



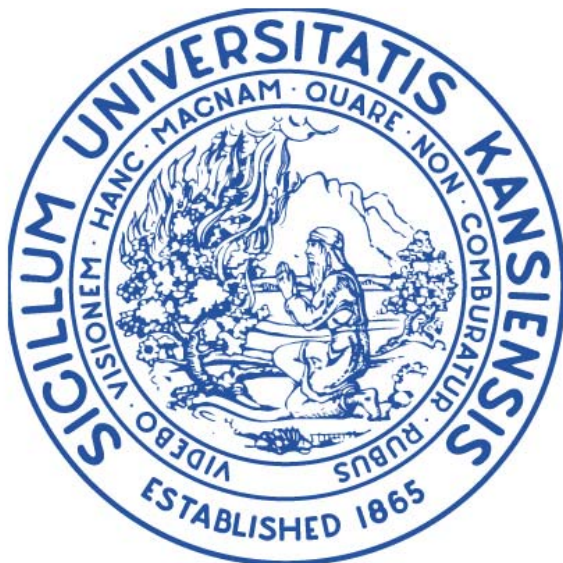
## THE CENTER FOR APPLIED ECONOMICS

# ECONOMIC CHANGE IN KANSAS COUNTIES:

A DATA SUPPLEMENT TO  
“EXAGGERATED TALES  
OF RURAL  
ECONOMIC DECLINE”

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In February 2005, the Center for Applied Economics published a report entitled “Exaggerated Tales of Rural Economic Decline” (Technical Report 05-0225). It details how consistent measurement error on the part of researchers can distort people’s understanding of the economic success of many rural areas. The error results from an inaccurate use of the U.S. Census Bureau codes (often called Beale codes) that define the rural-urban continuum. Researchers tend to systematically exclude economically successful rural areas from their “rural” research sample (and include decaying urban areas). In a rural state like Kansas, researchers and citizens alike should understand this issue so that they are not misled about the economic situation that prevails in Kansas’ various regions.

This Technical Brief supplements the tables in “Exaggerated Tales of Rural Economic Decline” with tables that contain Kansas-specific information on changes in population, employment, and income (1970-2000). The brief also presents decade-by-decade maps that identify the Beale code of each Kansas county. The U.S. Census Bureau updates county Beale codes following each decadal Census. (See Beale code definitions on the next page.)

As Table 1 shows, if people researching the long-run population, employment, or income growth of Kansas counties use the 2000 definition of rural-urban instead of the 1970 definitions, they will systematically *understate* the growth rates in Metro, Non-metro, and Rural areas. This error occurs because many Kansas counties grew out of their rural status between 1970 and 2000. Compare the 1970 and 2000 Beale code maps. Outstanding examples of counties that would generate measurement error, if not properly classified, are: Franklin, Miami, and—especially—Linn Counties in the southern Kansas City area; Harvey and Sumner Counties in the Wichita area; and Ellis, Finney, and Ford Counties in western Kansas. To prevent measurement error, researchers should use Beale code classifications that prevailed at the beginning of the research period under study.

**Table 1 :  
Selected Economic Statistics for Kansas  
Related to 1970 and 2000 Beale Codes**

**NOTE: All numbers below are listed as percentages**

<b>Using 1970 Codes</b>	<b>Population Growth</b>	<b>Employment Growth</b>	<b>Income Growth</b>
Metro (n=7)	37.6	104.0	125.5
Non-Metro (n=54)	4.7	44.7	56.5
Rural (n=44)	-13.0	10.6	18.6
<b>Using 2000 Codes</b>	<b>Population Growth</b>	<b>Employment Growth</b>	<b>Income Growth</b>
Metro ((n=17)	30.0	83.0	117.3
Non-Metro (n=45)	3.4	43.4	52.7
Rural (n=43)	-16.7	5.6	8.9
<b>Difference (2000 less 1970)</b>	<b>Population Growth</b>	<b>Employment Growth</b>	<b>Income Growth</b>
Metro	-7.6	-20.9	-8.2
Non-Metro	-1.3	-1.3	-3.8
Rural	-3.7	-4.9	-9.7

