

Very Preliminary and Incomplete

Minority Business Set-Asides and Black Self-Employment

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Introduction

Set-aside programs that target government contracts for disadvantaged and minority-owned firms are extremely controversial. During the late 1970s and 1980s there was substantial growth in the value of federal, state, and local government contracts reserved for minority-owned businesses. The purpose of these set-aside programs is to develop minority enterprise, counter the effects of past discrimination, and reduce unemployment among urban minorities. For the last ten years, however, the state and local programs established in the 1980s have been both judicially and legislatively challenged and dismantled. The *City of Richmond v Croson Co.* Supreme Court decision, decided in January 1989, invalidated the use of such programs unless they were used as narrowly tailored remedies for identified discrimination. The *Croson* decision resulted in a sharp increase in the number of court cases challenging these programs, the suspension of programs in many jurisdictions, and the genesis of studies (a.k.a., disparity studies) conducted to help areas preserve their set-aside programs. Recently, the 1995 *Adarand Constructors, Inc. v. Peña* Supreme Court decision and state referendums passed in California (Proposition 209 in 1996) and Washington (1998) further jeopardize the future of government set-asides.

Given the heated debate over the constitutionality of these affirmative action programs, remarkably, little is known about the actual effects of the original programs. Arguably, the set-aside programs implemented in the late 1970s and 1980s are the most substantive pieces of antidiscrimination legislation passed since the 1964 Civil Rights Act and Executive Order 11246 in 1965. In this study, we attempt to evaluate the impact of the programs passed in large cities during the 1980s on the self-employment rates of black men. Black self-employment is a natural initial outcome of interest since, historically, self-employment has been a route of economic advancement for disadvantaged groups. Also, some analysts suggest that stimulating black self-employment in sectors with high growth potential (e.g., construction, wholesale trade, and business services) is necessary public policy for promoting economic development in urban minority communities and alleviating poverty (Bates 1993).

Using comprehensive Current Population Survey data from 1979-1989, we document the evolution of black self-employment rates during the 1980s. A striking empirical regularity emerges from the analysis. In particular, we find that self-employment rates for black men rose dramatically in the

middle of the 1980s in cities in which set-aside programs were implemented concurrently. In addition, the gains in self-employment were concentrated in the sectors where set-asides should have had their biggest impact, such as construction (LaNoue 1992). On the other hand, the self-employment rates of white men were very stable in the same cities and sectors during the same period. The timing of the gains and their location suggest that city-level minority business set-aside programs may be an important explanatory factor underlying these differential changes.

In principle, the impact of these programs can be estimated by comparing changes in relative black-white self-employment rates in cities with programs relative to cities without programs in high-impact industrial sectors versus low-impact sectors before and after the set-aside programs were passed. Unfortunately, the data available on the details of city-level programs are not comprehensive and may not be reliable. Remarkably, there is little consensus in the literature on even the dates in which city programs were implemented. Regardless, our preliminary analysis based on the available dates suggests that many of the self-employment gains for black men in construction coincided with the timing of the procurement programs. However, we conclude that the results are only suggestive and that a definitive analysis would require obtaining reliable data on city programs and more detailed information on the characteristics of business owners and their businesses.

Background on Minority Business Set-Aside Programs

During the late 1970s and 1980s there was substantial growth in the value of federal, state, and local government contracts reserved for minority-owned businesses. The purpose of minority business set-aside programs is to develop minority enterprise, counter the effects of past discrimination, and reduce unemployment among minorities in urban communities. These programs originated from government policies that attempted to strengthen the viability of small businesses. Initially, set-asides were focused on economically disadvantaged entrepreneurs with the goal of increasing the number of minority-owned firms during the late 1960s and early 1970s. During the next fifteen years, however, set-asides were increasingly targeted to businesses that had greater future growth potential (Bates 1985).

