Race and Economic Recovery

Alexander Szarka

Race and Recession: How Minorities May Affect Downturns

Abstract:

In the aftermath of the Great Recession, an abundance of literature has focused on the effect of economic recessions on racial minorities. While the converse—the effect of minorities on recessions—has seldom been investigated. Though this paper does not claim to definitively establish exact values for such an effect, it does present evidence that African and Hispanic American populations probably play a role in shortening recessions in the United States (US). The association of African and Hispanic Americans with shorter recessions can be explained by consumption habits of these two groups in relation to white and Asian Americans. Under the assumptions made in this analysis, each additional percentage point of a state's population comprised of African or Hispanic Americans predicts recessions roughly half a month shorter than otherwise. This result is returned after correcting for various sectors of gross domestic product (GDP), the depth of the given recession, and population weights. Additionally, an instrumental variable strategy is used. The proportion of African Americans in states due to exogenous chain migration is plausibly isolated by taking the net change in the African American population percentage across states between 1930 and 1940.

Background:

It is well documented that US ethnic minorities were hit hard by the Great Recession. While unemployment rates were 8.7% for US whites in 2009, African and Hispanic American rates were 14.8% and 12.1% respectively.[1] Whereas white households lost 16% of median wealth between 2005 and 2009, African and Hispanic households lost 53% and 66% respectively.[2]

While such figures starkly reflect the overlapping socioeconomic and racial fault lines in the US, they do not tell the whole story. Racial disparity during the Great Recession is retained even after correcting for relevant factors. Carlos Garriga, Lowell Ricketts, and Don Schlagenhauf shed light on the dramatic loss of household wealth for African and Hispanic Americans. They document the higher levels of foreclosure amongst these groups after taking into account a host of factors such as geography and income.[3]

The finding of Garriga et al. is only one example of how ethnic minorities in the US have economic preferences and tendencies that diverge from the reference white population. The natural question therefore arises: what effect do the preferences and tendencies of US minorities have on recessions? At least for African and Hispanic Americans, consumption habits have persisted over time after correcting for relevant factors, and so it is probable that these two groups influence recessions in some capacity. But to what extent and in what way?

The literature on the question is remarkably scant. Plenty of articles cover the impact of recessions on minorities, as well as the relationship of demographics with economies generally.

---

[1] The US Bureau of Labor Statistics.
[2] Pew Research.
[3] Garriga et al., 1.

Still, I could find no article that directly addresses the influence demographics have on recessions. William Rodgers comes close in his study of monetary policy effects on African and white Americans. He finds that monetary policy has a higher impact on African Americans—making monetary easing a more useful policy instrument if directed at African Americans and contractionary policy more harmful.[4]

In Fall 2018, Martin Petersen and I found an ostensibly statistically significant link between minorities and economic recovery.[5] We used a state's non-white population percentage in our regression model to identify the effect on recession recovery time. The results predicted that, all else equal, each additional percentage point in a state's non-white population delivers the state to pre-recession employment levels about one-third of a month earlier than otherwise.[6] [7] Though this finding is returned at the 95% confidence level, it is liable to suffer from endogeneity. Moreover, the regression specification included insufficient sectoral corrections and lacked a strong explanation of a likely casual avenue for how minorities influence recessions. Nonetheless, the finding proved to be a key motivating factor for further investigation into the economic implications of demographics.

The percentage of the US population classified as non-white is overwhelmingly African and Hispanic American, around 77% percent. For this reason as well as their well documented and similar consumption habits, I focus on these two populations in this paper.[8] Specifically,

---

[4] Rodgers, 4.
[5] Project for econometrics under Professor Evgeniya Duzhak.
[6] Petersen and Szarka, 4.
[7] In this paper, "than otherwise" is meant to have the same meaning as "ceteris paribus" or "all else equal."
[8] US Census.

evidence suggests that both populations consume different items and have higher marginal propensities to consume than white and Asian Americans.[9]

The Consumption Hypothesis: Consumption Habits of African and Hispanic Americans

I draw on the substantial literature examining the wealth disparity in the US, which also focuses on the disparity for savings amongst groups. When compared to whites, African and Hispanic Americans tend to save less both absolutely and as a proportion of their income. This observation, together with how these groups spend, is referred to as the "consumption hypothesis" in this paper. In other words, the consumption habits of these groups is the hypothesized mechanism through which the business cycle is influenced.

Mariela Dal Borgo shows that African and Hispanic Americans have low savings rates after controlling for income and socio-demographic factors.[10] Dal Borgo details the discrepancy in saving and wealth by underscoring the low level of assets held by Hispanic Americans and the low capital gains for African Americans.[11] Joseph Altonji and Ulrich Doraszelski attribute the

[9] Asian Americans tend to have economic behavior more similar to whites than African and Hispanic Americans. Though I use the term "minority" loosely in discussing the motivation and background of this analysis, results should be interpreted according to the two groups under study.
[10] Dal Borgo, 1.
[11] Dal Borgo, 1.

wealth gap between African and white Americans to heritable wealth and saving rates.[12] [13] Additionally, in a working paper for the National Bureau of Economic Research (NBER), Kai Kuan, Mark Cullen, and Sepideh Modrek document that African and Hispanic American workers participate less in 401(k) savings plans. Even conditional on participation in 401(k) savings plans, African Americans contribute a lower percentage of income to such accounts, and both African and Hispanic Americans are more likely to withdraw funds prematurely.[14] [15]

These findings suggest that African and Hispanic Americans do in fact save relatively less than whites. Since individuals in these two groups tend to consume relatively more and save relatively less than their white counterparts, they have a higher marginal propensity to consume. This is illustrated below in equation (1), where saving functions as an investment:

(1) Income = Consumption + Investment

With a higher marginal propensity to consume, a larger multiplier effect can be inferred for African and Hispanic Americans. Due to the larger multiplier, these groups stand to shorten recessions in demand-side downturns.[16]

But if African and Hispanic Americans save less, how are they spending their money? One answer is real estate. Shamila Choudhury points to historical factors in explaining the relative preference of whites to enter the financial market and the relative preference of African Americans to spend on housing.[17] In making the larger point, Kerwin Charles, Erik Hurst, and

---

[12] Altonji and Doraszelski, 49.
[13] Choudhury, 1.
[14] Kuan et al. 2.
[15] This is found after correcting for a host of factors, including health and employer.
[16] This assumes all else is equal and is provided the multiplier effect is not overwhelmed by crowding out. It also assumes that there are no other characteristics of these groups that significantly mitigate the multiplier.
[17] Choudhury, 1.

Nikolai Roussanov document the outsize expenditure of African and Hispanic Americans on housing.[18] They also estimate that African and Hispanic Americans generally spend about 25% more on visible goods for a given income level than whites.[19] [20] Visible goods consist of expenditures on apparel (including accessories such as jewelry), expenditures on personal care, and outlays on vehicles excluding maintenance.[21] The high levels of consumption for visible goods amongst these groups are documented consistently over the past seventeen years and are explained by Charles et al. through a status-seeking hypothesis.

According to the status-seeking hypothesis, the ownership of visible goods signals status more intensely in African and Hispanic American communities than in other communities of similar economic positions. In order to spend more on visible goods, African and Hispanic Americans spend less on both healthcare and education as well as save less, which contributes to lower levels of overall wealth.[22] Charles et al. find that the spending behaviors of African Americans comes at a steep cost, accounting for around half of the wealth gap with white Americans.[23]

This paper does not explore the question empirically, but the visible goods consumed by minorities may well be associated with a greater multiplier effect beyond simply complementing a marginal propensity to consume analysis. Perhaps visible goods are linked to cyclical industries that are more responsive to recessions. Whereas the consumption of goods such as healthcare

---

[18] Charles et al., 7.
[19] Charles et al., 3 and 11.
[20] It should be noted that these findings are bolstered after factoring in housing and that housing itself can be considered a form of visible good, subject to the status-seeking hypothesis.
[21] Charles et al., 11.
[22] Charles et al., 5.
[23] Charles et al., 5.

and education are more likely to be constant over time, spending on visible goods may preserve at risk businesses in places with minorities, while those same business would fail in whiter areas. On the flipside, healthcare and education demand are likely more inelastic uniformly. For whatever reason, if visible goods tend to produce a greater multiplier when consumed, the findings of Charles et al. would directly support the hypothesis that greater population percentages of African and Hispanic Americans shorten demand-side recessions.[24]

Once a recession is underway, it is clear how a larger multiplier can hasten recovery for a demand-side recession with the introduction of a stimulus package. What is perhaps less obvious is how the introduction of populations with different consumption habits can produce a secular change in recession length.

Essentially, if groups with higher marginal propensities to consume replace, as a proportion of the population, groups with lower marginal propensities to consume, there will be more aggregate demand at all times until short run aggregate supply adjusts to a higher price level. If the replacement occurs gradually and consistently across time, then the long run adjustment mechanism cannot take full effect until the population is totally replaced with the higher marginal propensity to consume groups, *ceteris paribus*.

This is one way to view what happened between 1960 and 2010, the relevant years for the recessions analyzed in this paper. Over this period, most states grew their combined African and Hispanic American population both absolutely and as a percentage of the overall population. Of course, this explanation relies on assuming plenty of factors such as continuous and mostly

[24] Under the same assumptions expressed in footnote (15).

constant growth rates. Historically, factors influencing long run aggregate supply, including immigration and demographic change, also played a complicating role for this explanation.

Still, if the secular shortening of recessions is driving the results in this paper, the aggregate demand curve has perpetually and gradually jumped outward since the 1960s, leading to recessions shortened possibly due to both less intense downturns and faster recovery.[25]

Models and Data (Ordinary Least Squares):

The National Bureau of Economic Research (NBER) publishes statistics identifying peaks and troughs of the economy for the US as a whole by taking into account various economic parameters. However, recession dates on the state level do not always align with the national NBER recession dates. Given that recession statistics do not readily exist on a state-by-state basis, recession length for states must be defined. For each state, I mark the peak nonfarm seasonally adjusted employment level within twelve months of the NBER national recession date as the pre-recession baseline. The amount of time it takes to reach the baseline level following the employment downturn is the recession length. This approach is the same as Martha Olney and Aaron Pacitti use in their paper "The Rise of Services, Deindustrialization,

[25] This assumes all else is equal. Moreover, the observation raises an important corollary that this paper does not directly empirically explore: how inflationary gaps may be affected due to demographics. Further discussion of this point is in the "Implications" section.

and the Length of Economic Recovery."[26] While measures of this length can be derived from the Bureau of Economic Analysis, I am grateful to Professor Olney for giving me direct access to her dataset.

The consumption differences of African and Hispanic Americans when compared to white and Asian Americans explain a shortening recession role for such groups only in demand-side recessions. This paper focuses on the recessions from 1969 through 2007, which featured, to varying degrees, shifts of the aggregate demand curve.[27] [28] Six recessions are analyzed that span the period.[29] With economic sectors as control variables, earlier recessions are not included due to the incompleteness of GDP sector level data prior to 1963.[30] It should also be noted that the recessionary activity of 1980 and 1981 is treated as one recession, since analysis at the state level reveals fifty single dip recessions, as opposed to double-tip variants.[31]

The Ordinary Least Squares (OLS) model for measuring the effect of African and Hispanic American population is expressed in equation (2):

$$(2)\quad Y_{st} = \beta_0 + \beta_1 (AAandHis)_{st} + \beta_2 [(\sum_{i=1}^{3} (sector/GDP)_{st}/3] + \beta_3 depth_{st} + \alpha_s + \gamma_t + (error)_{st}$$

Y_{st} is the dependent variable, representing recession length for state s for recession t. Y_{st} is measured as the length in months of seasonally adjusted nonfarm employment peak to

---

[26] Olney, 10.
[27] Labont and Makinen, 8.
[28] The possible exception is the recessionary activity that begins in 1973, which featured stagflation.
[29] These include recessions beginning in 1969, 1973, 1980, 1990, 2001, and 2007.
[30] Olney, 10.
[31] Olney, 10.

employment peak. When states never enter a recession, recession length is set to zero. When a state never recovers its peak level of employment before the next downturn begins, I use two approaches. The first is to omit such observations. In some sense, omitting the observations preserves the integrity of the methodology. At the same time, it seems dubious to omit recessions that never recover. Therefore, I adopt a second approach where I set the recession length for such states equal to the longest complete recession of any state for that recession.[32] While the outputs of these two methods vary considerably for OLS, using instrumental variables yields remarkably similar estimated effects and significance.[33]

Throughout this paper, when the first approach is used, regressions are referred to with the label "recession values omitted." When the second approach is used, regressions are referred to with the label "recession values added."

The variable *AAandHis* is the variable of interest and represents the percentage of African and Hispanic Americans for the given state in the first year of the recession. β_1, the corresponding effect, reflects the average influence of these two groups on recession length.[34] Population percentages are attained through the decadal census. Interpolation is used for the population percentages corresponding to 1969, 1973, 2001, and 2007. For Hawaii and Alaska, there is no census data prior to 1970 for the percentage of Hispanic Americans. For these states, I simply use the 1970 estimate of the Hispanic American population percentage. Due to the low

---

[32] Recovery is not completed in seventeen cases.

[33] To reduce redundancy, I only include the "values added" approach in the "Limits of the Instrument" section. There, I convey what it takes to remove virtually all statistical significance from the instrumental variables regression.

[34] The estimated coefficient corresponding to this variable is the average effect of African and Hispanic Americans. When I interpret the estimated coefficient throughout the paper, I use the phrases "African and Hispanic American" or "African or Hispanic American." Explicitly interpreting the variable as a hybrid could remove any ambiguity, however.

levels of Hispanic Americans in these states in 1970, as well as the small likelihood of a significant in-or-out migration over the one year period from 1969 to 1970, I favored duplication over extrapolation.

The effect on recession length of a given economic sector is represented by β_2. Six main sectors of the economy are included in the regressions as controls: services, goods, mining, agriculture, construction, and government.[35] Each represents the percentage of the state's GDP that the given sector accounts for. I use two approaches for determining the sector's share of state GDP. Both average the sector GDP shares in the state over three years. Averaging over three years reduces year-to-year variations, making it conducive to identifying long term trends. The first approach involves the year of recession data as well as the two that precede it. Olney points out, however, that averaging the sector share over three years prior to the year in which the recession starts not only smooths out annual fluctuations but reduces endogeneity with respect to recession depth.[36] I adopt this lagged approach as well, which yields similar estimates and significance.[37]

The variable $depth_{st}$ controls for the depth of the recession and is the state's percentage drop in employment from peak to trough—an indicator of the severity of the recession. A deeper downturn means a longer recession, so the inclusion of $depth_{st}$ isolates the severity from the length. The inclusion of $depth_{st}$ into the specification may ultimately be questionable if the variable of interest is hypothesized as simply having a general effect on recessions. For example, it is possible that the consumption habits of African and Hispanic Americans influence either the

[35] These are the six main sectors referred to by Olney and Pacitti.
[36] Olney and Pacitti, 15.
[37] Simply using "year of" values also yields similar results in terms of estimates and significance, though I do not record the results in this paper.