### Beale Code Definitions

**METROPOLITAN COUNTIES (1-3)\***

- 1**—Counties in metro areas of 1 million population or more
- 2**—Counties in metropolitan areas of 250,000 - 1,000,000 population
- 3**—Counties in metropolitan areas of less than 250,000 population

**NON-METROPOLITAN COUNTIES (4-9)**

- 4**—Urban population of 20,000 or more, adjacent to a metropolitan area
- 5**—Urban population of 20,000 or more, not adjacent to a metropolitan area
- 6**—Urban population of 2,500-19,999, adjacent to a metropolitan area
- 7**—Urban population of 2,500-19,999, not adjacent to a metropolitan area
- 8**—Completely rural (no places with a population of 2,500 or more) adjacent to a metropolitan area
- 9**—Completely rural (no places with a population of 2,500 or more) not adjacent to a metropolitan area

\* The most recent Beale codes, released in 2003 to capture the 2000 Census, created a new category #1 by combining two categories reported in past years: “Central counties of metropolitan areas of 1 million population or more” (formerly Code #0) and “Fringe counties of metropolitan areas of 1 million population or more” (formerly Code #1). To make results comparable over time, this report aggregates pre-2003 classifications 0 and 1 into a single class, and lists the combined classification as Code #1 in the report’s tables, consistent with the Census Bureau’s new reporting method.