In general, there are two types of set-aside programs. In one type, a specified percentage of the number or total dollar value of government contracts is allotted to minority-owned businesses. In the other type, prime contractors are required to allot a specified percentage of the total amount of government contracts to minority-owned subcontractors and/or suppliers (Rice 1991 and Myers 1997).¹ The percentage goals vary across programs and sometimes within programs for different purchases, such as construction contracts, procurement of goods and services, and professional services. Data on local set-aside programs listed in MBELDEF (1988) indicate that these goals range from 1 to 50 percent, with most programs having goals of 5 to 15 percent. A large proportion of the program coverage appears to be targeted towards the construction sector (MBELDEF 1988). Set-aside programs are also often complemented with procurement officials who aid minority-owned businesses in obtaining assistance (Bates and Williams 1993).

Set-aside programs exist at the federal, state, city, county, and special district (e.g. airport, water, sanitary, park, and school) level. A well-known program at the federal level is the Small Business Administration's (SBA) 8(a) program, established in 1968 as an amendment to section 8 of the Small Business Administration Act of 1953. In this program, the SBA serves as the prime contractor for goods and services to various federal agencies. The SBA then provides subcontracts to firms that are owned by individuals who are socially and economically disadvantaged.² These SBA 8(a) contracts totaled \$2.3 billion in 1983 (Bates 1985). Another important federal program is the 1977 Public Works Employment Act, which required that 10 percent of all federal public works contracts be given to minority-owned businesses. This program earmarked \$400 million of local public works to minority-owned firms (Bates 1985). The constitutionality of this program was soon challenged leading to the U.S. Supreme Court's ruling in *Fullilove v. Klutznick*, which upheld the federal government's use of these programs. *Fullilove v. Klutznick* sparked the creation of set-aside provisions among other federal agencies, and state and local governments. Minority business set-asides were mandated for federal transportation and highway

¹ The constitutionality of this type of set-aside was challenged in the 1995 *Adarand v. Peña* Supreme Court case.

² The SBA considers blacks, Hispanics, Native Americans, and Asian Pacific Americans as socially disadvantaged. In 1978, 96 percent of 8(a) firms were owned by minorities (Bates, 1985).

construction, national defense, NASA contracts, international development grants, and for the development, construction and operation of the super collider (Myers 1997). The federal government reported \$4.4 billion in contract awards to minority and disadvantaged firms in FY 1986 (Rice 1991).³

Most states also created set-aside programs for minority-owned businesses.⁴ This was a direct response to requirements that state departments of transportation administering federal highway grants and contracts oversee implementation of the federal set-aside provisions (Myers 1997). Another response to the *Fullilove v. Klutznick* ruling was the creation of minority business set-aside programs by more than 200 local governments (Myers 1997). Most of these programs were created in the early to mid-1980s (MBELDEF 1988), and many of them, especially in large central cities, were quite substantial (Bates 1985). For example, minority- and white female-owned businesses received \$191 million between 1979 and 1989 through Atlanta's set-aside program (Boston 1998).⁵

Minority business set-asides represent a multi-billion dollar annual governmental expenditure and have recently become very controversial both politically (e.g., Proposition 209 in California) and judicially (e.g., the 1995 *Adarand Constructors, Inc. v. Peña* Supreme Court decision). Remarkably, little is known about their actual effectiveness in promoting growth in the number of minority-owned businesses and in alleviating unemployment among blacks in the inner city. In particular, only a handful of studies have attempted to analyze whether these programs have met their goals.

The first obvious question is whether set-aside programs actually increased the number and/or total dollar amount of government contracts received by minority-owned businesses. Myers and Chan (1996) examine the award of public procurement and construction contracts to minority- and non-minority-owned firms before, during, and after the implementation of the state of New Jersey's set-aside program.⁶ They find that the average number of contract awards going to black-owned firms submitting

³ Of the total, three billion dollars in contract awards were through the 8(a) set-aside program (Rice 1991).