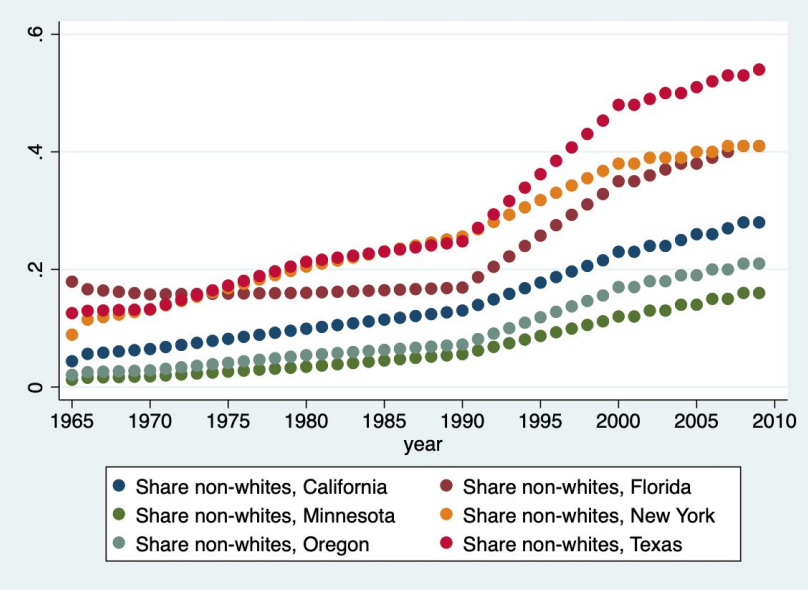
recession's length or severity or both. At the same time, it is possible that effects may only be registered as statistically significant if the length and severity of the recession are aggregated. Indeed, the omission of $depth_{st}$ dramatically increases the significance of the variable of interest for all the specifications in this paper. This notwithstanding, the analysis maintains $depth_{st}$ as a control throughout for robustness.

In equation (2), α_s and γ_t capture fixed effects for state and time. State and fixed effects are used in the OLS regression because changes in the percentage of African and Hispanic Americans occur across states and vary over time. Olney and Pacitti explain that "state fixed effects capture [such things as] time-invariant state level characteristics[,] policies [and] other unobserved heterogeneity across states. [Time] fixed effects capture recession-specific characteristics, including federal fiscal and monetary policies that affect all states more or less equally."[38] [39]

For selected states, the percentage of non-whites over time is illustrated below in figure 1, where the demographic differences across states are dynamic. Due to demographic changes, of which African and Hispanic Americans comprise the largest component, state and time fixed effects do not capture the variable of interest, enabling fixed effects in the OLS specification.

Figure 1: Percentage of Non-Whites for selected states (1965-2010)

[38] Olney and Pacitti, 13.
[39] Olney and Pacitti cite Jonathan McCarthy and Egon Zakrajsek in their explanation.



Sources: Data interpolated from the United States Census Bureau.

The OLS regression is performed with the robust command in Stata yielding errors clustered at the state level.[40] I use robust standard errors for all regressions in this paper to correct for the possibility of heteroskedasticity. Since panel data is used, the risk of autocorrelation is especially present.[41] Charting residual errors against those errors squared reveals distinct patterns suggesting heteroskedasticity.[42]

One potential reason why heteroskedasticity is a threat is due to African and Hispanic Americans' consumption habits in states in which they have low populations. If individuals are isolated from their ethnic community, the status-seeking hypothesis advocated by Charles et al. may no longer apply. The status-seeking hypothesis drives spending on visible goods based off of community perception. According to the theory, if no large minority communities exist in a state, but rather only individuals isolated from their ethnic community, then those individuals

[40] Olney, 14.
[41] Stock and Watson, 413.
[42] I do not include such graphs in this paper as their addition would nearly double the appendix without adding much value to the paper.

may not act in the same way as they would if their ethnic community was present. When a sizable enough community develops, only then may the effects as predicted by Charles et al. be registered. This would cause standard errors to change as states become more African or Hispanic American. At the same time, this is merely one possible way for heteroskedasticity to be introduced into the regression.

Table (1) conveys the outputs for the variable of interest below. Using the "values omitted" approach with non-lagged sector averages, the specification yields results suggesting that for each percentage point increase in a state's African and Hispanic American population, that state is expected to experience recessions that last roughly one-fifth of a month shorter than otherwise, *ceteris paribus*. This result is not statistically significant at traditional levels and is obtained by omitting observations where states never fully recover.

Alternatively, using the "values added" approach, where the values of the longest recessions are imputed for states that never fully recover, the estimated effects change. For each additional percentage point of a state's population that is African and Hispanic American, recessions are estimated to be 0.43 months shorter than otherwise—approximately thirteen days, *ceteris paribus*. This estimated coefficient is at the cusp of statistical significance with 95% confidence. The table below shows the similar estimates and significance when using lagged sectors.

TABLE 1:

OLS (Using Non-Lagged Sectors)	Coef. (% of Months)	Robust Std. Err.	t	P>t

African and Hispanic American Percentage (Recession Values Omitted)	-21.18	15.91	-1.33	0.19
African and Hispanic American Percentage (Recession Values Added)	-43.01	12.28	-1.95	0.057
OLS (Using Lagged Sectors)	Coef.	Robust Std. Err.	t	P>t
African and Hispanic American Percentage (Recession Values Omitted)	-21.08	16.37	-1.29	0.20
African and Hispanic American Percentage (Recession Values Added)	-43.96	21.52	-2.04	0.046

Notes: Full regression outputs are available in appendix tables A1 through A2, respectively, for non-lagged sectors with recession values omitted and added; A3 and A4, respectively, for lagged sectors with recession values omitted and added. Outputs are rounded to two significant digits for all regression tables outside the appendix.
Sources: Data for all regressions from United States Census Bureau and Olney and Pacitti (2017).

Models and Data (Instrumental Variables):

In the regressions above, it is possible that the covariance of *AAandHis* with the error term does not equal zero, thereby introducing bias into the estimate. In order to address the possibility of bias, an instrumental variables approach is deployed. The instrument I use is the net change in states' African American population percentage between 1930 and 1940. The

intuition of this instrument is the same that undergirds instruments used by Ellora Derenoncourt and Leah Boustan in analyzing the effects of the Great Migration.

Throughout the twentieth century, African Americans from the South moved to the North in what became known as the Great Migration. Chain migration was an important factor in determining to which places African Americans moved. Conditional on deciding to leave the South, African American migrants tended to move to places where previous migrants from their communities had already settled. As a result, a portion of the African American population in states is due to chain migration, which is plausibly exogenous to other factors that influence recession length. If that portion can be isolated, then a potentially useful instrument can be created.

As Derenoncourt states, "[the] variation in migrant composition is plausibly orthogonal to characteristics of destinations that influence the location choices of...migrants." The crux of this assumption allows for "variation in pre-1940 migrant composition to interact with variation in outmigration from origin locations driven by origin factors alone ("push factors"). Push factors include war spending and shocks to cotton as well as other economic sectors in the South, for example, tobacco and mining."[43] Essentially, the instrument Derenoncourt proposes is migration predicted from regions of the South to the North driven exclusively by exogenous shocks over the period from 1940 to 1970. The construction of her instrument is demonstrated below in equation (3).[44]

[43] Derenoncourt, 13.
[44] Derenoncourt, 13.

(3)

$$\text{Predicted black pop}_{CZ}^{1940-1970} = \frac{\hat{\Delta}b_{\text{urban},CZ}^{1940-1970}}{\text{pop}_{\text{urban},CZ}^{1940}}$$

$$\hat{\Delta}b_{\text{urban},CZ}^{1940-1970} = \sum_{j \in S} \sum_{c \in CZ} \omega_{jc}^{1935-1940} \times \hat{m}_{j}^{1940-1970}.$$

Adapting her instrument for my analysis renders w_{jc} as the absolute value of the share of recent African American migrants from southern state *j* living in northern state *c* in 1940. The data on "recent African American migrants" is obtained from data in the 1940 census asking residents what county they resided in 1935. Some 340,000 African American individuals report settling in a new county, allowing specific county linkages to be ascertained between the North and South that can be scaled up to the state level.

Vast differences in state characteristics are present between where migrants left and where they settled. To address this, states that receive migrants are registered in the same way as states that lose an equal number of migrants. As a result, the amount of control variables needed are limited. Relevant controls are variables pertaining to states that have neither large in-flows nor out-flows of African American migrants over 1930 to 1940. For instance, mining is an important control variable, because of its prevalence in the rocky mountain states where African Americans neither left nor entered in large numbers over the period.

Though I was interested in using the instrument discussed above from equation (3), I could not find any readily parsed and digitized data from the 1940 census detailing the migrants from 1935. With Professor Derenoncourt unable to divulge her dataset yet due to her publishing timeline, using the instrument was a logistical impossibility. However, the questions I am

investigating in this paper are fewer and less specific than those she sought. My observations are at the state, not city or county levels. I also have a single variable of interest. Due to these factors, I am able to use the net change in the states' African American population percentage from 1930 to 1940 as a plausibly valid instrument. By using the change over this period, the individuals that moved between 1935 and 1940 are picked up, which is the relevant source of variation in Derenoncourt's instrument.

Below, schematic (A) conveys the assumptions of relevant variables that influence recession length. Schematic (A) thereby explains the controls in equation (2).[45] African and Hispanic American populations may be influenced exclusively by the percentage of state sector GDP and urbanism. However, that influence may cut both ways, introducing simultaneity into the point estimate of interest for OLS.

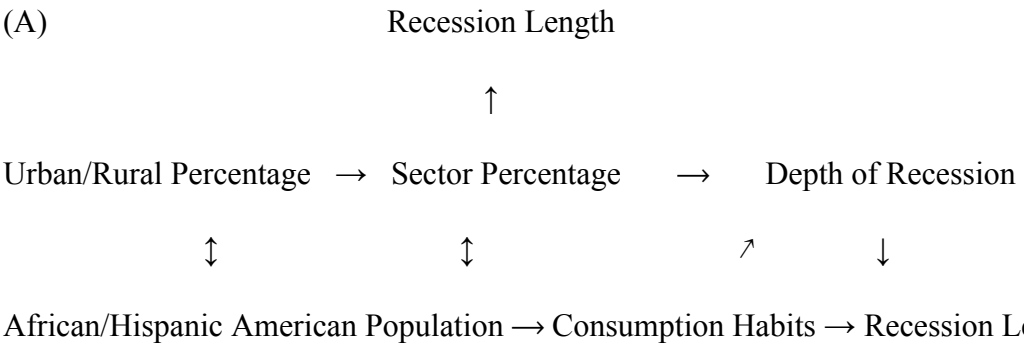
Schematic (B) shows how the intended instrument is plausibly exogenous and relevant, assuming depth and sectors of the economy are controlled for. Essentially, schematic (B) is assuming that after correcting for the sectors of the economy, the only thing that is left to influence the change in the African American share of the population is chain migration—the plausibly exogenous linkages established between Northern and Southern counties.

In regard to the exogeneity condition, the instrument carries two further assumptions: (1) that the demographic composition of the state would otherwise be the same without migration of African Americans from 1930 to 1940 and (2) that the sector percentages from 1930 to 1940 are

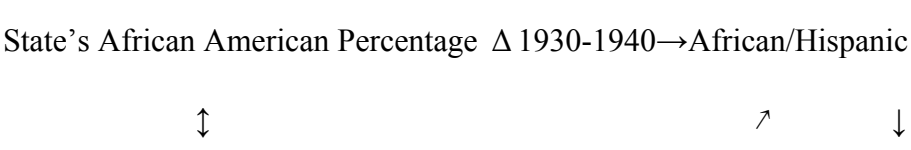
[45] With the exception of fixed effects.

not meaningfully related to recession lengths from 1969 through 2007 outside of the sector percentages from 1967 through 2007.[46]

(A)



(B)



Controlling for depth and sector percentage using non-lagged sectors yields a first stage regression that suggests the relevance condition is satisfied. F-stats for the variable of interest are larger than ten for both the "values added" and "values omitted" regressions.

In the second stage regression, point estimates are approximately -47.18 and -52.29.[48] This implies that for each additional percentage point of African and Hispanic Americans in the state, recessions are expected to decrease in length by a little less or a little more than half a

[46] Though the recessions studied in this paper begin in 1969, the lagged sector percentage averages use data from as early as 1967, as discussed on pages 12-13.
[47] State's percentage between 1969 and 2007.
[48] For "values added" and "values omitted" regressions, respectively.

month, respectively and *ceteris paribus*. Both values increase in magnitude slightly when the observations are weighted by the square root of the population during the time of the recession.[49] For all these regressions, results are indicated with 95% confidence.

Using the lagged sectors yields similar results, with point estimates attenuated somewhat for the standard regressions, but greater in magnitude with the "iweight" command for the "values omitted" regression. Again, for the first stage regressions the instrument is strong and in the second stage regressions point estimates are significant with 95% confidence.

TABLE 2:

First Stage 2SLS (Using Non-Lagged Sectors)	Coef. (% of Months)	Robust Std. Err.	T Statistic	P>t
Change in African American Percentage 1930-1940 (Values Added)	8.49	1.78	4.76	0.00
Change in African American Percentage 1930-1940 (Values Omitted)	8.50	1.84	4.62	0.00
Change in African	7.69	0.034	225.66	0.00

[49] This is accomplished through Stata's "iweight" command.

American Percentage 1930-1940 (Values Added with "Iweight" Command)				
Change in African American Percentage 1930-1940 (Values Omitted with "Iweight" Command)	7.83	0.036	215.01	0.00
First Stage 2SLS (Using Lagged Sectors)	Coef. (% of Months)	Robust Std. Err.	T Statistic	P>t
Change in African American Percentage 1930-1940 (Values Added)	8.67	1.77	4.91	0.00
Change in African American Percentage 1930-1940 (Values Omitted)	8.65	1.83	4.73	0.00
Change in African American Percentage 1930-1940 (Values Added with "Iweight" Command)	7.81	0.034	229.34	0.00

Change in African American Percentage 1930-1940 (Values Omitted with "Iweight" Command)	7.85	0.036	215.19	0.00
Second Stage 2SLS (Using Non-Lagged Sectors)	Coef. (% of Months)	Robust Std. Err.	T Statistic	P>t
African and Hispanic American Percentage (Values Added)	-47.18	21.58	-2.19	0.035
African and Hispanic American Percentage (Values Omitted)	-52.29	22.17	-2.36	0.023
African and Hispanic American Percentage (Values Added with "Iweight" Command)	-56.26	24.98	-2.25	0.030
African and Hispanic American Percentage (Values Omitted with "Iweight" Command)	-58.83	26.43	-2.23	0.032
Second Stage 2SLS (Using Lagged	Coef. (% of	Robust Std. Err.	T Statistic	P>t

Sectors)	Months)			
African and Hispanic American Percentage (Values Added)	-44.63	21.20	-2.11	0.041
African and Hispanic American Percentage (Values Omitted)	-50.38	21.61	-2.33	0.025
African and Hispanic American Percentage (Values Added with "Iweight" Command)	-54.03	26.09	-2.07	0.045
African and Hispanic American Percentage (Values Omitted with "Iweight" Command)	-58.86	27.59	-2.13	0.039

Notes: Full regression outputs located in Appendix A5-A12.

