given that part of the justification for the index is predicting the SNAP caseload for research purposes, we chose to include this variable. The policy variable captures whether all legal noncitizen adults under age 65 are ineligible to participate in SNAP.

Transaction Costs

Beyond affecting eligibilty, State policies can affect the likelihood that eligible individuals sign up for the program. Some of these policies involve transaction costs, an economic term that refers to the costs of participating in an exchange or in a market. In the case of SNAP participation, transaction costs generally refer to the time and money spent establishing and maintaining eligibility for the program. For example, a 1999 study found that completing the average SNAP application took nearly 5 hours (including at least two trips to a local office), and recertification took over 2 hours. Out-of-pocket costs—primarily for transportation—averaged about $10 for a SNAP application and $6 for recertification (Ponza et al., 1999). We examine three State policies related to SNAP transaction costs: the proportion of working households with short recertification periods (1-3 months), an indicator for whether the State uses simplified reporting for households with earnings, and online application availability.

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[7]Vehicle policy under Federal rules excludes certain vehicles from countable assets depending primarily upon the use of the vehicle. For example, if a vehicle is used to transport a disabled household member, it is excluded.

[8]Households that receive cash benefits from another means-tested program like Supplemental Security Income (SSI), cash-TANF, or General Assistance are categorically eligible for SNAP. These households meet the income and asset limits of the other means-tested program, and must also satisfy all other SNAP requirements, to be eligible for SNAP.

[9]Under the TANF program, States receive a block grant to fund programs that provide families with financial assistance and related support services, including childcare assistance, job preparation, and work assistance. The TANF program's MOE provisions require States to maintain specific spending levels on programs that further the goals specified in the TANF program.

Having a high proportion of households with short recertification periods may reduce the number of households participating in SNAP because of the additional effort associated with frequent recertification.

A simplified reporting policy reduces reporting frequency, requiring households to report changes in income between certification or reporting periods only if the change results in income rising above 130 percent of the poverty line. In States without simplified reporting, participants must report changes in income either monthly, quarterly, or within 10 days of the income change.

The availability of online applications, the final policy in this category, also reduces the effort required to apply for SNAP.[10]

Other Program Costs/Stigma

In addition to transaction costs, other program costs and the stigma associated with participating in SNAP may reduce participation. Stigma was first incorporated into an economic model of social assistance program participation by Moffitt (1983) as an explanation for the lack of participation among eligible households. We examine two policy variables related to stigma: the proportion of SNAP benefits issued by electronic benefit transfer (EBT) cards and whether fingerprinting is required during the application process. Although we label these policies as stigma for ease of exposition, we acknowledge that they may influence a household's transaction costs.[11]

Distribution of benefits through EBT cards, which function similarly to debit cards, was introduced to make it less cumbersome to redeem benefits and to better detect and reduce the illegal sale of benefits. Using an EBT card, rather than a physical food stamp, may also reduce the stigma of using SNAP benefits.

Fingerprinting was instituted by some States to prevent households from receiving additional SNAP benefits through the use of multiple identities. However, the fingerprint process may add some stigma to enrolling in the program. Additionally, fingerprinting may discourage participation by increasing the length of the application process.

Outreach

The final policy variable included is an indicator for whether the State had a federally funded radio or TV ad campaign. The radio and TV ad campaigns, launched in 2004 in select media markets and continued through 2012, sought to raise awareness about SNAP among potentially eligible nonparticipants. An alternative way to characterize outreach is with a measure of total outreach spending in the State, which is included in ERS's SNAP Policy Database. However, we do not include this in the current analysis because prior research had mixed findings on the effect of outreach spending on participation. For example, Ratcliffe et al. (2008) find no effect of outreach spending on SNAP participation, Kabbani and Wilde (2003) find a positive effect only among working households, and Ziliak (2015) finds a small negative effect.

[10]In some States, online applications are available only in part of the State. In our index, a State is reported to have an online application only if it is available in the entire State.

[11]The same could be said for BBCE and vehicle exemption policies, as they reduce the need to verify assets.

For descriptive statistics of the SNAP policy variables, see tables 1 and 2 in Appendix A. Appendix table 1 presents the proportion of States adopting each policy across time. Prior to 2002, States were relatively likely to have eligibility restrictions for adult noncitizens, short recertification periods, and a low proportion of benefits issued via EBT—policies that are likely to discourage SNAP usage. After 2002, States were more likely to adopt vehicle exemptions, BBCE, simplified reporting, and online applications and to have relatively high levels of EBT card issuance—policies that are likely to increase the SNAP caseload. Appendix table 2 shows the correlations among the 10 SNAP policies. Simplified reporting, for instance, tends to be relatively highly correlated with exemptions for all vehicles ($\rho = 0.57$) as well as the proportion of benefits issued via EBT ($\rho = 0.58$). The proportion of working households with short recertification periods is negatively correlated with simplified reporting ($\rho = -0.49$) and the exemption of all vehicles from the asset test ($\rho = -0.37$).

SNAP Policy Index

We produce two versions of the State-level SNAP Policy Index. Using both indexes, we find that since 1996, there has been a widespread increase in how accommodative States are to SNAP enrollment, and that during the early 2000s, there was a great deal of variation in how States administered the program. In the first index, we give equal weight to the 10 policy variables. In the second index, we weight each policy by how much it affects the SNAP caseload, based on estimates from a regression described in Appendix C. In this report, we focus primarily on the unweighted index, which is simpler and easier to relate to the adoption of particular policies. The regression weighted (or caseload weighted) index may be more appropriate for researchers modeling SNAP participation, however. The Pearson correlation between the two indexes is 0.950.

The unweighted index is calculated by adding a +1 or a -1, depending on whether the policy is expected to increase or decrease SNAP participation. For policies that accommodate (or encourage) enrollment in SNAP, a +1 is added to the index if the State adopted the policy in a time period. The accommodative policies include: an exemption for at least one vehicle, but not all; an exemption for all vehicles; broad-based categorical eligibility (BBCE); simplified reporting; online applications; benefits issued by EBT; and a federally funded TV or radio ad campaign for SNAP outreach.[12] For policies that discourage SNAP enrollment, a -1 is added to the index. The nonaccommodative policies include: eligibility restrictions for adult noncitizens, short recertification periods, and fingerprinting. The values for each policy are summed for each State in each year. For a given State in a given year, the *minimum* possible summed value equals -3 (if a State chooses none of the seven policies that encourage enrollment and all of the three policies that discourage enrollment), and the *maximum* possible summed value equals 6 (if a State chooses six of the seven policies that encourage enrollment (a State cannot choose both an exemption for at least one, but not all, vehicles and an exemption for all vehicles) and none of the three policies that discourage enrollment).[13] After summing the values based on the policies adopted, the index is scaled to be between 1 and 10.[14] A value of 1 indicates that a State adopted all of the nonaccommodative policies to the fullest extent possible and none of the accommodative polices. A value of 10 indicates a State adopted all of the accommodative policies to the greatest extent possible and none of the nonaccommodative policies. Note that the index can (and frequently does) take on noninteger values (not whole numbers) because the proportion of households with short recertification periods and the proportion with benefits issued by EBT cards are variables that can be between 0 and 1.

In the second version of the index, the regression weighted (or caseload weighted) index, we weigh each policy by its estimated contribution to the SNAP caseload, as produced in work by Dickert-Conlin et al. (2016). More details on the regression weighted index are available in Appendix C. In table 1, the first column reports whether each variable makes a positive or negative contribution to the index, which is the same for the equal weighted and regression weighted indexes. The second

[12]The proportion of benefits issued by EBT is a continuous variable that ranges between 0 and 1 and not a binary variable. The proportion of households with short recertification periods is also a continuous variable that ranges between 0 and 1.

[13]For a State that did not have vehicle exemptions prior to adoption of BBCE, a newly adopted BBCE policy that waives the asset test will increase the index by +2 because the adoption of the BBCE policy implies that all vehicles are exempted.

[14]This is done by simply adding +4 to the value of the index, so that the lowest possible value goes from -3 to 1, and the maximum value goes from 6 to 10.

column reports the relative weights used in computing the index between the equal weighted and regression weighted indexes. For example, eligibility restrictions for noncitizens received 4.8 times as much weight in the regression weighted index because of the large estimated impact on the SNAP caseload seen in Dickert-Conlin et al. (2016).[15] The proportion of working households with short recertification periods received 3.18 times as much weight in the regression weighted index, while federally funded radio/TV ads received 0.148 as much weight.

Table 1
SNAP policy variables and their contributions to the SNAP Policy Index

	Contribution to SNAP Index	Weight in regression weighted Index relative to unweighted Index
Policies affecting eligibility		
Exempts at least one but not all vehicles from SNAP asset test	+	1.624
Exempts all vehicles from SNAP asset test	+	1.552
Broad-based categorical eligibility (BBCE)	+	1.828
Eligibility restrictions for adult noncitizens	–	4.800
Policies affecting transaction costs		
Proportion of working households with short recertification periods (1-3 months)	–	3.180
Simplified reporting	+	1.132
Online application availability	+	0.456
Policies affecting stigma		
Mean proportion of State benefits issued via electronic benefits transfer (EBT)	+	0.276
Fingerprinting required during application	–	1.864
Policies affecting outreach		
Federally funded radio or TV ad	+	0.148

Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

[15]This is also consistent with similar research by Borjas (2004) and Bitler and Hoynes (2011).