Source: <http://www.ers.usda.gov/Briefing/Rurality/RuralUrbCon/>

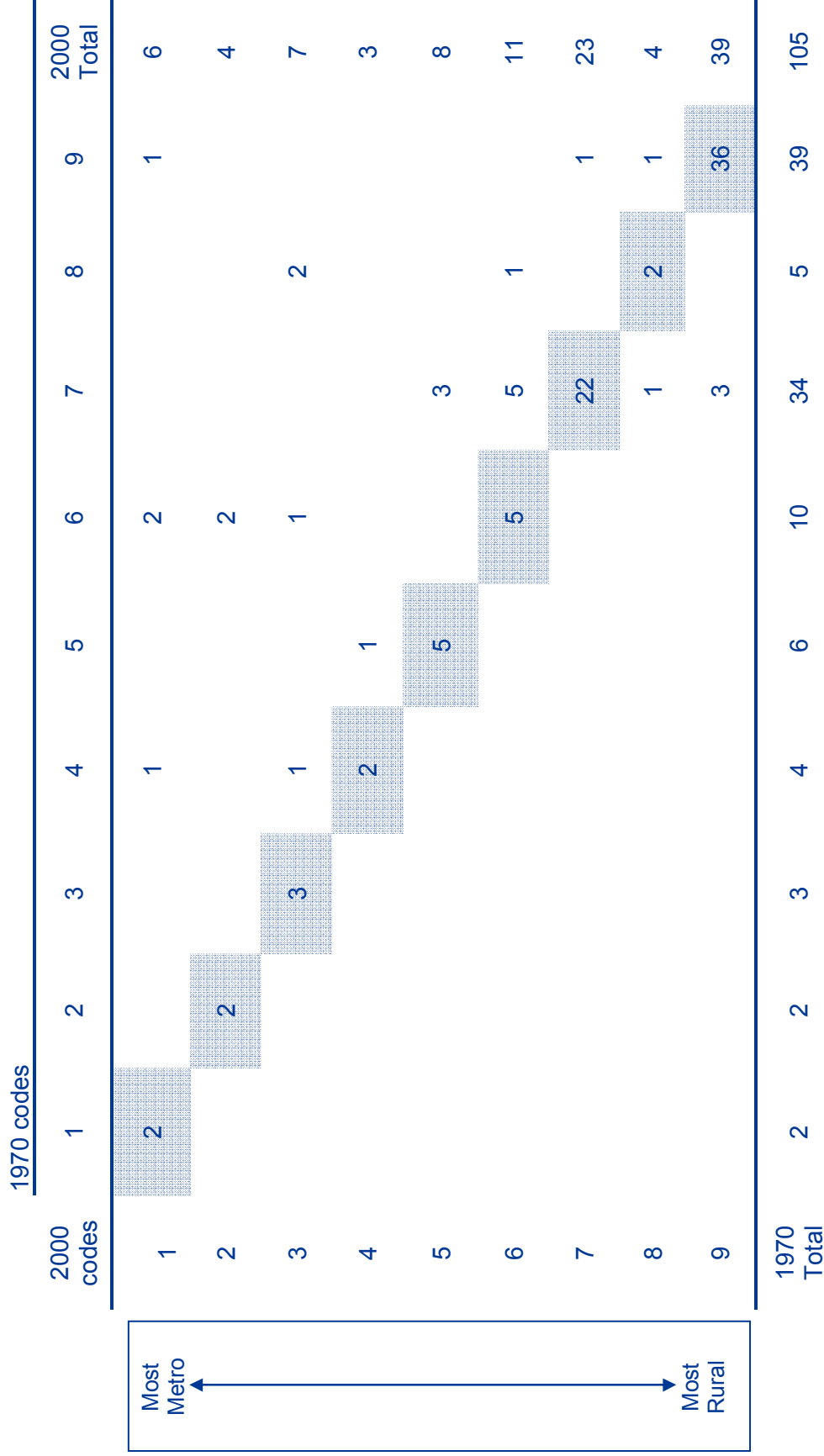






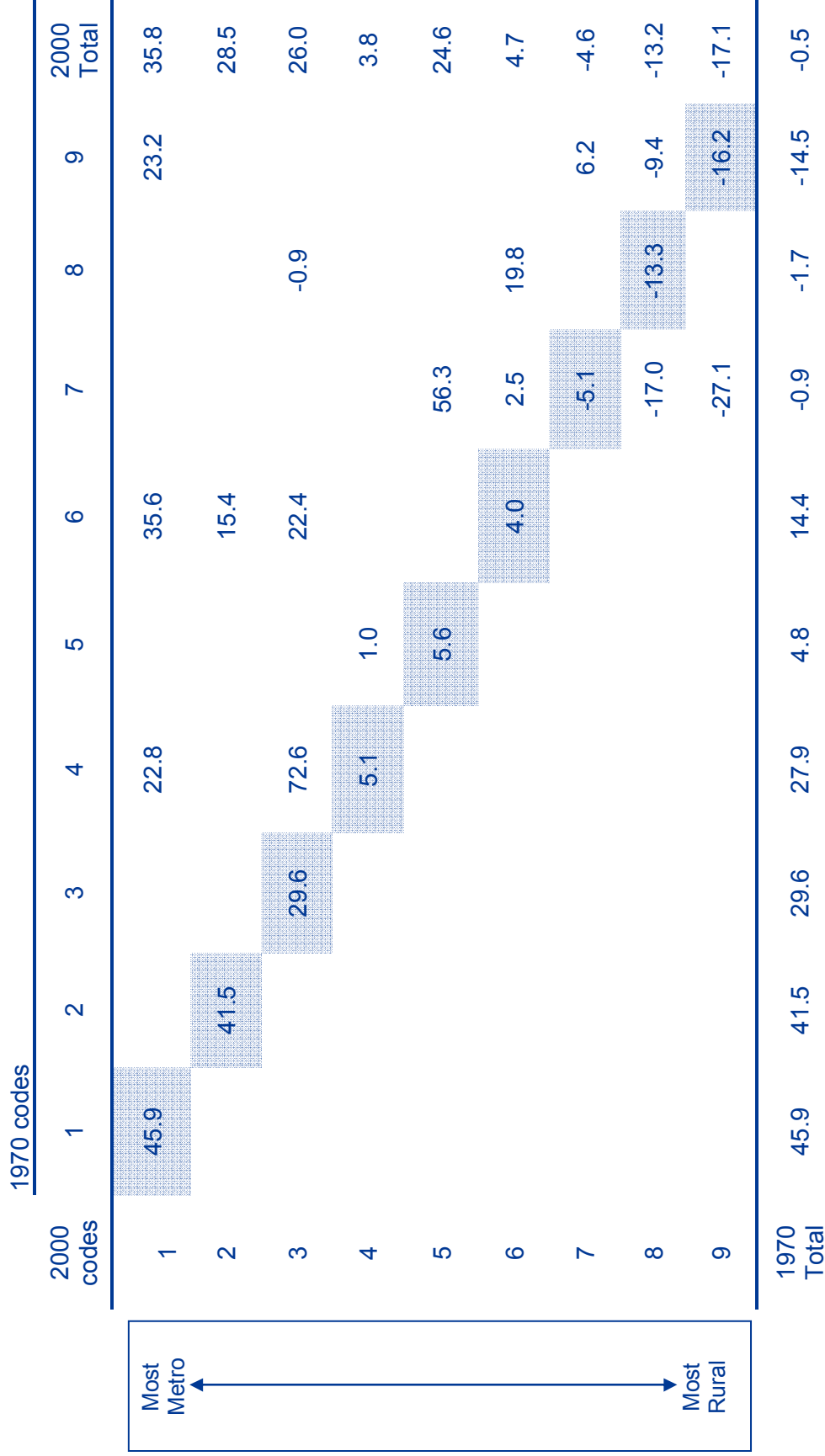


## Number of Kansas Counties by 1970 & 2000 Beale Code Designations



**How to Read this Table:** The shaded cells represent the number of counties that had the same Beale code classifications