Variations and Robustness Checks:

Though the schematic diagrams above offer a plausible methodology for the instrumental variable regression, I subject the regressions to alterations as robustness checks. For all regressions, the estimated coefficient is always negative. This is consistent with the findings above and with the consumption hypothesis, which predicts shorter recessions for states with larger African and Hispanic American populations. At the same time, including more variables tends to produce similar point estimates with weaker significance.

For the sake of brevity and to reduce redundancy, I include only the second stage output results from the regressions that use the non-lagged sector averages in this section. For the same reason, I also do not use the "iweight" command for these regressions. First stage regressions always yield F-stats above ten, allowing the relevance condition to be satisfied. Full outputs for non-lagged as well as lagged outputs are in the appendix beginning from A13. For lagged and non-lagged regressions, trends and statistical significance levels are similar, so the analysis applies for either method.

Including subdivisions of the six sectors as well as correcting for the population size still yields similar point estimates with 95% confidence. Below, the goods sector is subdivided and replaced with durable and non-durable goods subsectors. The other original five sectors, as well as accommodations and finance subsectors, are included. The state population at the start of recessions is also added. The output predicts that for each additional percentage point of African and Hispanic Americans, recessions will be just less than half a month in length, *ceteris paribus*.

TABLE 3:

Second Stage (2SLS)	Coef. (% of	Robust Std. Err.	T Statistic	P>t

	Months)			
African and Hispanic American Percentage (Values Added)	-48.62	22.34	-2.17	0.046
African and Hispanic American Percentage (Values Omitted)	-48.21	22.32	-2.07	0.036

Notes: Full regression outputs located in Appendix A13 and A14. Lagged sector counterparts located in A15 and A16.

Urbanism is potentially another factor that drew immigrants and also influences consumption habits. In schematics (A) and (B), the only importance assumed for urbanism is its correlation with sectors of the economy.[50] Nonetheless, it is possible that the schematics are wrong and that dense living conditions could also affect recession length independently of other factors.[51] If this is the case, it must be included as a corrective.

Including a state's urban percentage and population size in the original instrumental variable regression yields similar point estimates but with only 90% confidence. Urban percentage and population size, like the state percentage of African and Hispanic Americans, is determined through decadal census interpolation for 1969, 1973, 2001, and 2007. For these

[50] Importance in terms of corrections that need to be made in the instrumental variable regressions.

[51] It is conceivable, for example, that dense living areas cause greater cognizance of the material wealth of others. This "keeping up with the Jones'" mentality could make it easier to part with money and hence produce a greater multiplier for the urban population. This would be similar to the status-seeking hypothesis of Charles et al.

regressions, significance is attenuated. For both the "values added" and "values omitted" regressions, the estimated coefficient falls in magnitude. Both outputs reveal that recessions are predicted to be just less than 0.45 months shorter than otherwise with each additional percentage point of African and Hispanic Americans, *ceteris paribus*.

TABLE 4:

Second Stage 2SLS (Using Non-Lagged Sectors)	Coef. (% of Months)	Robust Std. Err.	T Statistic	P>t
African and Hispanic American Percentage (Values Added)	-44.65	25.79	-1.73	0.091
African and Hispanic American Percentage (Values Omitted)	-44.83	25.39	-1.77	0.086

Notes: Full regression outputs located in Appendix A17 and A18. Lagged sector counterparts located in A19 and A20

While the attenuation of significance limits the certainty of the findings presented earlier in Table (2), the estimated coefficients do not change much. It is also important to keep in mind

that variable additions may be redundant. Subsectors may be unnecessary additions, because they are already captured by larger sectors (ie: finance as a subsector of services). Furthermore, a variable such as the state's urban percentage may be multicollinear with the agricultural sector. It also may be the case that no effect on recovery from urban consumption habits persist after correcting for race, as is potentially suggested by the variable's lack of statistical significance in the regressions that include it.[52]

It is true that including enough subsectors to the original regression without omitting the overarching sectors reduces statistical insignificance for all variables. This is conveyed in the section below. However, significance with 95% confidence is usually restored for the variable of interest if assumptions are relaxed and the variable $depth_{st}$ is omitted—the percentage drop in employment for the recession. Dropping this variable would mean looking at a more holistic effect of demographics on recessions. While I do not believe that the inclusion of urbanism nor more sectors than the core six are necessary, the diminishment of significance ultimately undermines the definitiveness of the conclusions that can be drawn.

The Limits of the Instrument:

[52] See Appendix. A17-A21, A23, A24, and A26.

Predictably, including enough independent variables drastically reduces both the significance and magnitude of the estimated coefficients. Including all sectors and subsectors, depth, population, and urbanism yields an estimated coefficient predicting recessions short by 39.66% of a month, *ceteris paribus*.[53] This estimate fails to achieve statistical significance at even the 10% level. Still, the estimated coefficient is not far off other regressions and, with a corresponding p-value less than 0.16, the estimate can still be considered suggestive.

The outputs are drastically affected with the inclusion of sub-categories of the dependent variable. For example, including the employment peak to trough length—in an IV regression that only corrects for the six main sectors and depth—yields a coefficient predicting shortening by approximately 12% of a month. This predicted effect is around one quarter of the effect without the addition of the peak to trough measure.[54] With a corresponding t-value of -1.18, the estimate is statistically insignificant at traditional levels, though both the estimate and its significance are still recognizable when compared to the corresponding output in Table (2).

Alternatively, with the peak to trough inclusion as well as all sectors, subsectors, urbanism, depth, and population, the estimated coefficient for the variable of interest all but evaporates. The magnitude of expected shortening is reduced to 0.8% of a month with a corresponding t-value of -0.05, indicating statistical insignificance.

The findings convey the limitations of the instrument, though the inclusion of such factors is probably unnecessary and needlessly removes variation.

---

[53] All these regressions use the "values added" approach to reduce redundancy. All regressions discussed in this section use non-lagged sectors, though both lagged and non-lagged outputs are in the Appendix A21-A26.

[54] All regressions discussed in this section use the "recession values added" approach, as well as "non-lagged" sector averages.

TABLE 5:

Second Stage 2SLS (Using Non-Lagged Sectors)	Coef. (% of Months)	Robust Std. Err.	T Statistic	P>t
African and Hispanic American Percentage (Values Added) with Sectors and Subsectors, Depth, Urban and Population Correctives	-39.66	27.55	-1.44	0.159
African and Hispanic American Percentage (Values Added) with Depth, Six Main Sectors, and Peak to Trough Correctives	-11.73	9.97	-1.18	0.246
African and Hispanic American Percentage (Values Added) with Sectors and Subsectors, Urban, Population, and Peak to Trough Correctives	-0.84	15.70	-0.05	0.96

Notes: Full regression outputs located in Appendix A21-A23. Lagged sector counterparts located in A24-A26.

Implications:

Confirmation of African and Hispanic American populations hastening economic recovery has theoretical and political implications. Most notably, the consumption hypothesis suggests that with losses in aggregate demand, dollar-for-dollar stimulus go farther if provided to some groups over others. Such a finding could be used to justify a policy whereby relatively more stimulus dollars are deliberately injected into communities that have a higher proportion of African or Hispanic Americans.

The consumption hypothesis predicts African and Hispanic Americans decrease recession length. By the same token, the hypothesis predicts that inflationary gaps would likely be associated with such groups.[55] In theory, this could potentially mean that African and Hispanic Americans could make recessions more severe in terms of dropping employment, but make recessions shorter after controlling for depth. Interestingly, switching $depth_{st}$ into the dependent variable position for the regressions in this paper did not show this. Like recession length, the depth of a given recession seems to be negatively correlated with African and Hispanic American populations as well—and at statistically significant levels. Though the potential for African and Hispanic Americans to produce inflationary gaps is not the subject of direct inquiry in this paper, it raises interesting questions for further research.

Specifically, if the multiplier effect is at play, why does it only seem to have the desirable shortening consequence without being associated with larger drops in employment? Does this

[55] At least in conditions where the two groups' combined share of the state population increases, so long run equilibrium is not yet reached.

mean the consumption habits of African and Hispanic Americans reduce both recession severity and length? Is the casaul avenue and methodology presented in this paper theoretically sound, and, if not, what alternative explanation would account for the strong correlations between demographics and recessions?

On an ending note, it is important to underscore that while confirmation of the consumption hypothesis would suggest that the economic position of a community may benefit from the presence of African and Hispanic Americans in times of recession, the finding would not imply that either group fares well in times of downturn. Indeed, that minorities suffered disproportionately from the Great Recession of 2007-08 is consistent with the notion that they nonetheless hastened their states' recoveries.

Conclusion:

African and Hispanic Americans spend their money in different ways than other demographics in the United States. This is true in regard to the kinds of goods consumed as well as the marginal propensity to consume. As a result, money in the hands of the average African or Hispanic American likely gives rise to a larger multiplier than the same amount in the hands of otherwise identical individuals. Due to the numerous ways variables can be measured or included in regressions, this paper does not have complete conviction in any single point estimate. It does,

however, present a core set of assumptions that are plausibly necessary and sufficient for a valid instrumental variable approach. With such assumptions in place, evidence presented in this paper suggests that statewide recessions may be shortened by around half a month with each additional percentage point of the population being comprised of African or Hispanic Americans. Despite this finding, estimates and significance ultimately deteriorate with the addition of enough variables. While addition of further variables seems unnecessary, the numerous assumptions that must be made for the instrumental variable approach renders it prudent to regard the conclusions in this paper as more suggestive than definitive and to encourage further research into the questions raised by this analysis.

References:

Altonji, Joseph G., and Ulrich Doraszelski. "The Role of Permanent Income and Demographics in Black/White Differences in Wealth." *Journal of Human Resources* XL, no. 1 (2005): 1–30. https://doi.org/10.3368/jhr.xl.1.1.

Borgo, Mariela Dal. "Ethnic and Racial Disparities in Saving Behavior." *The Journal of Economic Inequality*, April 15, 2017. https://doi.org/10.2139/ssrn.2931189.

Charles, Kerwin Kofi, Erik Hurst, and Nikolai Roussanov. "Conspicuous Consumption and Race." *The Quarterly Journal of Economics, MIT Press*, 2009. https://doi.org/10.3386/w13392.

Choudhury, Sharmila. "Racial and Ethnic Differences in Wealth and Asset Choices." *Social Security Bulletin* 64, no. 4 (2001). https://www.ssa.gov/policy/docs/ssb/v64n4/v64n4p1.html.

Derenoncourt, Ellora. "Can You Move to Opportunity? Evidence from the Great Migration," November 14, 2018, 1–100. https://economics.yale.edu/sites/default/files/derenoncourt_jmp_2018.pdf.

Garriga, Carlos, Lowell R. Ricketts, and Don Schlagenhauf. "The Homeownership Experience of Minorities During the Great Recession." *Review* 99, no. 1 (2017): 139–67. https://doi.org/10.20955/r.2017.139-67.

Kuan, Kai Yuan, Mark Cullen, and Sepideh Modrek. "Racial Disparities in Savings Behavior for a Continuously Employed Cohort." *NBER Working Paper Series*, 2015. https://doi.org/10.3386/w20937.

Petersen, Martin and Alexander Szarka. "Economic Recovery Length and Diversity." November 28, 2018.

"Wealth Gaps Rise to Record Highs Between Whites, Blacks, Hispanics." *The Pew Research Center*, July 26, 2011. https://www.pewsocialtrends.org/2011/07/26/wealth-gaps-rise-to-record-highs-between-whites-blacks-hispanics/.

Labont, Marc, and Gail Makinen. "The Current Economic Recession: How Long, How Deep, and How Different From the Past?" *CRS Report for Congress*, January 10, 2002. https://www.everycrsreport.com/files/20020110_RL31237_3dfa2a994f8c6dc60ab14bb2daab081a32bfed92.pdf.

Olney, Martha L., and Aaron Pacitti. "The Rise Of Services, Deindustrialization, And The Length Of Economic Recovery." *Economic Inquiry* 55, no. 4 (April 2017): 1625–47. https://doi.org/10.1111/ecin.12467.

Rodgers, William M. “African American and White Differences in the Impacts of Monetary Policy on the Duration of Unemployment.” *American Economic Review* 98, no. 2 (2008): 382–86. https://doi.org/10.1257/aer.98.2.382.

Stock, James H., and Mark W. Watson. *Introduction to Econometrics*. Harlow, UK: Pearson Education Limited, 2015.

The US Census Bureau (1930-2010). 1930, 1940, 1960-2010 Censuses. https://web.archive.org/web/20080725044857/http://www.census.gov/population/www/documentation/twps0056/twps0056.html

The US Bureau of Labor Statistics. “The Recession of 2007-2009.” *BLS Spotlight on Statistics*, February 2012. http://www.bls.gov/spotlight/2012/recession/pdf/recession_bls_spotlight.pdf.

Appendix

Key Terms:

1) "AAandHis" represents the variable of interest—the percentage of the population that is African or Hispanic American. Data for "AAandHis" is expressed with decimal points differently than for the other variables. Point estimates of "AAandHis" are expressed as a percent of months. The point estimates for the other variables are interpreted in an analogous way but in terms of the number of months directly.
2) "p2pwithout" is an independent variable and represents recession length from employment peak to employment peak with the "values omitted" approach.
3) "Newp2p" is an independent variable and represents recession length from employment peak to employment peak with the "values added" approach.
4) "svc" represents the service sector.
5) "goods" represents the goods sector.
6) "farm" represents the agricultural sector.
7) "mining" represents the mining sector.
8) "gov" represents the government sector.
9) "constr" represents the construction sector.
10) "finance" represents the finance subsector.
11) "accom" represents the accommodations subsector.
12) "durables" represents the durables subsector.
13) "nondur" represents the non-durables subsector.