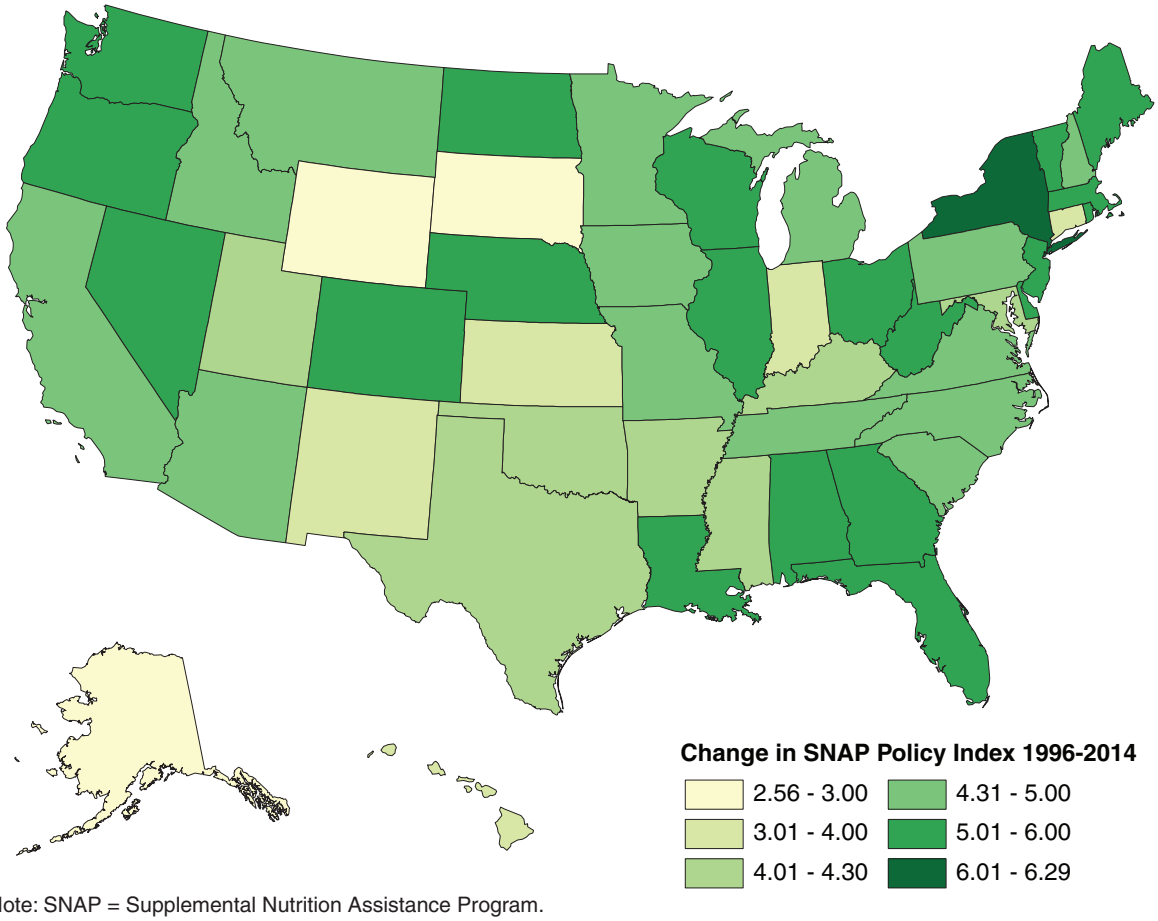
Changes in the SNAP Policy Index From 1996 to 2014

Below, we present an analysis of the SNAP Policy Index changes from 1996 to 2014—focusing on how SNAP policies have changed over that time within each State and how State SNAP policies have diverged over this period. The analysis uses the index giving equal weight to each policy, but the graphs and tables for the weighted index are reported in Appendix B.

Figure 1 depicts changes in the SNAP Policy Index across the States from 1996 to 2014. Index values range from 1 to 10, with 10 representing a set of policies that is the most accommodative to SNAP participation.

The smallest change occurred in Wyoming, where the index went from a value of around 4.1 to 6.6. The largest change occurred in New York, where the index moved from near 2.3 to over 8.6. It is notable that in all 50 States and the District of Columbia, the index increased over the period from 1996 to 2014, meaning that SNAP policies became more accommodative toward enrollment in SNAP in every one of those States.[16]

Figure 1
Changes in the SNAP Policy Index, 1996-2014



Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

[16]We refer to the District of Columbia as a State in the remainder of the report.

Table 2 details the change in the SNAP Policy Index for each State and the U.S. average. The table also shows the change for component indexes, formed for each of the variable categories. For the indexes based solely on eligibility, transaction costs, stigma, or outreach, we used the same process described above but included only policies associated with each category. As a national average, States increased the SNAP Policy Index by around 4.6 points, from an average of 3.6 in 1996 to 8.2 in 2014. The increase resulted from gains in the eligibility, transaction cost, and stigma indexes. The largest gain occurred in the transaction costs index (2.1-point increase), followed by the eligibility index (1.7-point increase), and the stigma index (0.8-point increase). The outreach index did not change at all during the period because Federal spending on radio and TV was suspended in 2012 and then prohibited by the Agricultural Act of 2014.[17]

California and New York had relatively large changes in the SNAP Policy Index over this period. In New York, which had a 6.3-percent gain in the overall index, the eligibility index increased 2 points, the transaction cost index rose 2.4 points, and the stigma index went up 1.9 points. (An increase in the stigma index implies a decrease in stigma.) In California, where the overall index rose by 4.9 points, this increase was largely driven by the adoption of more accommodative eligibility and transaction cost policies, which increased the corresponding indexes 2 points and 1.97 points, respectively. Alaska and Wyoming had relatively small changes in the SNAP Policy Index compared to other States. Alaska's index increased by 2.7 points, with below average increases in both the eligibility and transaction cost indexes (1- and .8-point increases, respectively, versus 1.7- and 2.1-point increases for the national average). Similarly, Wyoming's index rose by 2.6 points, with a relatively small increase in the eligibility and transaction cost indexes (1.0 and 0.8 points, respectively).

Figure 2 provides more detail on the SNAP Policy Index each year from 1996 to 2014, allowing for an examination of year-to-year changes in the overall index and in the contribution of the four types of policies to the overall index. The figure shows the steady growth in the SNAP Policy Index from 1997 to 2014. Between 1997 and 2000, the policies that were more accommodating to eligibility and that reduced stigma played the largest role in the increase in the index. Reductions in transaction costs played a larger role in the increase in the index beginning in 2000. Although table 2 shows that the outreach index did not change between 1996 and 2014, the influence of outreach efforts on the overall index can be seen in Figure 2, particularly during the 2004-08 period.

[17]This was done partly because of concern that Federal funds were being used to actively persuade individuals to sign up for SNAP. A variety of other informational activities, such as eligibility prescreening and application assistance, continue to be allowed. The Agricultural Act of 2014 did not bring major changes to SNAP or States' policy options, although there were early congressional proposals to tighten eligibility requirements by eliminating the broad-based categorical eligibility (BBCE) option (Falk and Aussenberg, 2014).

Table 2
Changes in the SNAP Policy Index and component indexes for all States, 1996-2014

State	SNAP Policy Index 1996	SNAP Policy Index 2014	SNAP Policy Index difference 1996-2014	Eligibility index difference 1996-2014	Transaction costs index difference 1996-2014	Stigma index difference 1996-2014	Outreach index difference 1996-2014
U.S. Average	3.57	8.21	4.64	1.73	2.11	0.81	0.00
Alabama	3.55	8.81	5.25	2.00	2.35	0.90	0.00
Alaska	3.78	6.45	2.68	1.00	0.77	0.90	0.00
Arizona	3.23	7.72	4.49	2.00	2.59	-0.10	0.00
Arkansas	3.46	7.67	4.21	1.00	2.31	0.90	0.00
California	3.73	8.61	4.88	2.00	1.97	0.90	0.00
Colorado	3.28	8.52	5.24	2.00	2.34	0.90	0.00
Connecticut	4.47	7.81	3.34	1.00	1.43	0.90	0.00
Delaware	3.43	8.81	5.37	2.00	2.47	0.90	0.00
District of Columbia	3.39	7.81	4.41	2.00	1.51	0.90	0.00
Florida	3.25	8.71	5.45	2.00	2.55	0.90	0.00
Georgia	3.20	8.81	5.60	2.00	2.70	0.90	0.00
Hawaii	3.90	7.67	3.76	2.00	0.86	0.90	0.00
Idaho	3.36	7.81	4.45	2.00	1.55	0.90	0.00
Illinois	3.80	8.81	5.00	2.00	2.12	0.88	0.00
Indiana	3.22	6.79	3.56	1.00	1.66	0.90	0.00
Iowa	3.85	8.46	4.61	2.00	1.81	0.80	0.00
Kansas	3.98	7.81	3.83	1.00	2.00	0.83	0.00
Kentucky	3.19	7.47	4.28	2.00	1.38	0.90	0.00
Louisiana	3.14	8.39	5.24	1.58	2.76	0.90	0.00
Maine	3.19	8.81	5.62	2.00	2.72	0.90	0.00
Maryland	4.35	8.61	4.25	2.00	2.25	0.00	0.00
Massachusetts	3.23	8.63	5.40	2.00	2.50	0.90	0.00
Michigan	4.43	8.81	4.37	1.00	2.47	0.90	0.00
Minnesota	4.07	8.69	4.62	2.00	1.88	0.73	0.00
Mississippi	3.56	7.81	4.25	2.00	1.35	0.90	0.00
Missouri	3.42	7.81	4.39	1.00	2.48	0.90	0.00
Montana	4.50	8.81	4.31	1.08	2.32	0.90	0.00
Nebraska	3.38	8.56	5.18	1.75	2.53	0.90	0.00
Nevada	3.41	8.81	5.39	2.00	2.49	0.90	0.00
New Hampshire	3.31	8.29	4.99	2.00	2.09	0.90	0.00
New Jersey	3.56	8.66	5.10	2.00	2.37	0.73	0.00
New Mexico	3.97	7.73	3.76	2.00	1.65	0.11	0.00
New York	2.34	8.63	6.29	2.00	2.39	1.90	0.00
North Carolina	3.12	7.81	4.69	2.00	1.78	0.90	0.00
North Dakota	3.39	8.69	5.30	2.00	2.56	0.74	0.00
Ohio	3.45	8.59	5.14	2.00	2.36	0.79	0.00
Oklahoma	3.21	7.38	4.17	2.00	1.26	0.90	0.00
Oregon	3.45	8.73	5.27	2.00	2.37	0.90	0.00