in both 1970 and 2000. For example, five counties had a Beale code classification of six in both years; in 1970 there were only 2 counties with a Beale code classification of one, while in 2000 there were six.

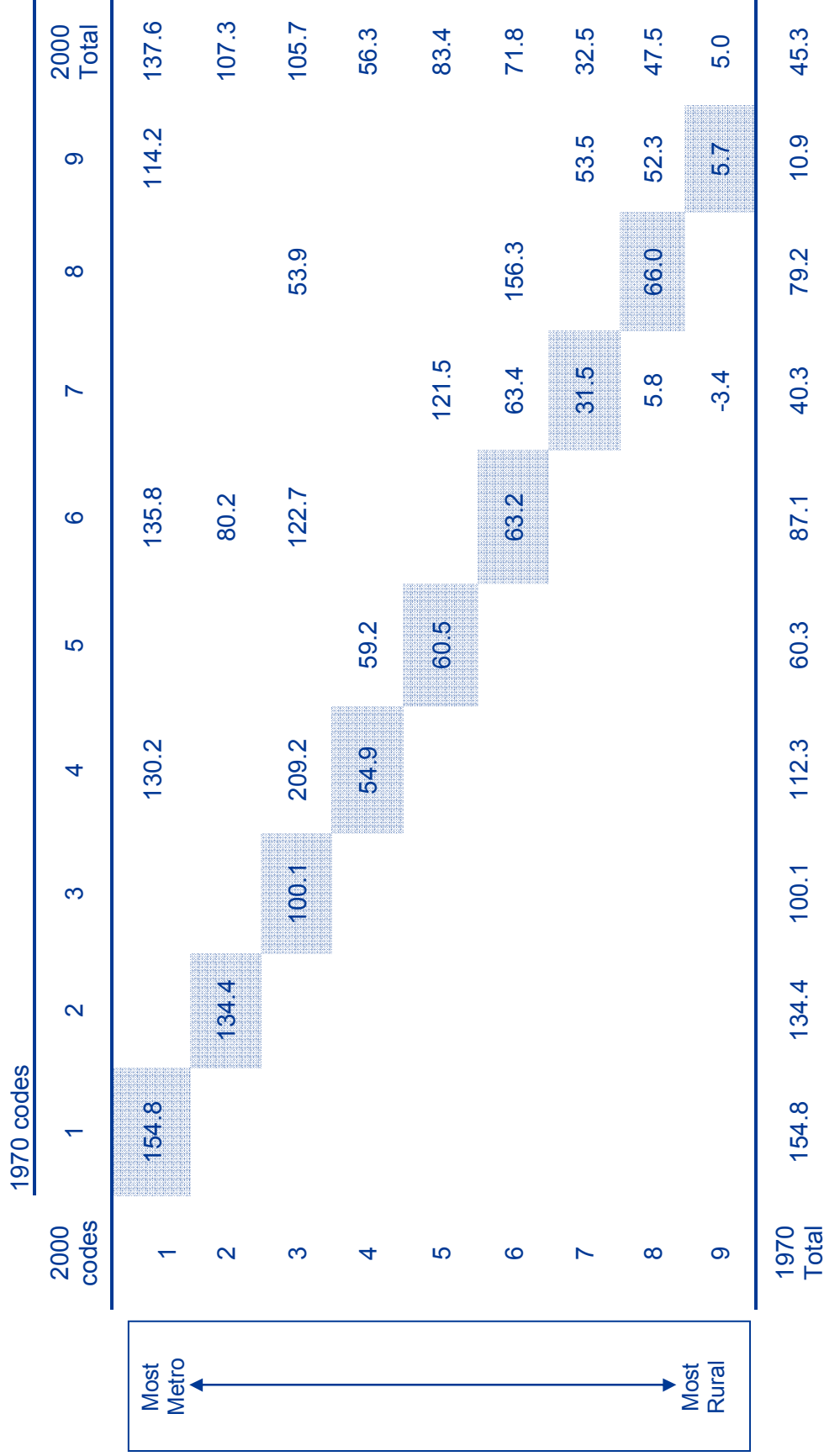
## Kansas Counties by 1970 & 2000 Beale Code Designations Population Change from 1970 - 2000