14) "change30thru40" is the instrument and represents the percentage change in the African American share of the state's population between 1930 and 1940.
15) "depth" represents the depth of the recession.
16) "pop" represents the state population at the time of the recession.
17) "percenturban" represents the percentage of the state's population that resides in urban areas at the time of the recession,
18) "p2t" is an independent variable used to strip away the significance in the output for the variable of interest by taking away variation in the dependent variable. It represents the time between the employment peak (within twelve months of the NBER defined national recession) to employment trough for the given state.

Outputs:

A1: OLS Regression with Recession Values Omitted and Non-lagged Sectors

p2pwithout	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-21.17567	15.91047	-1.33	0.189	-53.14896	10.79763
goods_gdp_3yr_avg	167.4374	252.038	0.66	0.510	-339.052	673.9268
farm_gdp_3yr_avg	167.9064	252.0174	0.67	0.508	-338.5415	674.3544
mining_gdp_3yr_avg	168.6043	252.0875	0.67	0.507	-337.9846	675.1931
constr_gdp_3yr_avg	172.3264	252.3132	0.68	0.498	-334.7161	679.3688
gov_gdp_3yr_avg	169.3023	251.7939	0.67	0.504	-336.6965	675.301
svc_gdp_3yr_avg	168.6022	251.9633	0.67	0.507	-337.737	674.9413
depth	7.631522	.6114535	12.48	0.000	6.40276	8.860284
year						
1973	-11.29286	3.324078	-3.40	0.001	-17.97285	-4.612877
1980	4.401837	3.535205	1.25	0.219	-2.702422	11.5061
1990	9.724824	4.876832	1.99	0.052	-.0755377	19.52519
2001	15.06633	8.266915	1.82	0.074	-1.546655	31.67932
2007	15.22288	8.559533	1.78	0.082	-1.978145	32.4239
_cons	-16855.71	25198.86	-0.67	0.507	-67494.72	33783.29
sigma_u	16.08484					
sigma_e	12.416471					
rho	.62661133	(fraction of variance due to u_i)				

A2: OLS Regression with Recession Values Added and Non-Lagged Sectors

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-43.01005	22.02402	-1.95	0.057	-87.26898	1.248879
goods_gdp_3yr_avg	142.2393	253.3795	0.56	0.577	-366.946	651.4245
farm_gdp_3yr_avg	142.8311	253.3612	0.56	0.575	-366.3173	651.9794
mining_gdp_3yr_avg	143.369	253.5049	0.57	0.574	-366.0682	652.8062
constr_gdp_3yr_avg	146.5208	253.7008	0.58	0.566	-363.31	656.3517
gov_gdp_3yr_avg	143.9629	253.2698	0.57	0.572	-365.0018	652.9277
svc_gdp_3yr_avg	143.2133	253.4133	0.57	0.575	-366.0398	652.4664
depth	7.186011	.5849892	12.28	0.000	6.010431	8.361591
year						
1973	-10.17735	3.257841	-3.12	0.003	-16.72423	-3.630476
1980	5.672372	3.392867	1.67	0.101	-1.14585	12.49059
1990	11.02903	4.890438	2.26	0.029	1.201331	20.85674
2001	17.12312	9.068659	1.89	0.065	-1.101031	35.34727
2007	25.9255	10.84863	2.39	0.021	4.124371	47.72664
_cons	-14317.7	25340.24	-0.57	0.575	-65240.82	36605.42
sigma_u	15.274853					
sigma_e	14.088248					
rho	.54034553	(fraction of variance due to u_i)				

A3: OLS Regression with Recession Values Omitted and Lagged Sectors

p2pwithout	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-21.08159	16.36603	-1.29	0.204	-53.97035	11.80718
goods_gdp_lagged_3yr_avg	161.0802	185.2901	0.87	0.389	-211.2743	533.4346
svc_gdp_lagged_3yr_avg	162.1289	185.2648	0.88	0.386	-210.1746	534.4324
farm_gdp_lagged_3yr_avg	161.5304	185.1159	0.87	0.387	-210.474	533.5347
mining_gdp_lagged_3yr_avg	162.1106	185.2774	0.87	0.386	-210.2182	534.4394
constr_gdp_lagged_3yr_avg	165.0636	185.4205	0.89	0.378	-207.5528	537.6801
gov_gdp_lagged_3yr_avg	162.7151	184.8342	0.88	0.383	-208.723	534.1533
depth	7.749537	.6095012	12.71	0.000	6.524698	8.974375
year						
1973	-11.83713	3.371011	-3.51	0.001	-18.61143	-5.062832
1980	3.460432	3.665046	0.94	0.350	-3.904753	10.82562
1990	8.90477	5.33583	1.67	0.102	-1.817981	19.62752
2001	15.92046	9.153601	1.74	0.088	-2.47439	34.31531
2007	15.14333	9.786496	1.55	0.128	-4.523374	34.81003
_cons	-16205.12	18521.41	-0.87	0.386	-53425.28	21015.04
sigma_u	14.888415					
sigma_e	12.523847					
rho	.58562244	(fraction of variance due to u_i)				

A4: OLS Regression with Recession Values Added and Lagged Sectors

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-43.96353	21.51954	-2.04	0.046	-87.20866	-.7183866
goods_gdp_lagged_3yr_avg	123.7059	193.1784	0.64	0.525	-264.5006	511.9124
svc_gdp_lagged_3yr_avg	124.6219	193.2541	0.64	0.522	-263.7368	512.9805
farm_gdp_lagged_3yr_avg	124.1587	192.9522	0.64	0.523	-263.5932	511.9106
mining_gdp_lagged_3yr_avg	124.761	193.1216	0.65	0.521	-263.3314	512.8533
constr_gdp_lagged_3yr_avg	126.8927	193.5623	0.66	0.515	-262.0853	515.8707
gov_gdp_lagged_3yr_avg	125.199	192.8656	0.65	0.519	-262.379	512.7769
depth	7.309589	.5824624	12.55	0.000	6.139087	8.480091
year						
1973	-10.57532	3.359039	-3.15	0.003	-17.32556	-3.825077
1980	4.67426	3.6384	1.28	0.205	-2.637379	11.9859
1990	9.54339	5.390405	1.77	0.083	-1.289034	20.37581
2001	16.65981	10.05702	1.66	0.104	-3.550533	36.87015
2007	24.64487	11.8822	2.07	0.043	.7667017	48.52304
_cons	-12451	19318.13	-0.64	0.522	-51272.24	26370.23
sigma_u	14.030668					
sigma_e	14.206023					
rho	.49379005	(fraction of variance due to u_i)				

A5: IV Regression with Recession Values Added and Non-lagged Sectors

First-stage regressions

Source	SS	df	MS	Number of obs	=	50
				F(8, 41)	=	7.72
Model	.320589617	8	.040073702	Prob > F	=	0.0000
Residual	.212810959	41	.005190511	R-squared	=	0.6010
				Adj R-squared	=	0.5232
Total	.533400576	49	.010885726	Root MSE	=	.07205

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0157355	.0065669	-2.40	0.021	-.0289977	-.0024734
goods_gdp_3yr_avg	.2630585	.8507941	0.31	0.759	-1.455155	1.981272
farm_gdp_3yr_avg	.2562139	.8509269	0.30	0.765	-1.462268	1.974696
mining_gdp_3yr_avg	.2690152	.8506968	0.32	0.753	-1.449002	1.987032
constr_gdp_3yr_avg	.2342389	.8461566	0.28	0.783	-1.474609	1.943087
gov_gdp_3yr_avg	.262084	.8509343	0.31	0.760	-1.456413	1.980581
svc_gdp_3yr_avg	.263596	.8507472	0.31	0.758	-1.454523	1.981715
change30thru40	8.491228	1.782613	4.76	0.000	4.891169	12.09129
_cons	-26.0428	85.05696	-0.31	0.761	-197.8188	145.7332

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-47.17873	21.57979	-2.19	0.035	-90.75999	-3.597462
depth	2.146908	1.808537	1.19	0.242	-1.505506	5.799321
goods_gdp_3yr_avg	-27.86423	95.7208	-0.29	0.772	-221.1763	165.4478
farm_gdp_3yr_avg	-28.78669	95.64343	-0.30	0.765	-221.9425	164.3691
mining_gdp_3yr_avg	-27.79255	95.72759	-0.29	0.773	-221.1183	165.5332
constr_gdp_3yr_avg	-29.21517	95.20568	-0.31	0.761	-221.4869	163.0566
gov_gdp_3yr_avg	-28.75652	95.75967	-0.30	0.765	-222.1471	164.6341
svc_gdp_3yr_avg	-27.74719	95.81823	-0.29	0.774	-221.256	165.7617
_cons	2821.399	9574.607	0.29	0.770	-16514.91	22157.71

Instrumented: AAandHis
Instruments: depth goods_gdp_3yr_avg farm_gdp_3yr_avg mining_gdp_3yr_avg constr_gdp_3yr_avg gov_gdp_3yr_avg svc_gdp_3yr_avg change30thru40

A6: IV Regression with Recession Values Omitted and Non-Lagged Sectors

First-stage regressions

Source	SS	df	MS	Number of obs	=	49
				F(8, 40)	=	7.42
Model	.315588245	8	.039448531	Prob > F	=	0.0000
Residual	.212803613	40	.00532009	R-squared	=	0.5973
				Adj R-squared	=	0.5167
Total	.528391858	48	.011008164	Root MSE	=	.07294

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0156935	.0067437	-2.33	0.025	-.0293231	-.002064
farm_gdp_3yr_avg	.2585666	.8638065	0.30	0.766	-1.487251	2.004385
mining_gdp_3yr_avg	.2713801	.8635983	0.31	0.755	-1.474017	2.016777
constr_gdp_3yr_avg	.236494	.8588006	0.28	0.784	-1.499207	1.972195
gov_gdp_3yr_avg	.2644443	.8638289	0.31	0.761	-1.481419	2.010308
svc_gdp_3yr_avg	.26598	.8636871	0.31	0.760	-1.479597	2.011557
goods_gdp_3yr_avg	.2654153	.8636803	0.31	0.760	-1.480148	2.010978
change30thru40	8.504566	1.840074	4.62	0.000	4.785638	12.22349
_cons	-26.27942	86.34724	-0.30	0.762	-200.7937	148.2349

p2pwithout	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-52.29289	22.16716	-2.36	0.023	-97.0944	-7.491375
depth	1.929724	1.865776	1.03	0.307	-1.841151	5.700599
farm_gdp_3yr_avg	-35.13122	97.4971	-0.36	0.720	-232.1802	161.9178
mining_gdp_3yr_avg	-34.11128	97.55928	-0.35	0.728	-231.2859	163.0634
constr_gdp_3yr_avg	-35.35441	96.92652	-0.36	0.717	-231.2502	160.5414
gov_gdp_3yr_avg	-35.09556	97.60522	-0.36	0.721	-232.3631	162.1719
svc_gdp_3yr_avg	-34.15567	97.66212	-0.35	0.728	-231.5382	163.2268
goods_gdp_3yr_avg	-34.1868	97.56044	-0.35	0.728	-231.3638	162.9902
_cons	3458.075	9758.731	0.35	0.725	-16265.06	23181.21

Instrumented: AAandHis
Instruments: depth farm_gdp_3yr_avg mining_gdp_3yr_avg constr_gdp_3yr_avg gov_gdp_3yr_avg svc_gdp_3yr_avg goods_gdp_3yr_avg change30thru40

A7: IV Regression with Recession Values Added and Non-lagged Sectors using "Iweight" Command

First-stage regressions

Source	SS	df	MS		
Model	508.910198	8	63.6137747	Number of obs	= 88,725
Residual	323.038224	88,716	.003641262	F(8, 88716)	= 17470.27
				Prob > F	= 0.0000
				R-squared	= 0.6117
				Adj R-squared	= 0.6117
Total	831.948422	88,724	.009376814	Root MSE	= .06034

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.014315	.0001241	-115.38	0.000	-.0145581	-.0140718
goods_gdp_3yr_avg	.2886699	.0244519	11.81	0.000	.2407445	.3365954
farm_gdp_3yr_avg	.2815054	.0244526	11.51	0.000	.2335786	.3294323
mining_gdp_3yr_avg	.29671	.0244491	12.14	0.000	.24879	.3446301
constr_gdp_3yr_avg	.258089	.0243754	10.59	0.000	.2103134	.3058646
gov_gdp_3yr_avg	.287599	.0244532	11.76	0.000	.2396711	.335527
svc_gdp_3yr_avg	.2892433	.0244497	11.83	0.000	.241322	.3371645
change30thru40	7.690824	.0340816	225.66	0.000	7.624024	7.757623
_cons	-28.59021	2.444721	-11.69	0.000	-33.38184	-23.79858

newp2p	Robust Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-56.26298	24.98468	-2.25	0.030	-106.7206	-5.805399
depth	1.784324	1.397648	1.28	0.209	-1.038283	4.606931
goods_gdp_3yr_avg	-43.62927	125.8164	-0.35	0.731	-297.7206	210.4621
farm_gdp_3yr_avg	-44.78529	125.7397	-0.36	0.724	-298.7219	209.1513
mining_gdp_3yr_avg	-43.36996	125.8394	-0.34	0.732	-297.5078	210.7678
constr_gdp_3yr_avg	-46.04581	125.5072	-0.37	0.716	-299.5128	207.4212
gov_gdp_3yr_avg	-44.78266	125.8749	-0.36	0.724	-298.9922	209.4268
svc_gdp_3yr_avg	-43.23594	125.8511	-0.34	0.733	-297.3973	210.9255
_cons	4397.111	12582.14	0.35	0.729	-21013.03	29807.25

Instrumented: AAandHis
Instruments: depth goods_gdp_3yr_avg farm_gdp_3yr_avg mining_gdp_3yr_avg constr_gdp_3yr_avg gov_gdp_3yr_avg svc_gdp_3yr_avg change30thru40

A8: IV Regression with Recession Values Omitted and Non-Lagged Sectors using "Iweight" Command

First-stage regressions

Source	SS	df	MS	Number of obs	=	84,471
				F(8, 84462)	=	16300.11
Model	497.700754	8	62.2125942	Prob > F	=	0.0000
Residual	322.368562	84,462	.003816729	R-squared	=	0.6069
				Adj R-squared	=	0.6069
Total	820.069316	84,470	.009708409	Root MSE	=	.06178