⁴ Rice (1991) reports that 36 states had set-aside programs in place by the late 1980s. To provide an example of the size of these programs, Myers and Chan (1996) report that the state of New Jersey awarded \$93 million (or 3.2 percent of the total amount awarded) of public procurement and construction prime contracts to minority-owned firms in 1988.

⁵ Procurement in Washington, D.C. to minority-owned firms was \$170 million in 1985 (Rice, 1991).

⁶ New Jersey's set-aside program started in 1985 and was suspended in 1989 due to the *City of Richmond v. Croson* decision. The authors define the pre-, during, and post-periods as 1980-84, 1985-88, and 1989-90, respectively.

bids remained unchanged from the period before set-asides (1980-84) to the period during set-asides (1985-88) and decreased from the period during set-asides to the period after set-asides (1989-90). In contrast, average contract awards for white male-owned firms increased from 1980-84 to 1985-88 and decreased markedly from 1985-88 to 1989-90.⁷ The authors conclude that New Jersey's set-aside program did not have a substantial impact on the average number of contracts awarded to black-owned firms submitting bids on state contracts. They also find that the average contract size for firms receiving contracts decreased by 9 percent from 1980-84 to 1985-88 for minorities, but increased by 14 percent during the same period for non-minority owned firms. However, due to the lack of any comparison groups to control for changes that would have occurred in the absence of the program (attributable to factors such as the 1981-82 recession), their findings may not be definitive.

Some additional evidence on the "first-stage" relationship between set-aside programs and contract awards is provided in a recent review of 58 disparity studies conducted in response to the *Richmond v. Croson* decision by the Urban Institute (Enchautegui, et al., 1996). Disparity is defined as the ratio of the percentage of total contract dollars awarded to minority-owned firms to the percentage of all available firms that are minority-owned. The study finds evidence of greater disparity in contract awards (i.e., lower disparity ratios) in jurisdictions without affirmative action programs, suggesting that such programs positively affect the amount of government contracts received by minority-owned firms. However, it is also possible that the areas in which minority businesses are more viable and competitive with non-minority firms for government contracts are also places in which set-aside programs are politically feasible and attractive to implement.

The next natural question is whether set-aside programs had an effect on the growth and viability of minority-owned firms. There appears to be little evidence on this question. Boston (1998) uses published data from the Survey of Minority-Owned Business Enterprises (SMOBE) to examine the growth rate in the number of black-owned businesses in cities that implemented affirmative action

⁷ They also find that the ratio of awards to bids decreased for black-owned firms from 1980-84 to 1985-88, whereas the ratio increased for white males during the same period. The authors argue that this decline in black bid success rates was therefore due to an increase in bids without a corresponding increase in awards.

programs in the 1980s relative to cities that did not. The data on which cities installed affirmative action programs and their dates come from MBELDEF (1988). He finds that the average growth rate from 1982 to 1992 was 65 percent in cities with programs and 61 percent in cities without programs and that this difference is not statistically significant. Since these results are based on a suspect time-frame (1992 is three years after the *Croson* decision) and narrowly-defined counterfactuals are not used, they may only be suggestive of the impact of set-aside programs.

Bates and Williams (1993) provide additional indirect evidence on the effectiveness of minority business set-asides. They find that from 1982 to 1987 total sales by black businesses and the number of black firms increased more in cities with black mayors than in cities without black mayors. Citing evidence from case studies suggesting that black mayors place a high priority on contracting with minority-owned businesses, Bates and Williams argue that the positive effect of black mayors on black business outcomes is partly due to their support of minority business set-aside programs.