continued—

Table 2

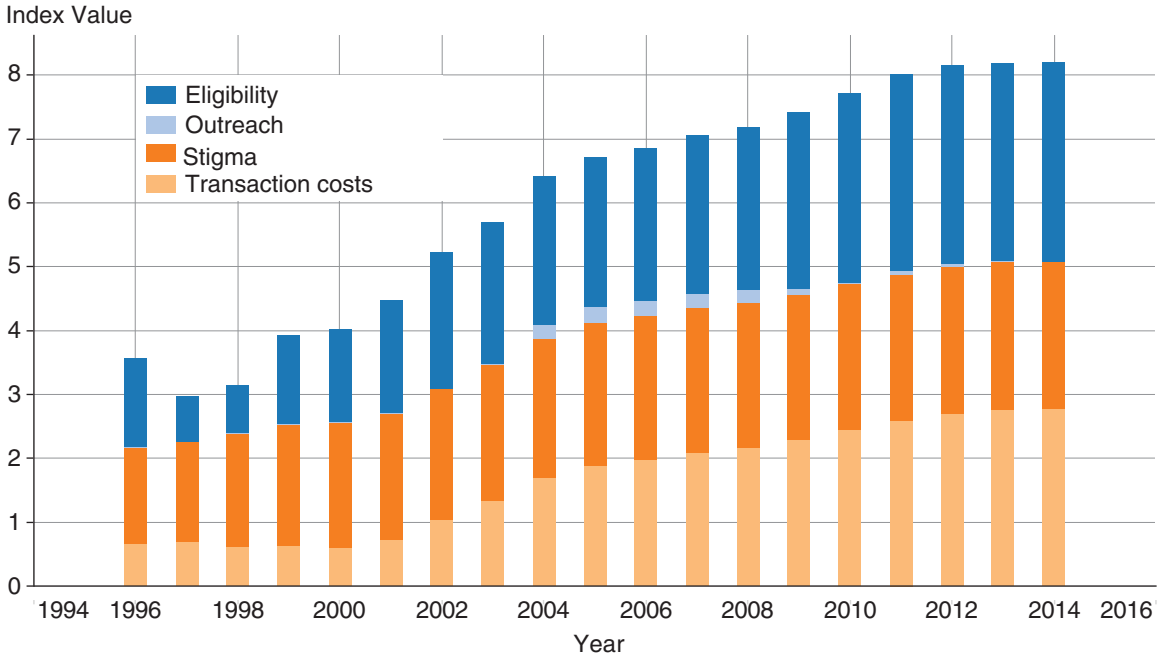
Changes in the SNAP Policy Index and component indexes for all States, 1996-2014 —continued

State	SNAP Policy Index 1996	SNAP Policy Index 2014	SNAP Policy Index difference 1996-2014	Eligibility index difference 1996-2014	Transaction costs index difference 1996-2014	Stigma index difference 1996-2014	Outreach index difference 1996-2014
Pennsylvania	3.65	8.51	4.87	2.00	2.07	0.79	0.00
Rhode Island	3.41	8.81	5.39	2.00	2.49	0.90	0.00
South Carolina	4.26	8.81	4.54	2.00	2.54	0.00	0.00
South Dakota	4.06	6.81	2.74	1.00	1.00	0.74	0.00
Tennessee	3.14	7.56	4.42	1.00	2.52	0.90	0.00
Texas	4.13	8.32	4.19	1.75	2.44	0.00	0.00
Utah	3.48	7.55	4.07	1.00	2.36	0.71	0.00
Vermont	3.37	8.81	5.43	2.00	2.53	0.90	0.00
Virginia	3.48	7.81	4.33	1.00	2.43	0.90	0.00
Washington	3.30	8.81	5.50	2.00	2.60	0.90	0.00
West Virginia	3.58	8.81	5.23	2.00	2.33	0.90	0.00
Wisconsin	3.50	8.81	5.31	2.00	2.41	0.90	0.00
Wyoming	4.05	6.61	2.56	1.00	0.81	0.75	0.00

Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

Figure 2

Contributions of eligibility, outreach, stigma, and transaction costs policies to the SNAP Policy Index for the United States as a whole, 1996-2014



Note: SNAP = Supplemental Nutrition Assistance Program. Eligibility policies = vehicle exemptions, broad-based categorical eligibility (BBCE), and eligibility for noncitizens. Outreach policies = whether a State has federally funded outreach. Stigma policies = proportion electronic benefit transfer (EBT) and fingerprinting. Transaction-costs policies = short recertification period, simplified reporting, and online applications.
Source: USDA, Economic Research Service, SNAP Policy Database.

Differences Among States in SNAP Policies

Welfare reform legislation in 1996 and the 2002 Farm Bill gave States greater flexibility in how they administer SNAP. This led to a policy divergence that peaked in the early 2000s around the 2002 Farm Bill. After 2002, States gradually moved toward more accommodative policies, and as they did, the SNAP Policy Index converged across States.

Figure 3 shows the trends in the SNAP Policy Index over time from 1996 to 2014 for 12 States: the 3 most populous States as of 2014 (California, Texas, and Florida), the 3 States with smallest change in the index from 1996 to 2014 (Wyoming, Alaska, and South Dakota), the 3 States with the greatest change (New York, Maine, and Georgia), and 3 States near the middle of the distribution of the change in the index (Iowa, Minnesota, and North Carolina). For trends in all States, see figure 2 in Appendix A.

While all States moved toward more accommodative policies over the period, many States exhibited periods of rapid changes. California had the lowest index value between 2001 and 2003 among all 50 States and the District of Columbia. This was partially driven by the adoption of fingerprinting at the end of 2000, which lowered the index. After 2003, the index increased as California issued a greater share of SNAP benefits through EBT, increased outreach, and adopted eligibility policies that were more accommodative to SNAP enrollment. At the end of 2014, California's SNAP Policy Index value was among the highest of all States. Maine, Iowa, and Georgia all rapidly adopted relatively accommodative SNAP policies in the early to mid-2000s. Alaska tended to lag behind most States in adopting more accommodative SNAP policies, and, at the end of 2014, had the least accommodative policies among all States.

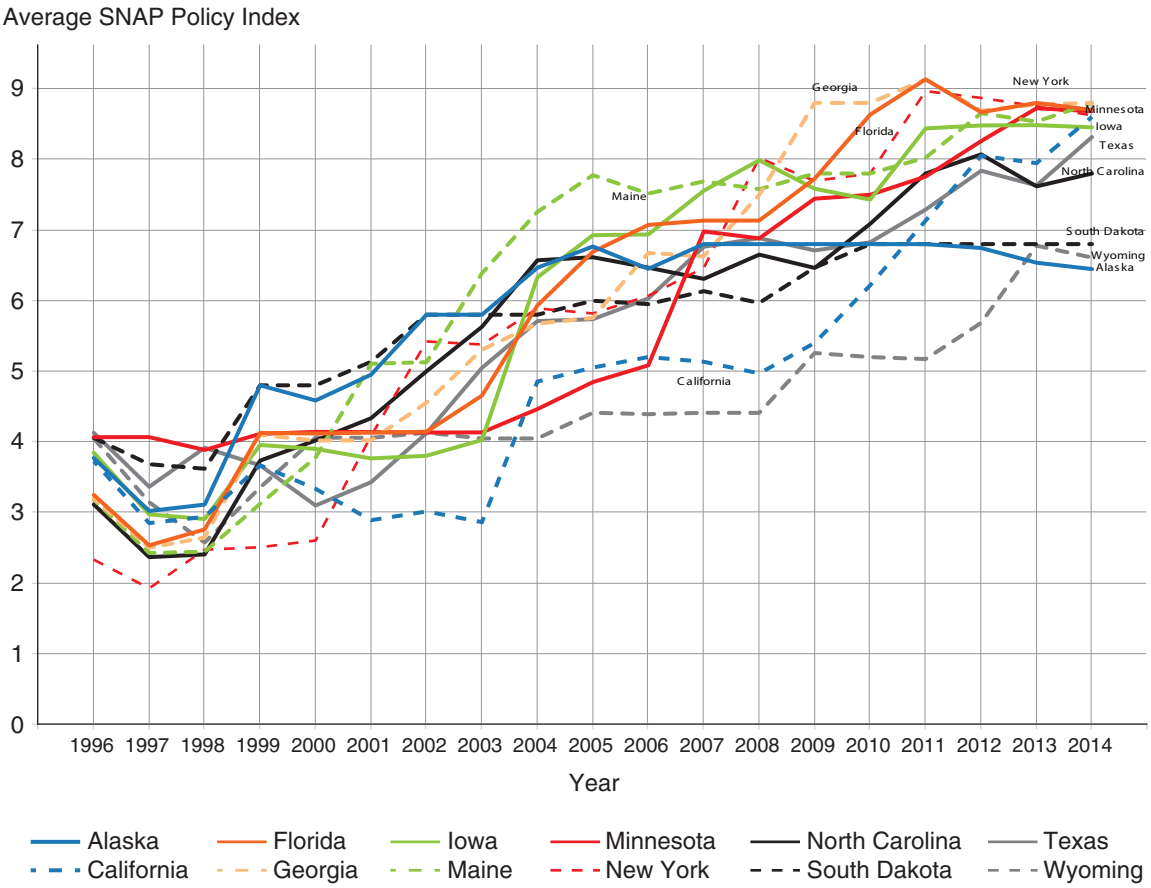
Figure 4a shows the standard deviation of the SNAP Policy Index across all 50 States and the District of Columbia in each year, and Figure 4b shows the standard deviation of component indexes. The standard deviations of the component indexes provide a sense of which types of policies are most different across States in a year.