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0140342	.0001288	-108.98	0.000	-.0142866	-.0137818
goods_gdp_3yr_avg	.3139581	.0251067	12.50	0.000	.2647492	.363167
farm_gdp_3yr_avg	.3067757	.0251073	12.22	0.000	.2575656	.3559859
mining_gdp_3yr_avg	.3221382	.0251047	12.83	0.000	.2729332	.3713432
constr_gdp_3yr_avg	.2814863	.0250182	11.25	0.000	.2324509	.3305217
gov_gdp_3yr_avg	.3128467	.0251078	12.46	0.000	.2636356	.3620577
svc_gdp_3yr_avg	.3148509	.0251063	12.54	0.000	.2656427	.3640592
change30thru40	7.828567	.0364096	215.01	0.000	7.757205	7.89993
_cons	-31.12552	2.51023	-12.40	0.000	-36.04555	-26.20549

p2pwithout	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-58.83406	26.43483	-2.23	0.032	-112.2608	-5.407281
depth	1.707219	1.460104	1.17	0.249	-1.243762	4.6582
goods_gdp_3yr_avg	-46.52815	126.6567	-0.37	0.715	-302.5109	209.4546
farm_gdp_3yr_avg	-47.70002	126.5976	-0.38	0.708	-303.5634	208.1633
mining_gdp_3yr_avg	-46.26826	126.678	-0.37	0.717	-302.294	209.7574
constr_gdp_3yr_avg	-48.75184	126.1641	-0.39	0.701	-303.739	206.2353
gov_gdp_3yr_avg	-47.67847	126.7075	-0.38	0.709	-303.7639	208.407
svc_gdp_3yr_avg	-46.17921	126.7285	-0.36	0.717	-302.3072	209.9487
_cons	4688.643	12667.45	0.37	0.713	-20913.23	30290.51

Instrumented: AAandHis
Instruments: depth goods_gdp_3yr_avg farm_gdp_3yr_avg mining_gdp_3yr_avg constr_gdp_3yr_avg gov_gdp_3yr_avg svc_gdp_3yr_avg change30thru40

A9: IV Regression with Recession Values Added and Lagged Sectors

First-stage regressions

Source	SS	df	MS	Number of obs	=	50
				F(8, 41)	=	7.68
Model	.319859664	8	.039982458	Prob > F	=	0.0000
Residual	.213540913	41	.005208315	R-squared	=	0.5997
				Adj R-squared	=	0.5215
Total	.533400576	49	.010885726	Root MSE	=	.07217

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0152093	.0066932	-2.27	0.028	-.0287264	-.0016921
goods_gdp_lagged_3yr_avg	.9467759	1.078269	0.88	0.385	-1.230832	3.124383
svc_gdp_lagged_3yr_avg	.947425	1.07851	0.88	0.385	-1.230671	3.125521
farm_gdp_lagged_3yr_avg	.9410781	1.079114	0.87	0.388	-1.238238	3.120394
mining_gdp_lagged_3yr_avg	.9530833	1.0787	0.88	0.382	-1.225396	3.131563
constr_gdp_lagged_3yr_avg	.9219386	1.076055	0.86	0.397	-1.251199	3.095076
gov_gdp_lagged_3yr_avg	.9456044	1.078222	0.88	0.386	-1.231909	3.123118
change30thru40	8.677388	1.768456	4.91	0.000	5.105917	12.24886
_cons	-94.44652	107.8336	-0.88	0.386	-312.2209	123.3278

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-44.63317	21.20012	-2.11	0.041	-87.44769	-1.818649
depth	2.265403	1.798863	1.26	0.215	-1.367473	5.89828
goods_gdp_lagged_3yr_avg	-17.81007	132.3187	-0.13	0.894	-285.0331	249.4129
svc_gdp_lagged_3yr_avg	-17.70555	132.4293	-0.13	0.894	-285.152	249.7409
farm_gdp_lagged_3yr_avg	-18.64932	132.376	-0.14	0.889	-285.9881	248.6894
mining_gdp_lagged_3yr_avg	-17.81919	132.4583	-0.13	0.894	-285.3242	249.6859
constr_gdp_lagged_3yr_avg	-18.17945	132.0457	-0.14	0.891	-284.8512	248.4923
gov_gdp_lagged_3yr_avg	-18.75522	132.3485	-0.14	0.888	-286.0385	248.528
_cons	1811.402	13238.19	0.14	0.892	-24923.66	28546.46

Instrumented: AAandHis
Instruments: depth goods_gdp_lagged_3yr_avg svc_gdp_lagged_3yr_avg farm_gdp_lagged_3yr_avg mining_gdp_lagged_3yr_avg constr_gdp_lagged_3yr_avg gov_gdp_lagged_3yr_avg change30thru40

A10: IV Regression with Recession Values Omitted and Lagged Sectors

First-stage regressions

Source	SS	df	MS		
				Number of obs	= 49
				F(8, 40)	= 7.37
Model	.314882174	8	.039360272	Prob > F	= 0.0000
Residual	.213509685	40	.005337742	R-squared	= 0.5959
				Adj R-squared	= 0.5151
Total	.528391858	48	.011008164	Root MSE	= .07306

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0153045	.0068891	-2.22	0.032	-.0292279	-.0013811
goods_gdp_lagged_3yr_avg	.9432589	1.092552	0.86	0.393	-1.264871	3.151389
svc_gdp_lagged_3yr_avg	.9438517	1.092828	0.86	0.393	-1.264835	3.152539
farm_gdp_lagged_3yr_avg	.9375646	1.093406	0.86	0.396	-1.27229	3.14742
mining_gdp_lagged_3yr_avg	.9495523	1.092996	0.87	0.390	-1.259476	3.15858
constr_gdp_lagged_3yr_avg	.9185901	1.090222	0.84	0.404	-1.284832	3.122012
gov_gdp_lagged_3yr_avg	.9420806	1.092509	0.86	0.394	-1.265962	3.150123
change30thru40	8.649581	1.826833	4.73	0.000	4.957414	12.34175
_cons	-94.09266	109.2632	-0.86	0.394	-314.9218	126.7365

p2pwithout	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-50.38469	21.60562	-2.33	0.025	-94.05126	-6.718108
depth	2.007121	1.866685	1.08	0.289	-1.76559	5.779832
goods_gdp_lagged_3yr_avg	-18.68529	136.1436	-0.14	0.892	-293.8418	256.4712
farm_gdp_lagged_3yr_avg	-19.551	136.2112	-0.14	0.887	-294.8441	255.7421
mining_gdp_lagged_3yr_avg	-18.68321	136.2775	-0.14	0.892	-294.1103	256.7439
constr_gdp_lagged_3yr_avg	-18.89518	135.7677	-0.14	0.890	-293.292	255.5016
svc_gdp_lagged_3yr_avg	-18.6781	136.2642	-0.14	0.892	-294.0784	256.7222
gov_gdp_lagged_3yr_avg	-19.64941	136.1823	-0.14	0.886	-294.8841	255.5853
_cons	1904.144	13621.08	0.14	0.890	-25625.08	29433.37

Instrumented: AAandHis
Instruments: depth goods_gdp_lagged_3yr_avg farm_gdp_lagged_3yr_avg mining_gdp_lagged_3yr_avg constr_gdp_lagged_3yr_avg svc_gdp_lagged_3yr_avg gov_gdp_lagged_3yr_avg change30thru40

A11: IV Regression with Recession Values Added and Lagged Sectors using "Iweight Command"

First-stage regressions

Source	SS	df	MS	Number of obs	=	88,725
				F(8, 88716)	=	17136.22
Model	505.087022	8	63.1358777	Prob > F	=	0.0000
Residual	326.8614	88,716	.003684357	R-squared	=	0.6071
				Adj R-squared	=	0.6071
Total	831.948422	88,724	.009376814	Root MSE	=	.0607

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0135994	.0001267	-107.34	0.000	-.0138477	-.0133511
goods_gdp_lagged_3yr_avg	1.111199	.0290431	38.26	0.000	1.054275	1.168123
svc_gdp_lagged_3yr_avg	1.111919	.0290468	38.28	0.000	1.054988	1.168851
farm_gdp_lagged_3yr_avg	1.105041	.0290593	38.03	0.000	1.048085	1.161998
mining_gdp_lagged_3yr_avg	1.119384	.0290494	38.53	0.000	1.062447	1.17632
constr_gdp_lagged_3yr_avg	1.085058	.0289881	37.43	0.000	1.028241	1.141874
gov_gdp_lagged_3yr_avg	1.110083	.0290434	38.22	0.000	1.053158	1.167007
change30thru40	7.813488	.0340694	229.34	0.000	7.746712	7.880264
_cons	-110.8797	2.904335	-38.18	0.000	-116.5721	-105.1872

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-54.03335	26.09008	-2.07	0.045	-106.7233	-1.343375
depth	1.912202	1.399213	1.37	0.179	-.9135659	4.73797
goods_gdp_lagged_3yr_avg	-6.142392	152.4302	-0.04	0.968	-313.9815	301.6967
svc_gdp_lagged_3yr_avg	-5.753599	152.4817	-0.04	0.970	-313.6966	302.1895
farm_gdp_lagged_3yr_avg	-7.219047	152.4424	-0.05	0.962	-315.0827	300.6446
mining_gdp_lagged_3yr_avg	-5.985372	152.5922	-0.04	0.969	-314.1515	302.1807
constr_gdp_lagged_3yr_avg	-7.308725	151.9169	-0.05	0.962	-314.111	299.4936
gov_gdp_lagged_3yr_avg	-7.351081	152.498	-0.05	0.962	-315.327	300.6248
_cons	642.2909	15244.37	0.04	0.967	-30144.33	31428.92

Instrumented: AAandHis
Instruments: depth goods_gdp_lagged_3yr_avg svc_gdp_lagged_3yr_avg farm_gdp_lagged_3yr_avg mining_gdp_lagged_3yr_avg constr_gdp_lagged_3yr_avg gov_gdp_lagged_3yr_avg change30thru40

A12: IV Regression with Recession Values Omitted and Lagged Sectors using "Iweight" Command

First-stage regressions

Source	SS	df	MS	Number of obs	=	84,471
				F(8, 84462)	=	15935.52
Model	493.264395	8	61.6580493	Prob > F	=	0.0000
Residual	326.804921	84,462	.003869254	R-squared	=	0.6015
				Adj R-squared	=	0.6015
Total	820.069316	84,470	.009708409	Root MSE	=	.0622

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0135089	.000132	-102.36	0.000	-.0137676	-.0132502
goods_gdp_lagged_3yr_avg	1.120027	.0298524	37.52	0.000	1.061517	1.178538
svc_gdp_lagged_3yr_avg	1.12084	.0298581	37.54	0.000	1.062319	1.179362
farm_gdp_lagged_3yr_avg	1.113874	.0298691	37.29	0.000	1.055331	1.172417
mining_gdp_lagged_3yr_avg	1.128249	.0298595	37.79	0.000	1.069725	1.186774
constr_gdp_lagged_3yr_avg	1.093381	.0297863	36.71	0.000	1.035	1.151762
gov_gdp_lagged_3yr_avg	1.1189	.0298525	37.48	0.000	1.060389	1.177411
change30thru40	7.854132	.0364985	215.19	0.000	7.782596	7.925669
_cons	-111.7646	2.985308	-37.44	0.000	-117.6158	-105.9135

p2pwithout	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-58.86139	27.59438	-2.13	0.039	-114.6317	-3.091062
depth	1.762552	1.482561	1.19	0.242	-1.233816	4.75892
goods_gdp_lagged_3yr_avg	-8.974218	157.2784	-0.06	0.955	-326.8457	308.8972
svc_gdp_lagged_3yr_avg	-8.66783	157.3792	-0.06	0.956	-326.7431	309.4075
farm_gdp_lagged_3yr_avg	-10.08477	157.3134	-0.06	0.949	-328.0271	307.8575
mining_gdp_lagged_3yr_avg	-8.81248	157.4335	-0.06	0.956	-326.9975	309.3726
constr_gdp_lagged_3yr_avg	-9.798303	156.5748	-0.06	0.950	-326.2479	306.6513
gov_gdp_lagged_3yr_avg	-10.17824	157.3457	-0.06	0.949	-328.1857	307.8292
_cons	928.6271	15731.28	0.06	0.953	-30865.47	32722.72

Instrumented: AAandHis
Instruments: depth goods_gdp_lagged_3yr_avg svc_gdp_lagged_3yr_avg farm_gdp_lagged_3yr_avg mining_gdp_lagged_3yr_avg constr_gdp_lagged_3yr_avg gov_gdp_lagged_3yr_avg change30thru40

A13: IV Regression with Recession Values Added and Non-Lagged Sectors, Subsectors, and Population Correctives

First-stage regressions

Source	SS	df	MS		
				Number of obs	= 50
				F(12, 37)	= 6.05
Model	.353304456	12	.029442038	Prob > F	= 0.0000
Residual	.18009612	37	.004867463	R-squared	= 0.6624
				Adj R-squared	= 0.5529
Total	.533400576	49	.010885726	Root MSE	= .06977

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0240954	.0079399	-3.03	0.004	-.0401832	-.0080076
pop	4.49e-09	3.28e-09	1.37	0.179	-2.15e-09	1.11e-08
farm_gdp_3yr_avg	.7058862	.7719492	0.91	0.366	-.8582315	2.270004
mining_gdp_3yr_avg	.7180849	.7722046	0.93	0.358	-.8465501	2.28272
constr_gdp_3yr_avg	.681451	.7684825	0.89	0.381	-.8756424	2.238544
gov_gdp_3yr_avg	.7110667	.7721196	0.92	0.363	-.8533962	2.27553
svc_gdp_3yr_avg	.7131027	.7725851	0.92	0.362	-.8523035	2.278509
durables_gdp_3yr_avg	.7142034	.7720019	0.93	0.361	-.850021	2.278428
nondur_gdp_3yr_avg	.7089025	.7719971	0.92	0.364	-.8553123	2.273117
accom_gdp_3yr_avg	-.0105508	.0143417	-0.74	0.467	-.0396099	.0185082
finance_gdp_3yr_avg	-.0180938	.0206996	-0.87	0.388	-.0600351	.0238475
change30thru40	9.015926	1.947308	4.63	0.000	5.070305	12.96155
_cons	-70.88674	77.19563	-0.92	0.364	-227.2999	85.52646

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-48.62207	22.37598	-2.17	0.036	-93.96011	-3.284035
depth	1.247581	2.187924	0.57	0.572	-3.185573	5.680736
pop	7.23e-07	3.30e-07	2.19	0.035	5.37e-08	1.39e-06
farm_gdp_3yr_avg	-17.80487	73.25029	-0.24	0.809	-166.2241	130.6143
mining_gdp_3yr_avg	-16.81665	73.42471	-0.23	0.820	-165.5892	131.9559
constr_gdp_3yr_avg	-17.37522	72.85899	-0.24	0.813	-165.0016	130.2511
gov_gdp_3yr_avg	-17.73595	73.36773	-0.24	0.810	-166.3931	130.9212
svc_gdp_3yr_avg	-16.83567	73.45643	-0.23	0.820	-165.6725	132.0012
durables_gdp_3yr_avg	-16.77703	73.24613	-0.23	0.820	-165.1878	131.6337
nondur_gdp_3yr_avg	-17.25144	73.43134	-0.23	0.816	-166.0375	131.5346
accom_gdp_3yr_avg	-1.91653	1.476139	-1.30	0.202	-4.907471	1.074411
finance_gdp_3yr_avg	.8334294	2.267532	0.37	0.715	-3.761027	5.427886
_cons	1721.419	7334.941	0.23	0.816	-13140.58	16583.42