Bates and Williams (1996) use data from the U.S. Census Bureau's Characteristics of Business Owners (CBO) survey to examine the survival rates of minority-owned enterprises that sell to state and local government relative to minority-owned firms that do not. Controlling for a number of firm and owner characteristics, they find that minority firms with local government sales are no more likely to survive than minority firms with no local government sales from 1987 to the end of 1991. They also find that minority firms that derive at least 25 percent of their sales from state and local government are less likely to survive than minority enterprises that are less reliant on state and local government. They note that these findings are consistent with the practice of minority firms serving as front companies and small minority firms being awarded large procurements that they are not equipped to handle.⁸

Finally, Bates and Williams (1995) explore whether the characteristics of preferential procurement programs have an effect on survival among minority-owned businesses. The authors and the Joint Center for Political and Economic Studies (JCPES) collected detailed profiles on minority-

⁸Bates and Williams (1995) note that many state and city programs do not make a serious attempt to verify that minority firms receiving contracts are actually minority-owned and operated, and that in some programs it is not even illegal to act as a front company. See Bates and Williams (1995) for more details.

business set-aside programs in 28 large cities in the United States (JCPES 1994). The profiles include information on program dates, program assistance staffing, provision of capital assistance, bonding, downsizing of large procurement contracts, certification of minority business enterprises, penalties for violation of certification or program regulations, and treatment of brokers. They find higher survival rates among minority-owned businesses that derive 1-24 percent of their sales from state and local governments in cities with affirmative action programs that have a rigorous certification process, a staff assigned to assist minority firms, routinely wave bonding requirements or provide bonding, and/or provide working capital assistance to minority firms receiving contracts. Their results are less clear for minority firms that derive at least 25 percent of their sales from state and local governments.

We conclude that little is known about whether set-aside programs have met the goal of generating successful minority-owned businesses. In this study, we attempt to examine whether the set-aside programs established in many of the largest U.S. cities during the 1980s had an impact on self-employment rates among black men relative to white men.⁹ The analysis is based on the comprehensive microdata on self-employment contained in the Current Population Surveys and on the two sources of city-level affirmative action dates that have been previously used and that we are aware of, MBELDEF (1988) and JCPES (1994). In principle, the impact of the programs can be estimated by comparing changes in black self-employment rates relative to white self-employment rates in cities with programs relative to cities without programs in high-impact industrial sectors (construction, business services and wholesale trade) versus low-impact sectors with respect to the timing of the set-aside programs.¹⁰ The annual CPS data allows for precisely dating any shifts in relative self-employment rates during the 1980s.

Before proceeding, we note several caveats with our analysis. First, our approach is a descriptive first pass at the question and reduced-form in nature since more detailed data on the “first-stage”

⁹ Communications with Thomas Boston and Timothy Bates suggested that state-level set-aside programs are much less substantive than city-level programs and that most county-level programs follow the city programs since targeted minorities generally live in central cities.

¹⁰ According to a communication with Timothy Bates, construction, business services, and wholesale trade are the sectors that were impacted the most by set-aside programs. Construction is the largest in terms of dollar amounts, and business services is the largest in terms of number of firms. Examining the MBELDEF (1988) document, it appears that the bulk of city-level program coverage was targeted at minority construction firms.

importance of these programs (e.g., contract awards and amounts) are not readily available. Second, since the goals of set-asides are to enhance the long-run success of minority-owned firms and alleviate unemployment among blacks in cities, a definitive analysis would entail examining outcomes such as business revenues, profits, and failure rates and the racial composition of those employed in minority firms. Finally, we conclude below that the dates provided by MBELDEF (1988) and JCPES (1994) are often inconsistent with each other and may not be accurate. Remarkably, it appears that there is no consensus in the literature on even the dates in which cities passed set-aside programs. Consequently, the modest goal of this study is to establish some empirical facts on the evolution of self-employment rates of black men during the 1980s. We will discuss the above issues more below.

CPS Data and a Striking Stylized Fact

The primary data source on self-employment comes from the 1979-1989 Current Population Survey (CPS) Merged Outgoing Rotation Group (ORG) files which contain information for one-quarter of the individuals in each monthly CPS. Combining the observations from the monthly surveys results in annual samples which are roughly three times larger than a monthly CPS. The extremely large sample sizes are important since the group of interest, self-employed black men, is very small relative to the population. In addition, it allows for a more informative, disaggregated analysis (e.g., by industrial sector). On the other hand, the ORGs only include data on work characteristics in the survey week and do not contain information on self-employment income. As a result, we also analyze the 1979-1989 CPS March Annual Demographic Files (ADF), which contain information on work characteristics and income received during the previous calendar year. Due to its smaller sample sizes, a precise analysis with the ADF files is not possible.