Starting in 1996, States had relatively uniform policies with a standard deviation of 0.42 across States. Most of the variation at this time related to EBT issuance and recertification periods, although some States had different vehicle and fingerprinting policies. In 2001 and 2002, there is a sharp spike in the standard deviation, which coincides with large increases in the standard deviations of the eligiblity and transaction costs component indices and, to some extent, the stigma index. In 2001, the increase in the standard deviation of the eligiblity index seems to be driven by adoption by some States of vehicle-exclusion policies. The increase in the standard deviation of the transaction costs index results from an increase in the adoption of simplified reporting. The increase in the standard deviation of the stigma index over the late 1990s and early 2000s relates to the adoption of EBT issuance.

By 2002, the standard deviation of the SNAP Policy Index across States reaches 1.02, up from 0.42 in 1996. From 2002 to 2014, the standard deviation of the index across States gradually decreases, falling from 1.02 to 0.66 in 2014. The trends illustrated in figure 3 indicate that this reduction is caused by States gradually, and at their own pace, adopting more accommodative SNAP policies. As the States slowly move toward a set of accommodative policies, the differences across the States decrease. As of 2014, the standard deviation of the SNAP Policy Index was near the level seen in the late 1990s, but still substantially higher than its value in 1996.

Figure 3

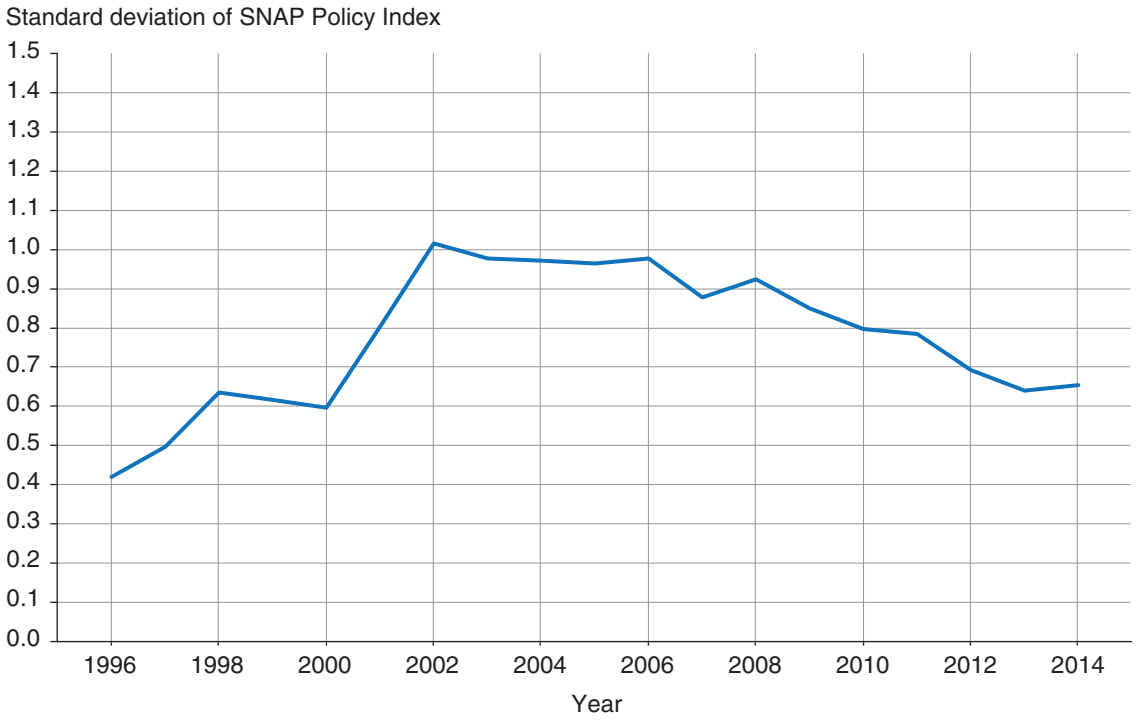
Trends in the SNAP Policy Index over time, selected States, 1996-2014



Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

Figure 4a

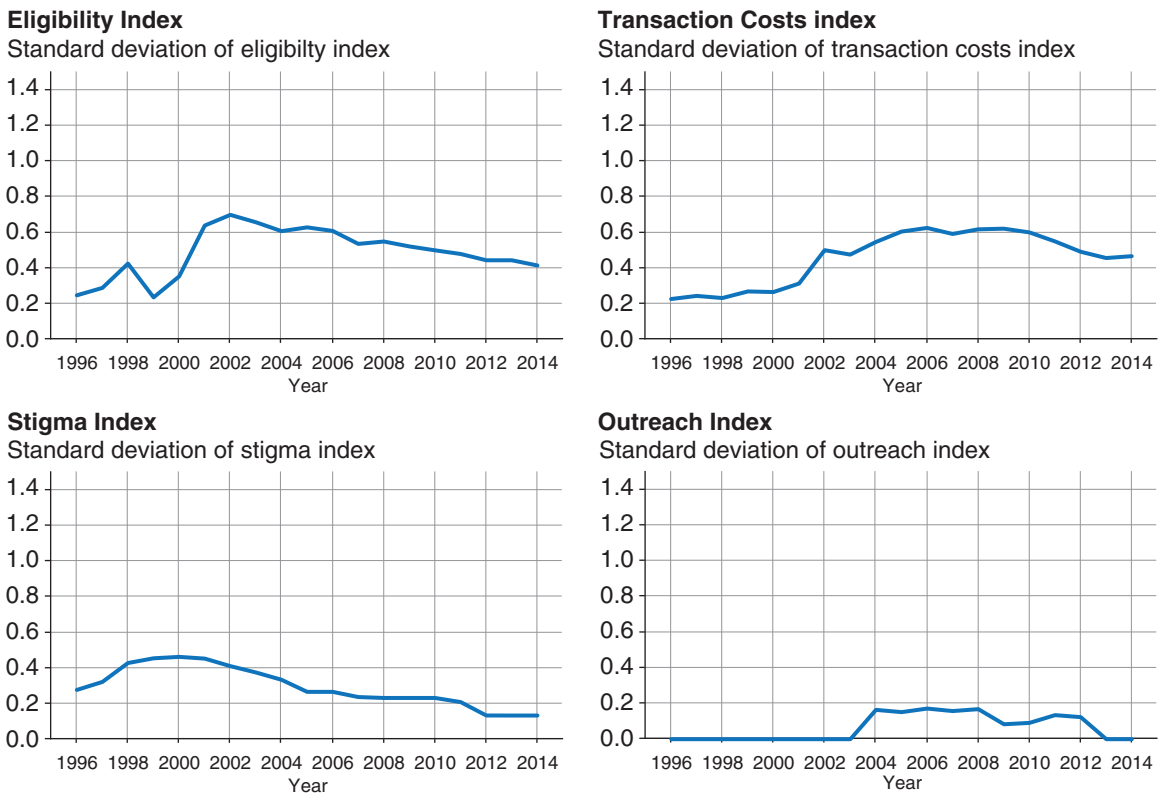
Standard deviation across States of the SNAP Policy Index in each year, 1996-2014



Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

Figure 4b

Standard deviation across States of the SNAP Policy component indexes in each year, 1996-2014



Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

Predicting SNAP Participation Using the SNAP Policy Index

While the SNAP Policy Index is useful for examining trends and differences across States in SNAP policies, it can also be used to explain or predict SNAP participation. Researchers could use it as an instrumental variable for SNAP participation in a study on the impacts of SNAP, for example, or policymakers might be interested in studying how adopting more accommodative policies affects SNAP use.

To examine how well the SNAP Policy Index predicts SNAP participation, we use data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP). The survey samples 14,000 to 52,000 households continually over a period of 2½ to 4 years, asking detailed questions—on income, workforce status, and program participation, including SNAP participation—and obtaining detailed demographic information.[18] We combine the 1996, 2001, 2004, and 2008 SIPP panels to produce a dataset containing observations on 401,734 individuals with an average 26.7 months of observations per individual for a total of 10,721,042 observations.[19] Our dataset spans the years 1996 to 2013. We then restrict our sample to all individuals above age 25 to get a sample of 254,807 adults with 7,156,656 total observations.

Using the SIPP data, we predict SNAP participation using the SNAP Policy Index in an individual fixed-effects regression. The regression includes age; age squared; dummy variables for the level of education of the respondent; the State unemployment rate, along with a 3-month, 6-month, and 12-month lag of the unemployment rate; State fixed effects; year fixed effects; month fixed effects; and individual fixed effects. Our regression specification is meant to mimic a specification that a researcher might choose to study the impacts of SNAP use on an outcome, perhaps using an instrumental variables approach. To be considered a valid instrument, the instrument must be both relevant as a strong predictor of SNAP use and exogenous. While we cannot assess exogeneity, because it is application specific, we can test for instrument relevance.

In table 3, we report the coefficient for the SNAP Policy Index, both unweighted and caseload weighted, and for each policy variable. We also report the F statistic, which is a commonly used measure of instrument relevance. Typical rules of thumb for a strong instrument are an F statistic greater than 10 (Staiger and Stock, 1994; Stock and Yogo, 2005). We see that both the unweighted and caseload weighted indexes are strongly predictive of SNAP participation, with F statistics of 17.24 and 37.48, respectively. The coefficients indicate that a one-unit change in the unweighted and caseload weighted indexes increases the probability of an individual using SNAP in a single month by around 0.1 percentage points. Also, the SNAP policy variables entered separately produce an F statistic of only 4.80, meaning that using the SNAP Policy Index as an instrument (rather than using the variables separately) may lead to improved performance of an instrumental variables estimator.[20]

[18]For more details on SIPP, see the U.S. Census Bureau website.

[19]The 1996 and 2004 SIPP panels surveyed individuals on 12 occasions; on each occasion, the respondent was tracked for 4 months, creating 48 monthly observations per individual. The 2001 SIPP panel surveyed individuals on nine occasions. The 2008 SIPP panel surveyed individuals on 16 occasions.

[20]The above exercise is meant to highlight that using the more aggregated SNAP Policy Index, rather than the individual variables themselves, may be beneficial for some purposes. We leave assessing the causal impact on SNAP use of these variables, and the SNAP Policy Index itself, to future research.