Instrumented: AAandHis
Instruments: depth pop farm_gdp_3yr_avg mining_gdp_3yr_avg constr_gdp_3yr_avg gov_gdp_3yr_avg svc_gdp_3yr_avg durables_gdp_3yr_avg nondur_gdp_3yr_avg accom_gdp_3yr_avg finance_gdp_3yr_avg change30thru40

A14: IV Regression with Recession Values Omitted and Non-Lagged Sectors, Subsectors, and Population Correctives

First-stage regressions

Source	SS	df	MS	Number of obs	=	49
				F(12, 36)	=	5.83
Model	.348913992	12	.029076166	Prob > F	=	0.0000
Residual	.179477866	36	.004985496	R-squared	=	0.6603
				Adj R-squared	=	0.5471
Total	.528391858	48	.011008164	Root MSE	=	.07061

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0250544	.0084846	-2.95	0.006	-.042262	-.0078469
pop	4.16e-09	3.45e-09	1.20	0.236	-2.84e-09	1.12e-08
farm_gdp_3yr_avg	.7282232	.7838236	0.93	0.359	-.8614447	2.317891
mining_gdp_3yr_avg	.7402116	.7840331	0.94	0.351	-.8498811	2.330304
constr_gdp_3yr_avg	.7041363	.7804076	0.90	0.373	-.8786037	2.286876
gov_gdp_3yr_avg	.7329885	.7839009	0.94	0.356	-.8568363	2.322813
svc_gdp_3yr_avg	.7357255	.7845311	0.94	0.355	-.8553773	2.326828
durables_gdp_3yr_avg	.7366886	.7839109	0.94	0.354	-.8531563	2.326534
nondur_gdp_3yr_avg	.7310481	.7838281	0.93	0.357	-.858629	2.320725
accom_gdp_3yr_avg	-.0124305	.0154649	-0.80	0.427	-.0437947	.0189338
finance_gdp_3yr_avg	-.0251645	.0290174	-0.87	0.392	-.0840145	.0336856
change30thru40	8.983298	1.972954	4.55	0.000	4.981962	12.98463
_cons	-73.09932	78.37824	-0.93	0.357	-232.0578	85.85912

p2pwithout	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-48.21385	23.32187	-2.07	0.046	-95.5128	-.9149027
depth	1.365615	2.214073	0.62	0.541	-3.124734	5.855964
pop	7.59e-07	3.50e-07	2.17	0.037	5.00e-08	1.47e-06
farm_gdp_3yr_avg	-20.61144	71.90749	-0.29	0.776	-166.4466	125.2237
mining_gdp_3yr_avg	-19.60448	72.08377	-0.27	0.787	-165.7971	126.5882
constr_gdp_3yr_avg	-20.21112	71.48298	-0.28	0.779	-165.1853	124.7631
gov_gdp_3yr_avg	-20.4978	72.02034	-0.28	0.778	-166.5618	125.5662
svc_gdp_3yr_avg	-19.67743	72.11992	-0.27	0.787	-165.9434	126.5885
durables_gdp_3yr_avg	-19.60373	71.90711	-0.27	0.787	-165.4381	126.2306
nondur_gdp_3yr_avg	-20.03765	72.08782	-0.28	0.783	-166.2385	126.1632
accom_gdp_3yr_avg	-1.700177	1.633886	-1.04	0.305	-5.013852	1.613498
finance_gdp_3yr_avg	1.638493	3.616028	0.45	0.653	-5.695151	8.972138
_cons	1999.816	7199.824	0.28	0.783	-12602.1	16601.74

Instrumented: AAandHis
Instruments: depth pop farm_gdp_3yr_avg mining_gdp_3yr_avg constr_gdp_3yr_avg gov_gdp_3yr_avg svc_gdp_3yr_avg durables_gdp_3yr_avg nondur_gdp_3yr_avg accom_gdp_3yr_avg finance_gdp_3yr_avg change30thru40

A15: IV Regression with Recession Values Added and Lagged Sectors, Subsectors, and Population Correctives

First-stage regressions

Source	SS	df	MS	Number of obs	=	50
				F(12, 37)	=	6.00
Model	.352262345	12	.029355195	Prob > F	=	0.0000
Residual	.181138231	37	.004895628	R-squared	=	0.6604
				Adj R-squared	=	0.5503
Total	.533400576	49	.010885726	Root MSE	=	.06997

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0251523	.0082133	-3.06	0.004	-.0417941	-.0085105
pop	5.10e-09	3.30e-09	1.55	0.131	-1.58e-09	1.18e-08
farm_gdp_lagged_3yr_avg	1.012775	1.102138	0.92	0.364	-1.220368	3.245918
mining_gdp_lagged_3yr_avg	1.023963	1.101742	0.93	0.359	-1.208379	3.256305
constr_gdp_lagged_3yr_avg	.9898341	1.095941	0.90	0.372	-1.230754	3.210422
gov_gdp_lagged_3yr_avg	1.01679	1.101536	0.92	0.362	-1.215134	3.248715
durables_gdp_lagged_3yr_avg	1.020079	1.101642	0.93	0.360	-1.21206	3.252217
nondur_gdp_lagged_3yr_avg	1.014303	1.100964	0.92	0.363	-1.216463	3.245068
accom_gdp_lagged_3yr_avg	-.0093254	.0147129	-0.63	0.530	-.0391366	.0204858
finance_gdp_lagged_3yr_avg	-.0185515	.02175	-0.85	0.399	-.0626211	.0255181
svc_gdp_lagged_3yr_avg	1.018458	1.101524	0.92	0.361	-1.213443	3.250358
change30thru40	9.226321	1.963537	4.70	0.000	5.247817	13.20482
_cons	-101.4629	110.1138	-0.92	0.363	-324.5746	121.6488

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-47.46141	21.71944	-2.19	0.035	-91.46917	-3.453647
depth	1.344055	2.181342	0.62	0.542	-3.075763	5.763873
pop	7.91e-07	3.47e-07	2.28	0.028	8.84e-08	1.49e-06
farm_gdp_lagged_3yr_avg	38.95924	111.78	0.35	0.729	-187.5285	265.447
mining_gdp_lagged_3yr_avg	39.8063	111.8319	0.36	0.724	-186.7867	266.3993
constr_gdp_lagged_3yr_avg	39.99917	110.9084	0.36	0.720	-184.7226	264.721
gov_gdp_lagged_3yr_avg	38.87305	111.7969	0.35	0.730	-187.6489	265.395
durables_gdp_lagged_3yr_avg	39.8608	111.7674	0.36	0.723	-186.6015	266.3231
nondur_gdp_lagged_3yr_avg	39.41034	111.7312	0.35	0.726	-186.9786	265.7993
accom_gdp_lagged_3yr_avg	-2.091363	1.500632	-1.39	0.172	-5.131933	.9492071
finance_gdp_lagged_3yr_avg	.831635	2.372694	0.35	0.728	-3.9759	5.63917
svc_gdp_lagged_3yr_avg	39.80271	111.7203	0.36	0.724	-186.5641	266.1695
_cons	-3947.135	11170.04	-0.35	0.726	-26579.79	18685.52

Instrumented: AAandHis
Instruments: depth pop farm_gdp_lagged_3yr_avg mining_gdp_lagged_3yr_avg constr_gdp_lagged_3yr_avg gov_gdp_lagged_3yr_avg durables_gdp_lagged_3yr_avg nondur_gdp_lagged_3yr_avg accom_gdp_lagged_3yr_avg finance_gdp_lagged_3yr_avg svc_gdp_lagged_3yr_avg change30thru40

A16: IV Regression with Recession Values Omitted and Lagged Sectors, Subsectors, and Population Correctives

First-stage regressions

Source	SS	df	MS	Number of obs	=	49
				F(12, 36)	=	5.79
Model	.348118621	12	.029009885	Prob > F	=	0.0000
Residual	.180273238	36	.00500759	R-squared	=	0.6588
				Adj R-squared	=	0.5451
Total	.528391858	48	.011008164	Root MSE	=	.07076

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0262974	.0087517	-3.00	0.005	-.0440467	-.0085481
pop	4.72e-09	3.45e-09	1.37	0.180	-2.28e-09	1.17e-08
farm_gdp_lagged_3yr_avg	1.035873	1.116054	0.93	0.360	-1.227589	3.299336
mining_gdp_lagged_3yr_avg	1.046836	1.115628	0.94	0.354	-1.215762	3.309434
constr_gdp_lagged_3yr_avg	1.013138	1.10982	0.91	0.367	-1.237681	3.263956
gov_gdp_lagged_3yr_avg	1.039474	1.115397	0.93	0.358	-1.222657	3.301604
durables_gdp_lagged_3yr_avg	1.04335	1.115574	0.94	0.356	-1.219139	3.305839
nondur_gdp_lagged_3yr_avg	1.037181	1.114842	0.93	0.358	-1.223824	3.298186
accom_gdp_lagged_3yr_avg	-.0112063	.0155532	-0.72	0.476	-.0427496	.020337
finance_gdp_lagged_3yr_avg	-.0264455	.0290625	-0.91	0.369	-.085387	.032496
svc_gdp_lagged_3yr_avg	1.041826	1.115467	0.93	0.357	-1.220445	3.304098
change30thru40	9.183211	1.98857	4.62	0.000	5.150204	13.21622
_cons	-103.7477	111.5014	-0.93	0.358	-329.883	122.3876

p2pwithout	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-47.14199	22.60307	-2.09	0.044	-92.98313	-1.30084
depth	1.430334	2.233296	0.64	0.526	-3.099001	5.959668
pop	8.14e-07	3.56e-07	2.29	0.028	9.17e-08	1.54e-06
farm_gdp_lagged_3yr_avg	37.0399	109.9373	0.34	0.738	-185.9233	260.0031
mining_gdp_lagged_3yr_avg	37.89882	109.9962	0.34	0.732	-185.1839	260.9815
constr_gdp_lagged_3yr_avg	38.07325	109.0341	0.35	0.729	-183.0582	259.2047
gov_gdp_lagged_3yr_avg	36.9808	109.957	0.34	0.739	-186.0224	259.984
durables_gdp_lagged_3yr_avg	37.9273	109.9313	0.35	0.732	-185.0237	260.8783
nondur_gdp_lagged_3yr_avg	37.50558	109.8924	0.34	0.735	-185.3665	260.3777
accom_gdp_lagged_3yr_avg	-1.959873	1.618697	-1.21	0.234	-5.242743	1.322998
finance_gdp_lagged_3yr_avg	1.3769	3.580778	0.38	0.703	-5.885255	8.639055
svc_gdp_lagged_3yr_avg	37.8631	109.8827	0.34	0.732	-184.9893	260.7155
_cons	-3756.852	10985.48	-0.34	0.734	-26036.45	18522.74

Instrumented: AAandHis
Instruments: depth pop farm_gdp_lagged_3yr_avg mining_gdp_lagged_3yr_avg constr_gdp_lagged_3yr_avg gov_gdp_lagged_3yr_avg durables_gdp_lagged_3yr_avg nondur_gdp_lagged_3yr_avg accom_gdp_lagged_3yr_avg finance_gdp_lagged_3yr_avg svc_gdp_lagged_3yr_avg change30thru40

A17: IV Regression with Recession Values Added, Non-Lagged Sectors, and with Urban Percentage and Population Correctives

First-stage regressions

Source	SS	df	MS		
				Number of obs	= 50
				F(10, 39)	= 6.65
Model	.336205415	10	.033620541	Prob > F	= 0.0000
Residual	.197195162	39	.005056286	R-squared	= 0.6303
				Adj R-squared	= 0.5355
Total	.533400576	49	.010885726	Root MSE	= .07111

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0171707	.0065854	-2.61	0.013	-.0304909	-.0038505
pop	4.51e-09	3.31e-09	1.36	0.181	-2.18e-09	1.12e-08
percenturban	.0004755	.0012384	0.38	0.703	-.0020294	.0029803
farm_gdp_3yr_avg	.3827538	.877496	0.44	0.665	-1.392149	2.157657
mining_gdp_3yr_avg	.3934602	.8766655	0.45	0.656	-1.379763	2.166684
goods_gdp_3yr_avg	.3875696	.8767835	0.44	0.661	-1.385892	2.161032
svc_gdp_3yr_avg	.3868276	.8764365	0.44	0.661	-1.385933	2.159588
gov_gdp_3yr_avg	.3871176	.8767398	0.44	0.661	-1.386256	2.160491
constr_gdp_3yr_avg	.3638348	.8728581	0.42	0.679	-1.401687	2.129357
change30thru40	8.097877	2.003306	4.04	0.000	4.045808	12.14995
_cons	-38.5195	87.66802	-0.44	0.663	-215.8448	138.8058

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-44.65097	25.79315	-1.73	0.091	-96.82253	7.520599
depth	1.961682	1.557686	1.26	0.215	-1.189036	5.1124
pop	7.68e-07	3.46e-07	2.22	0.032	6.80e-08	1.47e-06
percenturban	.2498849	.1965734	1.27	0.211	-.1477224	.6474921
farm_gdp_3yr_avg	27.88087	83.74416	0.33	0.741	-141.5077	197.2694
mining_gdp_3yr_avg	28.15064	83.5727	0.34	0.738	-140.8911	197.1924
goods_gdp_3yr_avg	28.11874	83.65803	0.34	0.739	-141.0956	197.3331
svc_gdp_3yr_avg	27.84159	83.59655	0.33	0.741	-141.2484	196.9316
gov_gdp_3yr_avg	27.26073	83.59904	0.33	0.746	-141.8343	196.3557
constr_gdp_3yr_avg	28.07844	83.3409	0.34	0.738	-140.4944	196.6513
_cons	-2787.479	8364.513	-0.33	0.741	-19706.3	14131.35

Instrumented: AAandHis
Instruments: depth pop percenturban farm_gdp_3yr_avg mining_gdp_3yr_avg goods_gdp_3yr_avg svc_gdp_3yr_avg gov_gdp_3yr_avg constr_gdp_3yr_avg change30thru40

A18: IV Regression with Recession Values Omitted, Non-lagged Sectors, and with Urban Percentage and Population Correctives