These two sources provide annual information on minority and non-minority patterns of self-employment from 1978 to 1988. We focus on these years because they encompass the period when most major cities in the United States created set-aside programs. The period after 1988 is not included since the 1989 *Crosby* decision led to the suspension or dismantling of set-aside programs in many cities. For now, we focus on examining the impact of the original set-aside programs and leave an examination of

the effects of *Crosnon* to future research. Although the CPSs only allow for an analysis of self-employment rates (defined as the ratio of the self-employed to the population), it is a natural initial outcome to examine. Historically, self-employment has been a route of economic advancement for disadvantaged groups (Glazer and Moynihan 1970). In addition, high self-employment rates for racial and ethnic groups are strongly associated with high average incomes (Fairlie and Meyer 1996).

Identification of self-employed workers is based on the unedited class of worker question in the CPS and is defined to be those individuals who self-report being self-employed in their own incorporated or “not incorporated” business.¹¹ This question refers to the job with the most hours during the reference week in the ORG files and the job held the longest in the previous year for the ADF files. For the ADF data, we further restrict the definition of self-employment to include only individuals who worked at least twenty weeks and usually worked at least 15 hours per week in self-employment during the previous year. Analogous restrictions are not used in the ORG since similar information was not readily available.¹² We include only non-Hispanic white and black men and women aged 20 to 64 in this analysis. All group specific self-employment rates are taken relative to the entire race and gender specific populations.

Finally, since the analysis is focused on city-level changes in racial self-employment rates, consistently matching cities over time in the CPSs is imperative. In the ORG files, the 44 largest Statistical Metropolitan Statistical Areas (SMSAs) can be identified from 1979 to September 1985 based on their 1970 Census population size ranking (57 SMSA identifiers). After 1985, the city coding scheme changed to a more detailed system with 252 Consolidated MSA (CMSA) ranking identifiers, some subdivided into as many as 12 Primary MSA (PMSA) ranking codes. Matches for the 1986-89 cities to the 1979-85 cities in the ORG were based on making the CMSA and PMSA rankings compatible with the SMSA rankings. Population totals were examined to gauge the quality of the match. City identifiers are missing for all records during the last three months of 1985. Matching cities in the ADF files is based on the FIPS MSA/PMSA codes, which also changed slightly after 1985. Again population totals were

¹¹ Unpaid family workers are not counted as self-employed.

¹² In the future, we will redo the analysis dropping individuals who are not employed in the reference week and individuals who report being part-time status.

examined to gauge the quality of the match. The final analysis is based on the 44 MSAs that can be consistently matched over the entire decade.¹³

Table 1 presents some summary information on the characteristics of the self-employed, by race and gender, for the 1979-89 ORG data. There are several points of interest. First, blacks and women are much less likely to be self-employed than white men, with black men having self-employment rates that are lower than those of white women and 3 times lower than those of white men. Similarly, black men who are self-employed are two times less likely to be incorporated than self-employed white men. The 44 MSAs identified in the CPS account for over 50 percent of the black population and about 38 percent of the white population. The 33 MSAs for which we have information on their set-side programs account for nearly all of the blacks who live in the identified MSAs. The unemployment rate and the employment-population ratio are much higher and lower, respectively, for black men relative to white men in the MSAs with set-aside information. Finally, the self-employed are generally older and better-educated than those not self-employed.