Table 3

Individual fixed-effects regression estimates of the effect of the SNAP Policy Index on monthly SNAP usage for adult individuals, using SIPP 1996, 2001, 2004, and 2008 panels

	(1)	(2)	(3)
Variables	Monthly SNAP use	Monthly SNAP use	Monthly SNAP use
Exempts at least one but not all vehicles from SNAP asset test	0.002		
	(0.001)		
Exempts all vehicles from SNAP asset test	0.002		
	(0.001)		
Broad-based categorical eligibility (BBCE)	0.004**		
	(0.002)		
Eligibility restrictions for adult noncitizens	-0.002***		
	(0.001)		
Proportion of working households with short recertification periods (1-3 months)	-0.008***		
	(0.002)		
Simplified reporting	0.000		
	(0.001)		
Online application availability	0.000		
	(0.001)		
Mean proportion of State benefits issued via electronic benefits transfer (EBT)	-0.001		
	(0.001)		
Fingerprinting required during application	-0.002		
	(0.001)		
Federally funded radio or TV ad	-0.001**		
	(0.000)		
Unweighted SNAP Policy Index		0.001***	
		(0.000)	
Caseload Weighted SNAP Policy Index			0.001***
			(0.000)
First stage F-test	4.795	17.24	37.48
	p<0.001	p<0.001	p<0.001
Observations	7,142,569	7,156,656	7,156,656
R-squared	0.004	0.004	0.004
Number of individuals	254,807	254,807	254,807
Individual FE	YES	YES	YES
State unemployment rate	YES	YES	YES
State FE	YES	YES	YES
Year FE	YES	YES	YES
Month FE	YES	YES	YES

*** p<0.01, ** p<0.05, * p<0.1.

Note: SNAP = Supplemental Nutrition Assistance program. FE = fixed effects. Regression also includes age, age squared, and dummy variables indicating the level of education of the respondent. Standard errors clustered at household level are in parentheses.

Source: USDA, Economic Research Service, SNAP Policy Database; and U.S. Department of Commerce, U.S. Census Bureau, Survey of Income and Program Participation (SIPP).

Conclusions

In this project, we form an index to examine changes in how accommodative States are to enrolling individuals in SNAP. The SNAP Policy Index takes into account 10 State SNAP policy options, using policy data from the ERS SNAP Policy Database for each State from 1996 to 2014.

We find that since the mid-1990s, SNAP policies related to eligibility, transaction costs, stigma, and outreach have changed considerably. The steady increase in the SNAP Policy Index reveals a general trend toward more accommodative SNAP policies. Although all States have adopted at least some accommodative policies since 1996, there have been clear differences across States in how accommodative they are to SNAP enrollment. The index framework is particularly useful for documenting this divergence. We find the standard deviation of the SNAP Policy Index across States increased from 0.42 in 1996 to 1.02 in 2002, then slowly declined to 0.66 in 2014 as a number of accommodative policies were implemented by all or most States. Finally, using SIPP data, we find that the SNAP Policy Index is predictive of SNAP participation for individuals and that it might perform better as part of the first stage in a research study than the policy variables considered separately.

In addition to comparing SNAP policy choices across States and over time, the SNAP Policy Index has other possible uses. Adding SIPP data, we used the SNAP Policy Index to predict SNAP participation, but more research could be done on the extent to which the index predicts the likelihood of participation. Indeed, some research has constructed indexes similar to the SNAP Policy Index to address that question (Miller and Morrissey, 2017). Research also could examine how the index correlates with State-level outcome measures such as the SNAP participation rate, an estimate of the fraction of eligible individuals in a State who participate in SNAP. Finally, as has been done for cash welfare policy (Fellowes and Rowe, 2004; Soss et al., 2001), research could examine State-level factors such as budget resources and political environment that contribute to differences in the SNAP Policy Index. Finally, using the framework and methodology laid out in the report, future work could extend the SNAP Policy Index to include new variables for additional research.

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Appendix A: Figures and Tables for Unweighted Policy Index

Appendix A table 1

Percent of States adopting each SNAP policy variable, 1996-2014

	1996	1998	2002	2006	2010	2014
	Percent					
Policies affecting eligibility						
Exempts at least one but not all vehicles from SNAP asset test	5.7	5.9	24.2	25.5	10.1	35.8
Exempts all vehicles from SNAP asset test	0.0	0.0	38.6	57.0	86.0	63.2
Broad-based categorical eligibility (BBCE)	0.0	0.0	17.7	21.7	66.8	79.6
Eligibility restrictions for adult noncitizens	0.0	63.9	0.0	0.0	0.0	0.0
Policies affecting transaction costs						
Proportion of working households with short recertification periods (1-3 months)	66.4	27.9	18.7	3.5	0.6	0.4
Simplified reporting	0.0	0.0	29.7	88.2	96.1	100.0
Online application availability	0.0	0.0	3.4	18.0	45.6	74.5
Policies affecting stigma						
Mean proportion of State benefits issued via electronic benefits transfer (EBT)	19.5	48.1	85.9	100.0	100.0	100.0
Fingerprinting required during application	2.0	2.9	7.8	7.8	5.9	2.0
Policies affecting outreach						
Federally funded radio or TV ad	0.0	0.0	0.0	23.9	2.6	0.0

Note: SNAP = Supplemental Nutrition Assistance Program.

Source: USDA, Economic Research Service, SNAP Policy Database.

Appendix A table 2

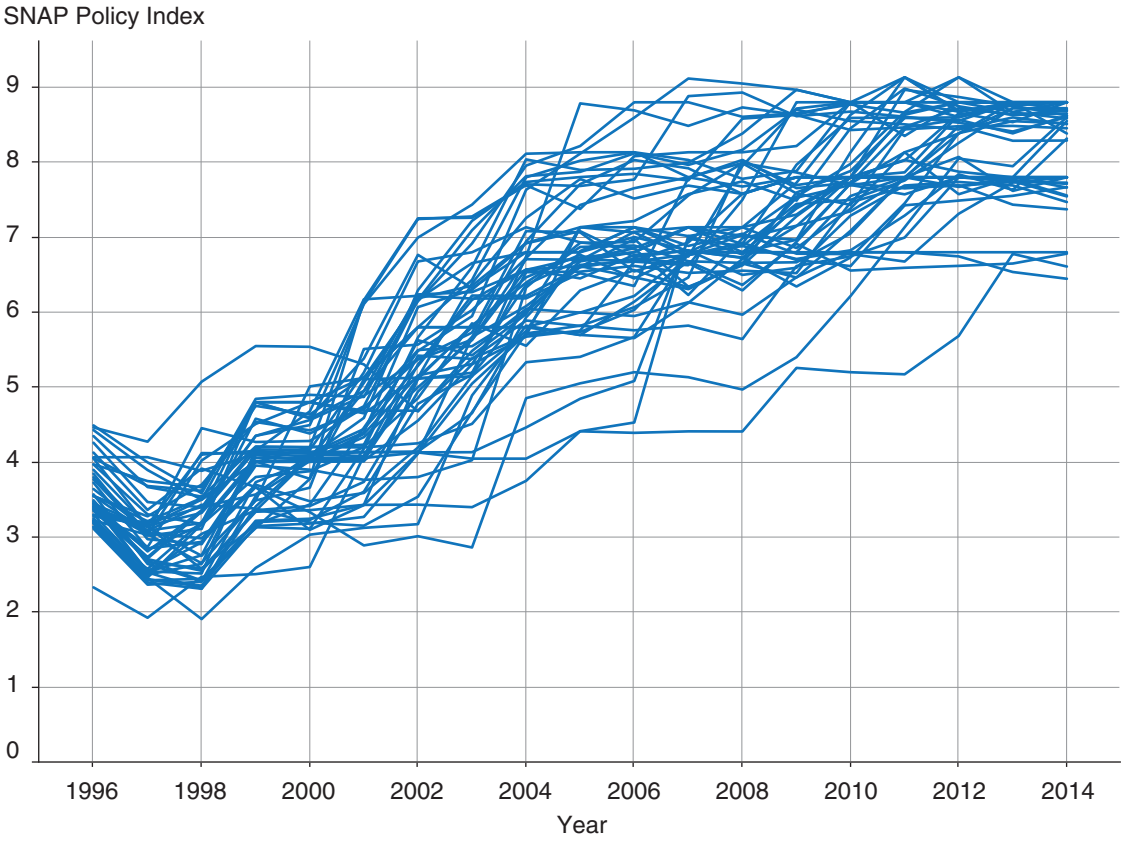
Pearson correlation matrix for the SNAP policy variables

	One vehicle	All vehicles	BBCE	Ban noncitizen	Short recert	Simplified reporting	Online app.	EBT	Fingerprint	Ads
Policies affecting eligibility										
Exempts at least one but not all vehicles from SNAP asset test	1									
Exempts all vehicles from SNAP asset test	-0.4181	1								
Broad-based categorical eligibility (BBCE)	-0.1343	0.5414	1							
Eligibility restrictions for adult noncitizens	-0.0797	-0.2517	-0.187	1						
Policies affecting transaction costs										
Proportion of working households with short recertification periods (1-3 months)	-0.0959	-0.3723	-0.3135	0.1802	1					
Simplified reporting	0.1402	0.5692	0.4566	-0.3263	-0.4868	1				
Online application availability	0.0166	0.3065	0.4488	-0.1567	-0.355	0.4478	1			
Policies affecting stigma										
Mean proportion of State benefits issued via electronic benefits transfer (EBT)	0.1288	0.4006	0.2978	-0.3699	-0.3297	0.5761	0.2981	1		
Fingerprinting required during application	-0.0416	-0.0362	0.0374	-0.0513	0.0053	-0.0332	-0.0084	0.0169	1	
Policies affecting outreach										
Federally funded radio or TV ad	0.0404	0.0804	-0.012	-0.0757	-0.0723	0.1586	0.0188	0.1351	0.0539	1

Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

Appendix A figure 1

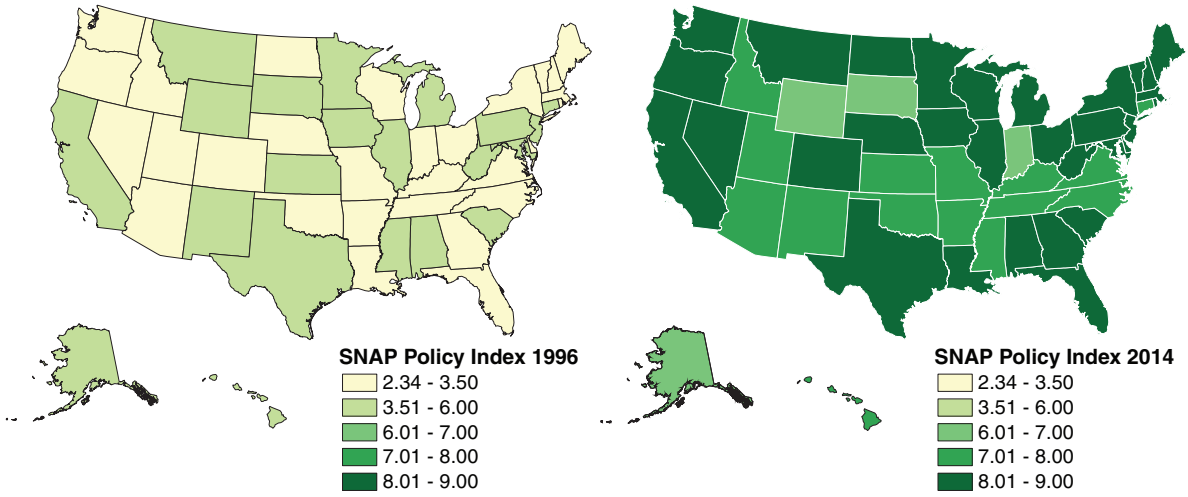
Trends in the unweighted SNAP Policy Index for all States, 1996-2014[1]



[1]Each line on the graph represents the value of the SNAP Policy Index for one State.
Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

Appendix A figure 2

Unweighted SNAP Policy Index values, 1996 and 2014

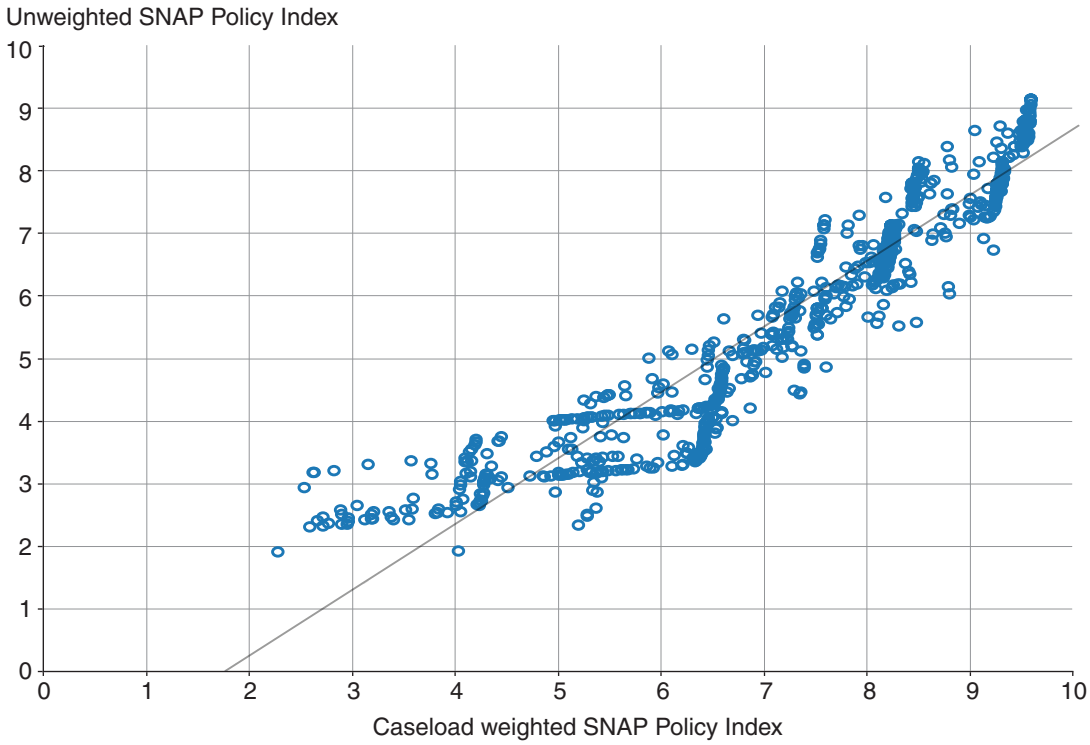


Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

Appendix B: Figures and Tables for Weighted Policy Index

Appendix B figure 1

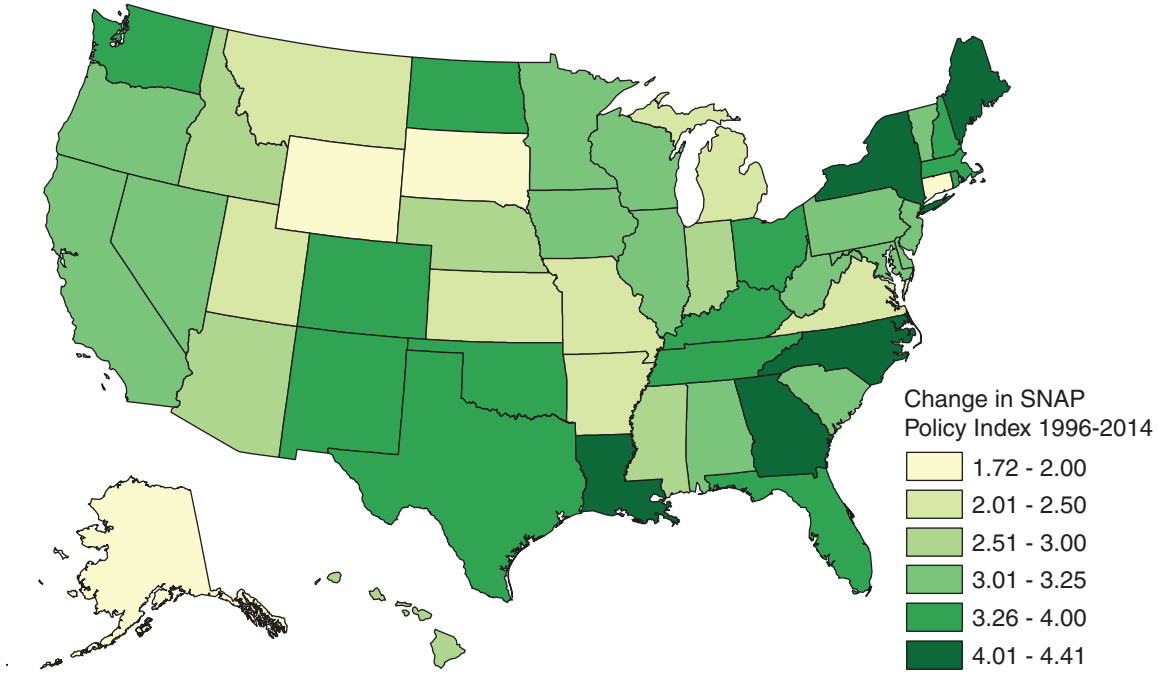
Unweighted SNAP Policy Index values plotted against the weighted SNAP Policy Index



Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

Appendix B figure 2

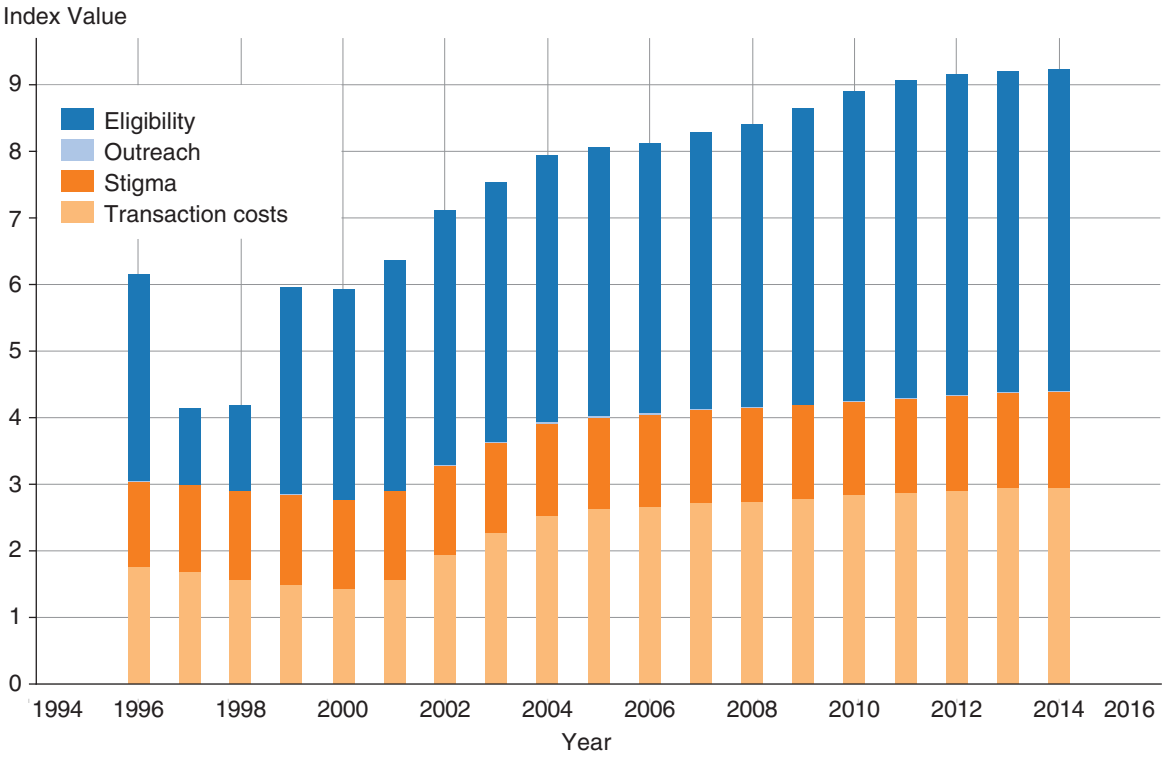
Changes in the SNAP Policy Index weighted by policy contributions to the SNAP caseload, 1996-2014.



Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

Appendix B figure 3

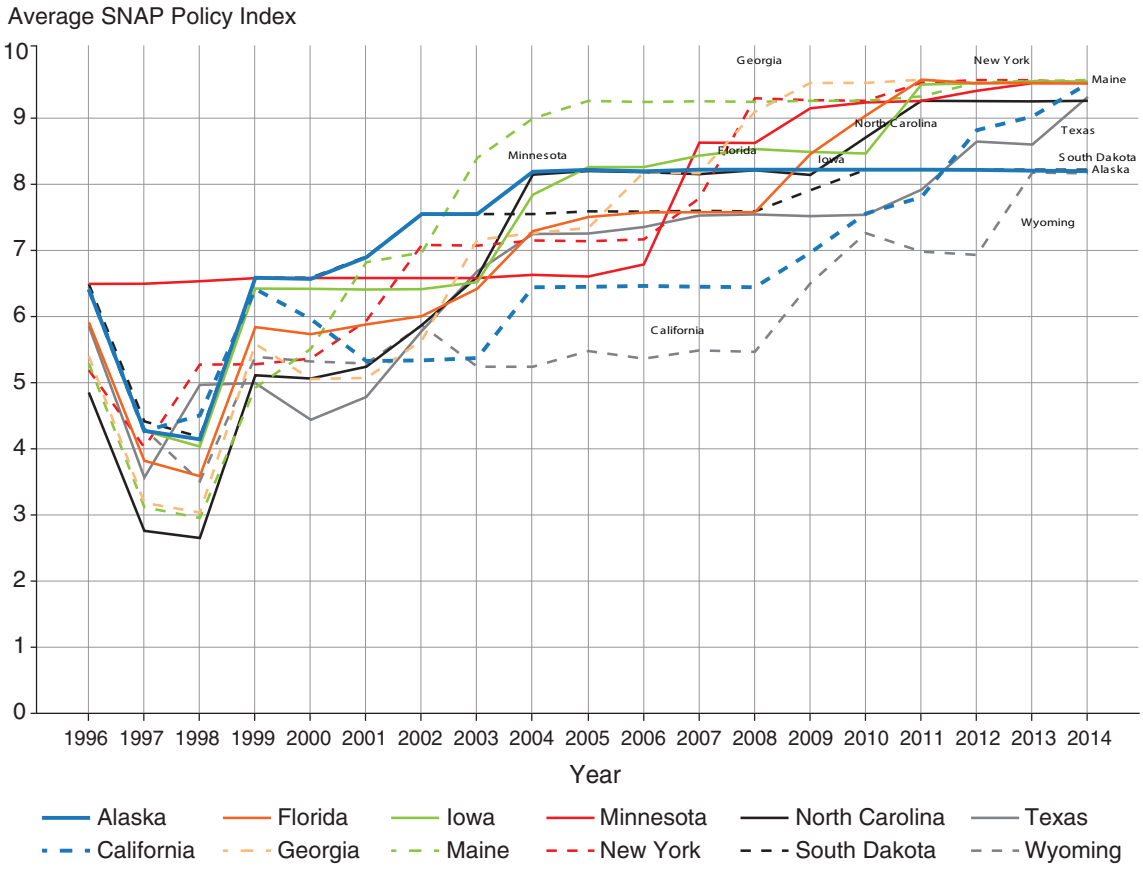
Contributions of eligibility, outreach, stigma, and transaction costs policies to the weighted SNAP Policy Index for the United States as a whole, 1996-2014



Note: SNAP = Supplemental Nutrition Assistance Program. Eligibility policies = vehicle exemptions, broad-based broad-based categorical eligibility (BBCE), and eligibility for non-citizens). Outreach policies = whether State has federally funded outreach. Stigma policies = proportion electronic benefits transfer (EBT) and fingerprinting. Transaction-costs policies = short recertification period, simplified reporting, and online applications.
Source: USDA, Economic Research Service, SNAP Policy Database.

Appendix B figure 4

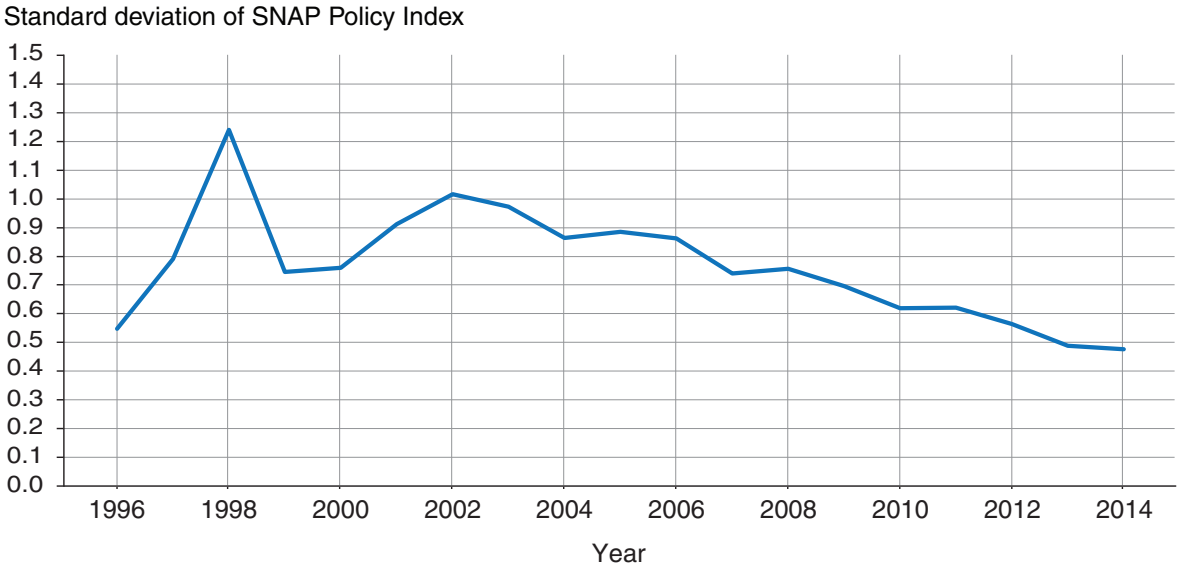
Trends in the SNAP Policy Index weighted by States' policy contributions to the SNAP caseload over time, selected States, 1996-2014



Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

Appendix B figure 5

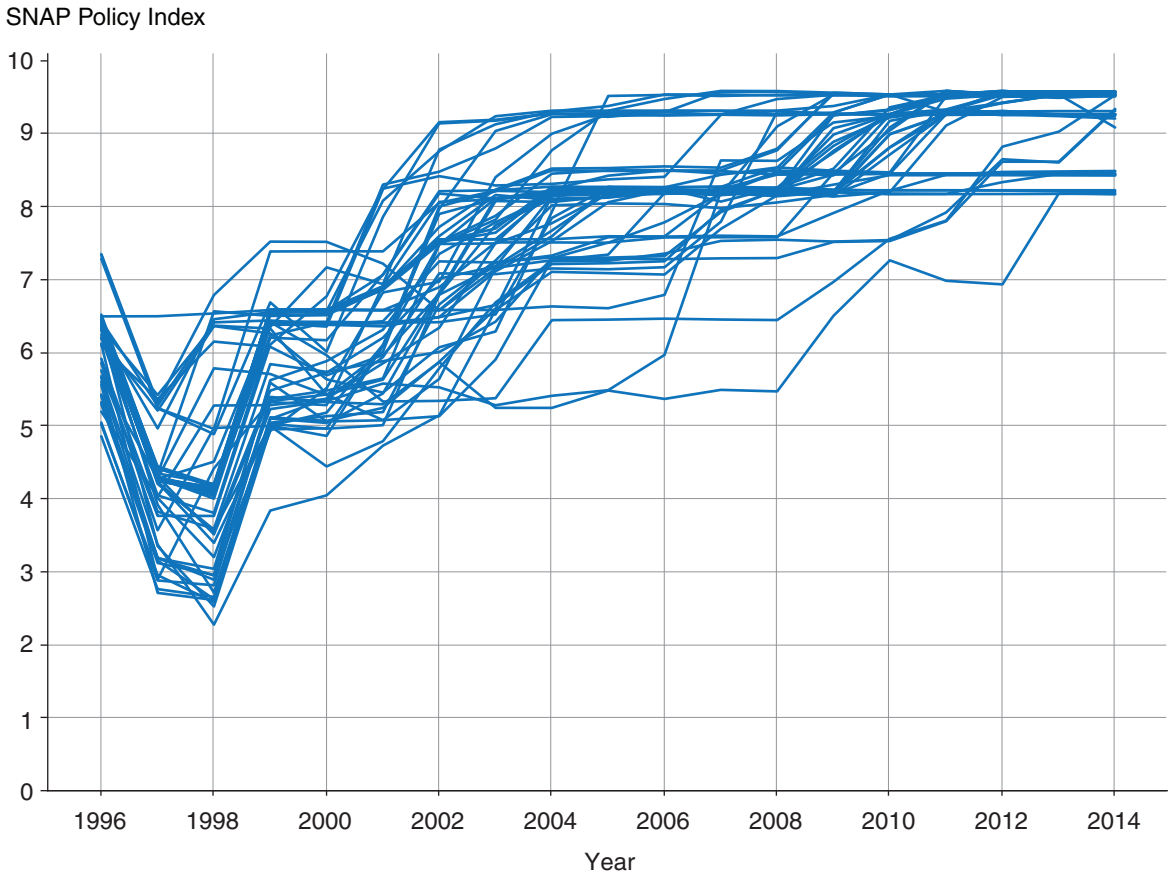
Standard deviation across States of the SNAP Policy Index weighted by States' policy contributions to the SNAP caseload in each year, 1996-2014



Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service, SNAP Policy Database.