First-stage regressions

Source	SS	df	MS		
Model	.333219547	10	.033321955	Number of obs	= 49
Residual	.195172311	38	.005136113	F(10, 38)	= 6.49
				Prob > F	= 0.0000
Total	.528391858	48	.011008164	R-squared	= 0.6306
				Adj R-squared	= 0.5334
				Root MSE	= .07167

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0167335	.0066736	-2.51	0.017	-.0302436	-.0032234
pop	5.43e-09	3.64e-09	1.49	0.144	-1.95e-09	1.28e-08
farm_gdp_3yr_avg	.396492	.8846666	0.45	0.657	-1.394422	2.187406
mining_gdp_3yr_avg	.4075043	.883842	0.46	0.647	-1.38174	2.196749
constr_gdp_3yr_avg	.3763534	.8799475	0.43	0.671	-1.405007	2.157714
gov_gdp_3yr_avg	.4012652	.8839211	0.45	0.652	-1.388139	2.19067
svc_gdp_3yr_avg	.4012161	.8836254	0.45	0.652	-1.38759	2.190022
goods_gdp_3yr_avg	.4014581	.8839547	0.45	0.652	-1.388015	2.190931
percenturban	.0003137	.0012745	0.25	0.807	-.0022663	.0028937
change30thru40	8.123202	2.019461	4.02	0.000	4.035017	12.21139
_cons	-39.9222	88.38562	-0.45	0.654	-218.8495	139.0051

p2pwithout	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-44.8324	25.39485	-1.77	0.086	-96.24159	6.576783
depth	1.933186	1.570422	1.23	0.226	-1.245967	5.112339
pop	7.15e-07	3.63e-07	1.97	0.056	-1.90e-08	1.45e-06
farm_gdp_3yr_avg	27.15755	85.21256	0.32	0.752	-145.3463	199.6614
mining_gdp_3yr_avg	27.4115	85.0422	0.32	0.749	-144.7474	199.5704
constr_gdp_3yr_avg	27.42246	84.80709	0.32	0.748	-144.2605	199.1054
gov_gdp_3yr_avg	26.51443	85.0659	0.31	0.757	-145.6925	198.7213
svc_gdp_3yr_avg	27.08125	85.05767	0.32	0.752	-145.109	199.2715
goods_gdp_3yr_avg	27.38757	85.12832	0.32	0.749	-144.9457	199.7208
percenturban	.2593659	.2044696	1.27	0.212	-.1545613	.673293
_cons	-2713.515	8511.071	-0.32	0.752	-19943.28	14516.25

Instrumented: AAandHis
Instruments: depth pop farm_gdp_3yr_avg mining_gdp_3yr_avg constr_gdp_3yr_avg gov_gdp_3yr_avg svc_gdp_3yr_avg goods_gdp_3yr_avg percenturban change30thru40

A19: IV Regression with Recession Values Added, Lagged Sectors, and with Urban Percentage and Population Correctives

First-stage regressions

Source	SS	df	MS		
Model	.339208253	10	.033920825	Number of obs	= 50
				F(10, 39)	= 6.81
Residual	.194192323	39	.00497929	Prob > F	= 0.0000
				R-squared	= 0.6359
				Adj R-squared	= 0.5426
Total	.533400576	49	.010885726	Root MSE	= .07056

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0168358	.0066593	-2.53	0.016	-.0303054	-.0033661
pop	4.93e-09	3.25e-09	1.52	0.137	-1.64e-09	1.15e-08
svc_gdp_lagged_3yr_avg	1.153911	1.070508	1.08	0.288	-1.011396	3.319219
goods_gdp_lagged_3yr_avg	1.154632	1.070452	1.08	0.287	-1.010561	3.319825
farm_gdp_lagged_3yr_avg	1.151234	1.071628	1.07	0.289	-1.016338	3.318806
mining_gdp_lagged_3yr_avg	1.161076	1.070878	1.08	0.285	-1.004979	3.327131
constr_gdp_lagged_3yr_avg	1.135472	1.06887	1.06	0.295	-1.026521	3.297466
gov_gdp_lagged_3yr_avg	1.15394	1.070328	1.08	0.288	-1.011003	3.318882
percenturban	.0005735	.0011959	0.48	0.634	-.0018454	.0029923
change30thru40	8.226128	1.945769	4.23	0.000	4.290438	12.16182
_cons	-115.2657	107.0596	-1.08	0.288	-331.8142	101.2827

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-42.93603	25.85226	-1.66	0.105	-95.22717	9.355104
depth	2.058979	1.55985	1.32	0.195	-1.096116	5.214075
pop	7.94e-07	3.53e-07	2.25	0.030	7.96e-08	1.51e-06
svc_gdp_lagged_3yr_avg	44.9756	103.9633	0.43	0.668	-165.31	255.2612
goods_gdp_lagged_3yr_avg	45.26698	103.9477	0.44	0.666	-164.9872	255.5211
farm_gdp_lagged_3yr_avg	45.15783	103.9694	0.43	0.666	-165.1401	255.4557
mining_gdp_lagged_3yr_avg	45.27972	104.043	0.44	0.666	-165.1671	255.7266
constr_gdp_lagged_3yr_avg	46.40295	103.4028	0.45	0.656	-162.7489	255.5548
gov_gdp_lagged_3yr_avg	44.33268	103.9421	0.43	0.672	-165.9101	254.5755
percenturban	.274678	.1863575	1.47	0.149	-.1022655	.6516216
_cons	-4509.64	10392.7	-0.43	0.667	-25530.85	16511.57

Instrumented: AAandHis
Instruments: depth pop svc_gdp_lagged_3yr_avg goods_gdp_lagged_3yr_avg farm_gdp_lagged_3yr_avg mining_gdp_lagged_3yr_avg constr_gdp_lagged_3yr_avg gov_gdp_lagged_3yr_avg percenturban change30thru40

A20: IV Regression with Recession Values Omitted, Lagged Sectors, and with Urban Percentage and Population Correctives

First-stage regressions

Source	SS	df	MS	Number of obs	=	49
				F(10, 38)	=	6.63
Model	.335793869	10	.033579387	Prob > F	=	0.0000
Residual	.19259799	38	.005068368	R-squared	=	0.6355
				Adj R-squared	=	0.5396
Total	.528391858	48	.011008164	Root MSE	=	.07119

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.016402	.0067629	-2.43	0.020	-.0300929	-.0027112
pop	5.75e-09	3.59e-09	1.60	0.118	-1.52e-09	1.30e-08
svc_gdp_lagged_3yr_avg	1.175494	1.080727	1.09	0.284	-1.012323	3.363311
goods_gdp_lagged_3yr_avg	1.175773	1.080642	1.09	0.283	-1.011872	3.363418
farm_gdp_lagged_3yr_avg	1.172271	1.081821	1.08	0.285	-1.017762	3.362304
mining_gdp_lagged_3yr_avg	1.182336	1.081079	1.09	0.281	-1.006194	3.370866
constr_gdp_lagged_3yr_avg	1.15552	1.078981	1.07	0.291	-1.028762	3.339803
gov_gdp_lagged_3yr_avg	1.175304	1.080531	1.09	0.284	-1.012116	3.362725
percenturban	.0004288	.0012338	0.35	0.730	-.0020689	.0029264
change30thru40	8.252955	1.963679	4.20	0.000	4.277695	12.22822
_cons	-117.3925	108.0795	-1.09	0.284	-336.188	101.4031

p2pwithout	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-43.24468	25.30227	-1.71	0.096	-94.46645	7.977091
depth	2.012738	1.569589	1.28	0.207	-1.164728	5.190205
pop	7.18e-07	3.56e-07	2.02	0.051	-2.91e-09	1.44e-06
svc_gdp_lagged_3yr_avg	43.29049	107.1023	0.40	0.688	-173.5268	260.1078
goods_gdp_lagged_3yr_avg	43.62389	107.0877	0.41	0.686	-173.1639	260.4117
farm_gdp_lagged_3yr_avg	43.52358	107.113	0.41	0.687	-173.3153	260.3624
mining_gdp_lagged_3yr_avg	43.6274	107.1824	0.41	0.686	-173.352	260.6068
constr_gdp_lagged_3yr_avg	44.85736	106.5353	0.42	0.676	-170.8121	260.5269
gov_gdp_lagged_3yr_avg	42.66819	107.0816	0.40	0.693	-174.1071	259.4435
percenturban	.288546	.1931004	1.49	0.143	-.1023652	.6794573
_cons	-4344.072	10706.79	-0.41	0.687	-26018.84	17330.7

Instrumented: AAandHis
Instruments: depth pop svc_gdp_lagged_3yr_avg goods_gdp_lagged_3yr_avg farm_gdp_lagged_3yr_avg mining_gdp_lagged_3yr_avg constr_gdp_lagged_3yr_avg gov_gdp_lagged_3yr_avg percenturban change30thru40

A21: IV Regression with Recession Values Added, Non-Lagged Sectors and Subsectors, Depth, Urban Percentage, and Population Correctives

First-stage regressions

Source	SS	df	MS		
Model	.353416803	13	.027185908	Number of obs	= 50
Residual	.179983774	36	.004999549	F(13, 36)	= 5.44
				Prob > F	= 0.0000
Total	.533400576	49	.010885726	R-squared	= 0.6626
				Adj R-squared	= 0.5407
				Root MSE	= .07071

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0237762	.0083239	-2.86	0.007	-.0406578	-.0068946
farm_gdp_3yr_avg	.7471541	.8293754	0.90	0.374	-.9348971	2.429205
accom_gdp_3yr_avg	-.0105277	.0145358	-0.72	0.474	-.0400077	.0189523
finance_gdp_3yr_avg	-.0185978	.0212463	-0.88	0.387	-.0616872	.0244916
mining_gdp_3yr_avg	.7589851	.8288086	0.92	0.366	-.9219167	2.439887
constr_gdp_3yr_avg	.7227388	.826106	0.87	0.387	-.9526819	2.398159
gov_gdp_3yr_avg	.7518778	.828532	0.91	0.370	-.928463	2.432219
svc_gdp_3yr_avg	.7538903	.8289261	0.91	0.369	-.9272498	2.43503
durables_gdp_3yr_avg	.7550427	.8284811	0.91	0.368	-.9251949	2.43528
nondur_gdp_3yr_avg	.7499274	.8288845	0.90	0.372	-.9311282	2.430983
pop	4.33e-09	3.49e-09	1.24	0.223	-2.75e-09	1.14e-08
percenturban	.0002007	.0013387	0.15	0.882	-.0025143	.0029156
change30thru40	9.110654	2.072254	4.40	0.000	4.907928	13.31338
_cons	-74.9859	82.87722	-0.90	0.372	-243.0687	93.09689

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-39.66233	27.55343	-1.44	0.159	-95.54328	16.21862
depth	1.735655	1.952722	0.89	0.380	-2.224649	5.695959
farm_gdp_3yr_avg	11.06341	69.73521	0.16	0.875	-130.3662	152.493
accom_gdp_3yr_avg	-1.802278	1.500658	-1.20	0.238	-4.845753	1.241198
finance_gdp_3yr_avg	.565732	2.110666	0.27	0.790	-3.714896	4.84636
mining_gdp_3yr_avg	11.6287	69.79561	0.17	0.869	-129.9234	153.1808
constr_gdp_3yr_avg	11.72889	69.3625	0.17	0.867	-128.9448	152.4026
gov_gdp_3yr_avg	10.69639	69.78002	0.15	0.879	-130.824	152.2168
svc_gdp_3yr_avg	11.55837	69.76899	0.17	0.869	-129.9397	153.0564
durables_gdp_3yr_avg	11.65124	69.71833	0.17	0.868	-129.7441	153.0466
nondur_gdp_3yr_avg	11.38255	69.80864	0.16	0.871	-130.1959	152.961
pop	5.46e-07	3.39e-07	1.61	0.116	-1.42e-07	1.23e-06
percenturban	.1711251	.1815712	0.94	0.352	-.1971184	.5393685
_cons	-1139.177	6975.407	-0.16	0.871	-15285.96	13007.6

Instrumented: AAandHis
Instruments: depth farm_gdp_3yr_avg accom_gdp_3yr_avg finance_gdp_3yr_avg mining_gdp_3yr_avg constr_gdp_3yr_avg gov_gdp_3yr_avg svc_gdp_3yr_avg durables_gdp_3yr_avg nondur_gdp_3yr_avg pop percenturban change30thru40

A22: IV Regression with Recession Values Added, Non-Lagged Sectors, Depth, and Peak to Trough Correctives

First-stage regressions

Source	SS	df	MS		
Model	.320867254	9	.035651917	Number of obs	= 50
Residual	.212533322	40	.005313333	F(9, 40)	= 6.71
				Prob > F	= 0.0000
				R-squared	= 0.6016
				Adj R-squared	= 0.5119
Total	.533400576	49	.010885726	Root MSE	= .07289

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0163802	.0072179	-2.27	0.029	-.0309682	-.0017922
farm_gdp_3yr_avg	.2584316	.8609903	0.30	0.766	-1.481695	1.998558
goods_gdp_3yr_avg	.2650631	.860846	0.31	0.760	-1.474771	2.004898
mining_gdp_3yr_avg	.2710731	.8607499	0.31	0.754	-1.468567	2.010714
constr_gdp_3yr_avg	.2365608	.8561695	0.28	0.784	-1.493822	1.966944
gov_gdp_3yr_avg	.2643042	.8609979	0.31	0.760	-1.475838	2.004446
svc_gdp_3yr_avg	.2655444	.8607961	0.31	0.759	-1.474189	2.005278
p2t	.0005257	.0022996	0.23	0.820	-.0041221	.0051734
change30thru40	8.590118	1.854738	4.63	0.000	4.841553	12.33868
_cons	-26.24955	86.06217	-0.31	0.762	-200.1877	147.6886

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-11.73096	9.973873	-1.18	0.246	-31.88891	8.426993
depth	.7424595	.7540633	0.98	0.331	-.7815592	2.266478
farm_gdp_3yr_avg	-31.11684	37.60476	-0.83	0.413	-107.1189	44.88521
goods_gdp_3yr_avg	-31.08568	37.5826	-0.83	0.413	-107.0429	44.87158
mining_gdp_3yr_avg	-31.06289	37.57335	-0.83	0.413	-107.0015	44.87568
constr_gdp_3yr_avg	-30.44927	37.5261	-0.81	0.422	-106.2923	45.39381
gov_gdp_3yr_avg	-31.2871	37.58699	-0.83	0.410	-107.2532	44.67905
svc_gdp_3yr_avg	-31.15889	37.59105	-0.83	0.412	-107.1332	44.81545
p2t	1.600015	.2107146	7.59	0.000	1.174145	2.025885
_cons	3115.078	3759.383	0.83	0.412	-4482.919	10713.08