**How to Read this Table:** Shaded cells indicate average growth (in terms of percentage change) for counties that did not change Beale code classification over the 1970-2000 time period. Cells to the southwest of the shaded diagonal represent averages for counties that acquired higher Beale code classifications. Cells to the northeast of the shaded diagonal represent averages for counties that acquired lower Beale code classifications.



## Kansas Counties by 1970 & 2000 Beale Code Designations Inflation Adjusted Income Change from 1970 - 2000



**How to Read this Table:** Shaded cells indicate average growth (in terms of percentage change) for counties that did not change Beale code classification over the 1970-2000 time period. Cells to the southwest of the shaded diagonal represent averages for counties that acquired higher Beale code classifications. Cells to the northeast of the shaded diagonal represent averages for counties that acquired lower Beale code classifications.

## About the Authors

**Georgeanne Artz** joined the Department of Economics at Iowa State University as an Extension Program Specialist in June, 1999. She works with a number of Extension outreach programs including the Retail Trade Analysis Program and the Iowa Alliance for Cooperative Business Development. She also conducts applied research in conjunction with department faculty on a variety of community and economic development topics, including trends in rural retailing, the impacts of mass merchandisers, and migration and rural labor markets.

Artz is a native of the state of Maine. She attended Yale University where she earned a degree in economics in 1996. After graduation, she served for one year as a VISTA Volunteer in Minot, North Dakota as director of the Entrepreneurship Training Program. Artz received a Master of Science in Resource Economics and Policy from the University of Maine in May, 1999 and is currently a doctoral student in Agricultural Economics at Iowa State University.

**Arthur P. Hall** is the founding Executive Director of the Center for Applied Economics at the University of Kansas School of Business. Before joining the KU School of Business, Hall was Chief Economist in the Public Affairs group of Wichita, KS-based Koch Industries, Inc. In that capacity, he worked with business leaders to define how public policy initiatives would influence the structure of the markets in which the company participates. Koch sponsored Hall's directorship of Kansas Governor Sebelius' Budget Efficiency Savings Teams from April 2003 until his departure from the firm in February 2004.

Before joining Koch Industries in May 1997, Hall was Senior Economist at the Washington, D.C.-based Tax Foundation, where he produced quantitative and qualitative research pertaining to the economics of taxation and acted as an economic advisor to The National Commission on Economic Growth and Tax Reform. Before that, he worked as a financial economist at the U.S. General Accounting Office. Hall has taught university-level economics at both the undergraduate and MBA level. He received his doctorate in economics from the University of Georgia and his bachelor of arts in economics from Emory University.



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### About The Center for Applied Economics

The KU School of Business established the Center for Applied Economics in February of 2004.

The mission of the Center for Applied Economics is to help advance the economic development of the state and region by offering economic analysis and economic education relevant for policy makers, community leaders, and other interested citizens.

The stakeholders in the Center want to increase the amount of credible economic analysis available to decision makers in both the state and region. When policy makers, community leaders, and citizens discuss issues that may have an impact on the economic development potential of the state or region, they can benefit from a wide array of perspectives. The Center focuses on the contributions that markets and economic institutions can make to economic development. Because credibility is, in part, a function of economic literacy, the Center also promotes economics education.

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