Appendix B figure 6

Trends in the SNAP Policy Index weighted by each policy's contribution to the SNAP caseload over time for all States, 1996-2014[1]



[1]Each line on the graph represents the value of the SNAP Policy Index for one State.
Note: SNAP = Supplemental Nutrition Assistance Program.
Source: USDA, Economic Research Service SNAP Policy Database.

Appendix B table 1

Changes in weighted SNAP Policy Index and component indexes for all States, 1996-2014

State	SNAP Policy Index 1996	SNAP Policy Index 2014	SNAP Policy Index difference 1996-2014	Eligibility index difference 1996-2014	Transaction costs index difference 1996-2014	Stigma index difference 1996-2014	Outreach index difference 1996-2014
U.S. Average	6.16	9.23	3.07	1.73	1.19	0.14	0.00
Alabama	6.41	9.54	3.13	2.00	0.97	0.16	0.00
Alaska	6.42	8.21	1.79	0.96	0.66	0.16	0.00
Arizona	5.68	8.43	2.75	2.00	1.69	-0.94	0.00
Arkansas	6.39	8.49	2.11	0.96	0.98	0.16	0.00
California	6.42	9.53	3.11	2.00	0.94	0.16	0.00
Colorado	6.10	9.52	3.41	2.00	1.25	0.16	0.00
Connecticut	7.36	9.27	1.92	1.04	0.71	0.16	0.00
Delaware	6.38	9.57	3.19	2.04	0.99	0.16	0.00
District of Columbia	6.32	9.27	2.95	2.00	0.78	0.16	0.00
Florida	5.92	9.54	3.62	2.00	1.45	0.16	0.00
Georgia	5.41	9.54	4.13	2.00	1.96	0.16	0.00
Hawaii	6.43	9.26	2.83	2.00	0.66	0.16	0.00
Idaho	6.34	9.31	2.98	2.05	0.77	0.16	0.00
Illinois	6.42	9.55	3.13	2.02	0.95	0.16	0.00
Indiana	5.61	8.19	2.58	0.92	1.49	0.16	0.00
Iowa	6.43	9.56	3.14	2.05	0.93	0.16	0.00
Kansas	6.47	8.49	2.02	0.95	0.94	0.13	0.00
Kentucky	5.33	9.25	3.92	2.00	1.75	0.16	0.00
Louisiana	5.05	9.09	4.04	1.55	2.32	0.16	0.00
Maine	5.30	9.58	4.28	2.05	2.07	0.16	0.00
Maryland	6.53	9.53	3.00	2.00	1.00	0.00	0.00
Massachusetts	5.66	9.53	3.86	2.00	1.70	0.16	0.00
Michigan	7.35	9.58	2.24	1.08	0.99	0.16	0.00
Minnesota	6.50	9.54	3.03	2.00	0.94	0.09	0.00
Mississippi	6.41	9.27	2.86	2.00	0.69	0.16	0.00
Missouri	6.36	8.46	2.10	0.92	1.01	0.16	0.00
Montana	7.29	9.54	2.25	1.12	0.97	0.16	0.00
Nebraska	6.35	9.34	3.00	1.81	1.03	0.16	0.00
Nevada	6.36	9.58	3.22	2.05	1.01	0.16	0.00
New Hampshire	6.21	9.52	3.31	2.05	1.09	0.16	0.00
New Jersey	6.44	9.54	3.10	2.00	1.01	0.08	0.00
New Mexico	5.43	9.27	3.84	2.00	1.83	0.00	0.00
New York	5.20	9.54	4.34	2.02	1.06	1.27	0.00
North Carolina	4.86	9.27	4.41	2.00	2.24	0.16	0.00
North Dakota	5.76	9.57	3.80	2.04	1.66	0.11	0.00
Ohio	6.13	9.53	3.40	2.00	1.24	0.16	0.00
Oklahoma	5.56	9.21	3.65	2.00	1.48	0.16	0.00

continued—

Appendix B table 1

Changes in weighted SNAP Policy Index and component indexes for all States, 1996-2014—continued

State	SNAP Policy Index 1996	SNAP Policy Index 2014	SNAP Policy Index difference 1996-2014	Eligibility index difference 1996-2014	Transaction costs index difference 1996-2014	Stigma index difference 1996-2014	Outreach index difference 1996-2014
Oregon	6.39	9.57	3.18	2.04	0.98	0.16	0.00
Pennsylvania	6.41	9.57	3.16	2.05	0.96	0.16	0.00
Rhode Island	6.31	9.57	3.26	2.04	1.06	0.16	0.00
South Carolina	6.50	9.57	3.07	2.04	1.03	0.00	0.00
South Dakota	6.50	8.23	1.73	0.96	0.67	0.09	0.00
Tennessee	5.02	8.44	3.42	0.92	2.33	0.16	0.00
Texas	5.86	9.33	3.47	1.81	1.66	0.00	0.00
Utah	6.25	8.44	2.19	0.92	1.23	0.04	0.00
Vermont	6.34	9.58	3.25	2.05	1.03	0.16	0.00
Virginia	6.39	8.46	2.07	0.92	0.98	0.16	0.00
Washington	6.20	9.57	3.37	2.04	1.17	0.16	0.00
West Virginia	6.41	9.54	3.14	2.00	0.97	0.16	0.00
Wisconsin	6.40	9.54	3.14	2.00	0.97	0.16	0.00
Wyoming	6.46	8.17	1.72	0.92	0.66	0.14	0.00

Note: SNAP = Supplemental Nutrition Assistance Program.

Source: USDA, Economic Research Service, SNAP Policy Database.

Appendix C: Details of the Weighted SNAP Policy Index

The regression weighted (caseload weighted) version of the SNAP Policy Index is formed by weighting each policy based on the policy's estimated contribution to the SNAP caseload. The estimated contributions are produced by Dickert-Conlin et al. (2016) using a dynamic panel-data model of monthly State caseload levels that takes the following form:

$$\Delta logSNAPPerCap_{st} = \sum_{l=1}^{L} \theta_l \Delta \log\_SNAP\_PerCap_{s(t-l)} + \sum_{l=1}^{L} \alpha_l \Delta SNAP\_Policies_{s(t-l)} + \sum_{l=1}^{L} \beta_l \Delta \text{LowInc}_{\text{Policy}_{S(t-l)}} + \sum_{l=1}^{L} \delta_l Unemp_{s(t-l)} + \eta_s + \eta_s t + \Delta\tau_t + \Delta\phi_m + \Delta\xi_{st} + \Delta\epsilon_{st} \quad (2)$$

where the dependent variable is the first differenced natural logarithm of the per capita SNAP caseload ($SNAP\_{PerCap}$) in State s in month t (t=1, …, 252). Caseloads are measured as the number of recipient individuals receiving SNAP. *SNAP_Policies* is the vector of State-level SNAP policies; *LowInc_Policy* is a vector that includes the inflation adjusted maximum Earned Income Tax Credit (EITC) value for a family with two children times the portion of annual Federal EITC payments made in each month, and a control for the earliest implementation of a major Aid to Families with Dependent Children (AFDC) waiver on Federal requirements, which could be used to impose more stringent work requirements, for instance, or TANF; and *Unemp* is the monthly State unemployment rate. All policy and unemployment variables include 24 lags, l, beginning with the month prior to the caseload measure. Including a large number of lags in the independent variables allows for the fact that it may take time before the effects of policy can be measured in the State caseload. Dickert-Conlin et al. control for characteristics common to a State over time with a State fixed effect and allow a within-State trend over time by interacting the State fixed effect with a time trend and the time trend squared. To control for seasonal variation across the calendar year, the authors include a dummy for the calendar month ϕ_m (m = 2, …, 12). The authors also include a dummy variable, $\xi_{\$}$, in State-months affected by the Gulf Coast hurricanes in the fall of 2005, particularly Hurricane Katrina, to control for the temporary spikes in the States associated with Disaster SNAP. Under the first differenced specification, the State fixed effects, η_s and $\eta_s t$, represent deviations from State trends. The regressions are estimated using ordinary least squares (OLS), and State observations are not weighted.

The longrun effects of the SNAP policy variables are reported in table 1, reproduced from the values reported in table 2 of Dickert-Conlin et al. (2016). The index is formed by summing up the estimated effects on caseloads of the policies adopted by the States in each time period. For example, if a State adopts a BBCE policy in a time period, the estimated effect on caseloads for the BBCE policy is added with the estimated effects for any other SNAP policies adopted. The index is then rescaled to be between 0 and 100.

Appendix C table 1

Estimates of the longrun determinant of State policy options on individuals per capita receiving SNAP benefits

Longrun effect of:	SNAP caseload
Exempts at least one but not all vehicles from SNAP asset test	0.089 p=0.033
Exempts all vehicles from SNAP asset test	0.085 p=0.002
Broad-based categorical eligibility (BBCE)	0.100 p=0.001
Eligibility restrictions for adult noncitizens	-0.262 p<0.001
Proportion of working households with short (1-3 month) certification period	-0.174 p<0.001
Simplified reporting policy	0.062 p<0.001
State online application availability	0.025 p=0.071
Proportion of State benefits issued via electronic benefits transfer (EBT)	0.015 p=0.006
Fingerprinting requirement	-0.102 p=0.107
Federally funded radio and TV ad campaign	0.008 p=0.539
Lagged dependent variable	-0.592 p<0.001

Note: SNAP = Supplemental Nutrition Assistance Program. All variables are first-differenced; estimates use Driscoll-Kraay standard errors. Reported estimates are the longrun effects of each covariate. Reported p values represent the statistical significance of the F test on all the lagged policy coefficients. See Dickert-Conlin et al. (2016) for further details.

Source: Estimates derived from table 2 of Dickert-Conlin et al. (2016).