Instrumented: AAandHis
Instruments: depth farm_gdp_3yr_avg goods_gdp_3yr_avg mining_gdp_3yr_avg constr_gdp_3yr_avg gov_gdp_3yr_avg svc_gdp_3yr_avg p2t change30thru40

A23: IV Regression with Recession Values Added, Non-Lagged Sectors and Subsectors, Urban Percentage, Population, Depth and Peak to Trough Correctives

First-stage regressions

Source	SS	df	MS	Number of obs	=	50
				F(14, 35)	=	4.93
Model	.353953358	14	.025282383	Prob > F	=	0.0001
Residual	.179447218	35	.005127063	R-squared	=	0.6636
				Adj R-squared	=	0.5290
Total	.533400576	49	.010885726	Root MSE	=	.0716

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0225891	.0091935	-2.46	0.019	-.0412528	-.0039253
farm_gdp_3yr_avg	.7433747	.8399667	0.89	0.382	-.9618484	2.448598
accom_gdp_3yr_avg	-.0109442	.0147762	-0.74	0.464	-.0409414	.0190531
finance_gdp_3yr_avg	-.0164904	.0224801	-0.73	0.468	-.0621274	.0291465
mining_gdp_3yr_avg	.7553486	.8393868	0.90	0.374	-.9486971	2.459394
constr_gdp_3yr_avg	.7195749	.8366318	0.86	0.396	-.978878	2.418028
gov_gdp_3yr_avg	.747994	.8391173	0.89	0.379	-.9555048	2.451493
svc_gdp_3yr_avg	.7502219	.8395071	0.89	0.378	-.9540681	2.454512
durables_gdp_3yr_avg	.7514017	.8390554	0.90	0.377	-.9519713	2.454775
nondur_gdp_3yr_avg	.7463867	.8394597	0.89	0.380	-.9578071	2.45058
p2t	-.0009149	.0028283	-0.32	0.748	-.0066567	.0048268
pop	4.54e-09	3.59e-09	1.26	0.215	-2.75e-09	1.18e-08
percenturban	.0002897	.0013833	0.21	0.835	-.0025185	.003098
change30thru40	8.924095	2.176312	4.10	0.000	4.505946	13.34224
_cons	-74.62869	83.93473	-0.89	0.380	-245.0252	95.76786

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-.8437483	15.69922	-0.05	0.957	-32.71485	31.02735
depth	.4081663	.7224431	0.56	0.576	-1.058471	1.874804
farm_gdp_3yr_avg	-10.77516	36.32799	-0.30	0.769	-84.5249	62.97458
accom_gdp_3yr_avg	-.6040931	.725885	-0.83	0.411	-2.077718	.8695318
finance_gdp_3yr_avg	-2.707328	.9864245	-2.74	0.009	-4.709876	-.7047794
mining_gdp_3yr_avg	-10.94019	36.23968	-0.30	0.765	-84.51065	62.63028
constr_gdp_3yr_avg	-10.32875	36.41307	-0.28	0.778	-84.25121	63.59371
gov_gdp_3yr_avg	-11.1275	36.23374	-0.31	0.761	-84.6859	62.4309
svc_gdp_3yr_avg	-10.75216	36.21043	-0.30	0.768	-84.26324	62.75892
durables_gdp_3yr_avg	-10.75594	36.24502	-0.30	0.768	-84.33723	62.82536
nondur_gdp_3yr_avg	-11.01615	36.23967	-0.30	0.763	-84.58659	62.5543
p2t	1.734479	.2240462	7.74	0.000	1.279641	2.189317
pop	-2.08e-08	2.31e-07	-0.09	0.929	-4.91e-07	4.49e-07
percenturban	-.0055096	.0761212	-0.07	0.943	-.1600439	.1490246
_cons	1094.475	3627.332	0.30	0.765	-6269.4	8458.351

Instrumented: AAandHis
Instruments: depth farm_gdp_3yr_avg accom_gdp_3yr_avg finance_gdp_3yr_avg mining_gdp_3yr_avg constr_gdp_3yr_avg gov_gdp_3yr_avg svc_gdp_3yr_avg durables_gdp_3yr_avg nondur_gdp_3yr_avg p2t pop percenturban change30thru40

A24: IV Regression with Recession Values Added with Lagged Sectors and Subsectors, Urban Percentage and Population Correctives

First-stage regressions

Source	SS	df	MS		
				Number of obs	= 50
				F(13, 36)	= 5.39
Model	.35245614	13	.027112011	Prob > F	= 0.0000
Residual	.180944436	36	.005026234	R-squared	= 0.6608
				Adj R-squared	= 0.5383
Total	.533400576	49	.010885726	Root MSE	= .0709

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0247835	.0085173	-2.91	0.006	-.0420574	-.0075097
farm_gdp_lagged_3yr_avg	1.091239	1.194052	0.91	0.367	-1.33041	3.512888
durables_gdp_lagged_3yr_avg	1.097963	1.192521	0.92	0.363	-1.320583	3.516508
nondur_gdp_lagged_3yr_avg	1.092315	1.192208	0.92	0.366	-1.325594	3.510224
accom_gdp_lagged_3yr_avg	-.0090125	.014946	-0.60	0.550	-.0393244	.0212994
finance_gdp_3yr_avg	-.0181187	.0210201	-0.86	0.394	-.0607494	.024512
mining_gdp_lagged_3yr_avg	1.101903	1.192748	0.92	0.362	-1.317103	3.520909
constr_gdp_lagged_3yr_avg	1.067865	1.187881	0.90	0.375	-1.341268	3.476999
gov_gdp_lagged_3yr_avg	1.094558	1.19231	0.92	0.365	-1.323558	3.512674
svc_gdp_lagged_3yr_avg	1.096135	1.19218	0.92	0.364	-1.321719	3.513989
percenturban	.0002455	.0013602	0.18	0.858	-.0025132	.0030042
pop	4.89e-09	3.47e-09	1.41	0.167	-2.15e-09	1.19e-08
change30thru40	9.361139	2.099049	4.46	0.000	5.10407	13.61821
_cons	-109.2605	119.2336	-0.92	0.366	-351.0775	132.5565

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-34.73193	27.28125	-1.27	0.211	-90.06086	20.59701
depth	1.981715	1.868264	1.06	0.296	-1.8073	5.77073
farm_gdp_lagged_3yr_avg	101.1367	95.81901	1.06	0.298	-93.19327	295.4667
durables_gdp_lagged_3yr_avg	101.4168	95.71205	1.06	0.296	-92.69628	295.5298
nondur_gdp_lagged_3yr_avg	101.2127	95.626	1.06	0.297	-92.72584	295.1512
accom_gdp_lagged_3yr_avg	-1.73776	1.547314	-1.12	0.269	-4.875859	1.400339
finance_gdp_3yr_avg	.4193938	2.043211	0.21	0.839	-3.724431	4.563219
mining_gdp_lagged_3yr_avg	101.3806	95.66845	1.06	0.296	-92.64395	295.4052
constr_gdp_lagged_3yr_avg	102.3583	95.12232	1.08	0.289	-90.55874	295.2753
gov_gdp_lagged_3yr_avg	100.4206	95.67826	1.05	0.301	-93.62396	294.4651
svc_gdp_lagged_3yr_avg	101.2861	95.50277	1.06	0.296	-92.40245	294.9747
percenturban	.2403069	.1875663	1.28	0.208	-.1400952	.620709
pop	5.58e-07	3.58e-07	1.56	0.128	-1.68e-07	1.28e-06
_cons	-10125.39	9561.469	-1.06	0.297	-29516.95	9266.17

Instrumented: AAandHis
Instruments: depth farm_gdp_lagged_3yr_avg durables_gdp_lagged_3yr_avg nondur_gdp_lagged_3yr_avg accom_gdp_lagged_3yr_avg finance_gdp_3yr_avg mining_gdp_lagged_3yr_avg constr_gdp_lagged_3yr_avg gov_gdp_lagged_3yr_avg svc_gdp_lagged_3yr_avg percenturban pop change30thru40

A25: IV Regression with Recession Values Added, Lagged Sectors, Depth, and Peak to Trough Correctives

First-stage regressions

Source	SS	df	MS	Number of obs	=	50
				F(9, 40)	=	6.72
Model	.321116099	9	.035679567	Prob > F	=	0.0000
Residual	.212284477	40	.005307112	R-squared	=	0.6020
				Adj R-squared	=	0.5125
Total	.533400576	49	.010885726	Root MSE	=	.07285

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0165978	.0073343	-2.26	0.029	-.0314209	-.0017746
farm_gdp_lagged_3yr_avg	.9837256	1.092822	0.90	0.373	-1.22495	3.192401
goods_gdp_lagged_3yr_avg	.9889728	1.091897	0.91	0.370	-1.217833	3.195779
mining_gdp_lagged_3yr_avg	.9954453	1.092358	0.91	0.368	-1.212294	3.203184
constr_gdp_lagged_3yr_avg	.9643343	1.089702	0.88	0.381	-1.238036	3.166705
gov_gdp_lagged_3yr_avg	.9882853	1.09193	0.91	0.371	-1.218587	3.195157
svc_gdp_lagged_3yr_avg	.989519	1.092123	0.91	0.370	-1.217745	3.196783
p2t	.0011189	.0022996	0.49	0.629	-.0035287	.0057664
change30thru40	8.884207	1.835058	4.84	0.000	5.175416	12.593
_cons	-98.6784	109.1985	-0.90	0.372	-319.3767	122.0199

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	-10.54816	9.31903	-1.13	0.264	-29.38262	8.286302
depth	.7981936	.7486347	1.07	0.293	-.7148536	2.311241
farm_gdp_lagged_3yr_avg	10.25606	47.41496	0.22	0.830	-85.57315	106.0853
goods_gdp_lagged_3yr_avg	10.25682	47.42845	0.22	0.830	-85.59965	106.1133
mining_gdp_lagged_3yr_avg	10.26865	47.46082	0.22	0.830	-85.65324	106.1906
constr_gdp_lagged_3yr_avg	11.01826	47.15372	0.23	0.816	-84.28297	106.3195
gov_gdp_lagged_3yr_avg	10.04361	47.42839	0.21	0.833	-85.81275	105.9
svc_gdp_lagged_3yr_avg	10.1919	47.43211	0.21	0.831	-85.67196	106.0558
p2t	1.600083	.2034198	7.87	0.000	1.188956	2.011209
_cons	-1020.572	4740.939	-0.22	0.831	-10602.37	8561.223

Instrumented: AAandHis
Instruments: depth farm_gdp_lagged_3yr_avg goods_gdp_lagged_3yr_avg mining_gdp_lagged_3yr_avg constr_gdp_lagged_3yr_avg gov_gdp_lagged_3yr_avg svc_gdp_lagged_3yr_avg p2t change30thru40

A26: IV Regression with Recession Values Added, Lagged Sectors and Subsectors with Urban Percentage, Population, Depth and Peak to Trough Correctives

First-stage regressions

Source	SS	df	MS		
Model	.352706188	14	.025193299	Number of obs	= 50
Residual	.180694388	35	.005162697	F(14, 35)	= 4.88
				Prob > F	= 0.0001
				R-squared	= 0.6612
				Adj R-squared	= 0.5257
Total	.533400576	49	.010885726	Root MSE	= .07185

AAandHis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
depth	-.0239405	.009444	-2.54	0.016	-.0431127	-.0047682
farm_gdp_lagged_3yr_avg	1.092875	1.210175	0.90	0.373	-1.363912	3.549661
durables_gdp_lagged_3yr_avg	1.099663	1.208626	0.91	0.369	-1.353978	3.553305
nondur_gdp_lagged_3yr_avg	1.09409	1.20831	0.91	0.371	-1.358911	3.54709
accom_gdp_lagged_3yr_avg	-.0092885	.0151994	-0.61	0.545	-.0401449	.0215679
finance_gdp_3yr_avg	-.0166635	.0223061	-0.75	0.460	-.0619473	.0286202
mining_gdp_lagged_3yr_avg	1.103599	1.208856	0.91	0.368	-1.35051	3.557707
constr_gdp_lagged_3yr_avg	1.070129	1.203942	0.89	0.380	-1.374003	3.514262
gov_gdp_lagged_3yr_avg	1.096072	1.208406	0.91	0.371	-1.357123	3.549268
svc_gdp_lagged_3yr_avg	1.097806	1.20828	0.91	0.370	-1.355132	3.550744
percenturban	.0003171	.0014165	0.22	0.824	-.0025585	.0031928
pop	5.04e-09	3.59e-09	1.41	0.168	-2.24e-09	1.23e-08
p2t	-.0006325	.0028742	-0.22	0.827	-.0064674	.0052023
change30thru40	9.235939	2.202106	4.19	0.000	4.765426	13.70645
_cons	-109.4367	120.844	-0.91	0.371	-354.7631	135.8897

newp2p	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
AAandHis	1.569747	14.43394	0.11	0.914	-27.73271	30.8722
depth	.5930936	.6612469	0.90	0.376	-.7493089	1.935496
farm_gdp_lagged_3yr_avg	57.03888	38.81887	1.47	0.151	-21.76762	135.8454
durables_gdp_lagged_3yr_avg	56.8984	38.81111	1.47	0.152	-21.89234	135.6891
nondur_gdp_lagged_3yr_avg	56.69741	38.85559	1.46	0.153	-22.18362	135.5784
accom_gdp_lagged_3yr_avg	-.6613487	.812004	-0.81	0.421	-2.309804	.9871071
finance_gdp_3yr_avg	-2.872486	1.073128	-2.68	0.011	-5.051052	-.6939205
mining_gdp_lagged_3yr_avg	56.73257	38.8265	1.46	0.153	-22.08942	135.5546
constr_gdp_lagged_3yr_avg	57.40253	38.55776	1.49	0.146	-20.87389	135.6789
gov_gdp_lagged_3yr_avg	56.53194	38.82304	1.46	0.154	-22.28301	135.3469
svc_gdp_lagged_3yr_avg	56.91397	38.86985	1.46	0.152	-21.99601	135.824
percenturban	.0369702	.0673132	0.55	0.586	-.0996828	.1736232
pop	-2.58e-08	2.34e-07	-0.11	0.913	-5.00e-07	4.49e-07
p2t	1.716877	.2125697	8.08	0.000	1.285337	2.148416
_cons	-5676.208	3881.186	-1.46	0.153	-13555.43	2203.019

Instrumented: AAandHis
Instruments: depth farm_gdp_lagged_3yr_avg durables_gdp_lagged_3yr_avg nondur_gdp_lagged_3yr_avg accom_gdp_lagged_3yr_avg finance_gdp_3yr_avg mining_gdp_lagged_3yr_avg constr_gdp_lagged_3yr_avg gov_gdp_lagged_3yr_avg svc_gdp_lagged_3yr_avg percenturban pop p2t change30thru40