To illustrate the location of self-employment, Table 2 shows the distribution of self-employment across industries, by race and gender. The industries are roughly ordered from top to bottom by sectors that are more and less likely to be impacted by minority business set-asides. In particular, it is generally accepted that construction should be the most affected industry followed by wholesale trade, business and repair services, and transportation, communication, and other utilities.¹⁴ Strikingly, 22 percent of all self-employed black men and 19 percent of self-employed white men are in construction. Over 50 percent and 38 percent of black and white male self-employment are in the five most heavily impacted sectors, respectively. These figures are only 16 and 18 percent for black and white women, respectively. The

¹³ It is worth noting that the matched MSAs are the largest cities and contain a substantial fraction of the black population. In addition, San Francisco and Oakland and Tampa and St. Petersburg are not separately identified from each other before 1986. Consequently, although these areas had different affirmative action dates, San Francisco-Oakland was assigned San Francisco's date and Tampa-St. Petersburg was assigned Tampa's date. Finally, potential "timing" differences between the ADF and ORG is an issue we will consider more in the future.

¹⁴ Bates (1993) suggests that black-owned businesses historically have been heavily concentrated in the small-scale service and retail trade sectors, which had limited growth potential and where most owners had very low incomes. During the 1980s and 1990s black firms have emerged in construction, wholesale trade, and business services; sectors with large-scale firms that have higher survival rates and that are more likely to create jobs for minorities.

majority of female entrepreneurs are in retail trade and personal and professional services. Consequently, most of our analysis focuses on black and white men only.

Based on the ORG Data, Figure 1A plots the self-employment rate (relative to the population) for whites and all blacks in the U.S. and in the MSAs with set-aside information. A striking empirical fact emerges from the figure. Black self-employment rates in “contributing” MSAs were relatively stable at about 2.8 percent from 1979 to 1983 but then jumped by almost 30 percent to about 3.6 percent in 1984 and 1985 and remained at this higher level for the rest of the decade. It is also clear from the figure that the gains in black self-employment in the U.S. after 1983 were driven entirely by the MSAs with known set-aside programs. On the other hand, self-employment rates for white men in contributing MSAs grew from 12 to 14 percent from 1979-83, causing growth in white self-employment rates in the U.S., but then leveled off after 1983. Figure 1B documents that while black women did experience a positive shock to self-employment in the 1983-85 period, most of the growth in black self-employment exhibited in Figure 1A is driven by the very large gains in self-employment among black men. Black male self-employment rates increased sharply from about 4.3 to 5.2 percent between 1983-84 and remained at this higher level for the rest of the 1980s.¹⁵

For a sense of changes in economic conditions during the period, Figure 1C graphs employment-population ratios by race in the U.S. and in contributing MSAs. It appears that the employment experiences of black and white men in contributing MSAs were very similar to those of the U.S. male population. Employment rates declined sharply from 75% to 67% for black men in contributing MSAs from 1979-82, but rebounded after 1983 to its original level by the end of the decade. White employment rate patterns appear to be less cyclically sensitive. Consequently, the remarkable jump in self-employment rates for black men in the early to mid-1980s does not seem to be attributable to worsening

¹⁵ It is noteworthy that the fraction of men in incorporated self-employment also rose for blacks after 1983 and leveled off for whites. Fairlie and Meyer (1998) use the decennial censuses to document that while the relative black-white self-employment rate ratio declined from 1970-1980, it increased from 1980-1990.

economic conditions for blacks. In addition, although the trends are only suggestive, the rebound in overall black employment rates coincided with the growth in black self-employment.¹⁶

Figure 2 depicts the changes in black male self-employment rates in the contributing MSAs by four major industrial sectors. Construction is the sector where set-asides presumably have the largest impact; business services, wholesale trade, and utilities (rows 2-4 in Table 2) should be moderately impacted; retail trade, finance, insurance, professional, personal, and household services may be slightly affected (rows 6-10 in Table 2); and all other industries, including manufacturing and agriculture, are presumably unaffected by local set-asides. The figure shows that most of the gains in black self-employment after 1983 occurred in construction, with a noticeable contribution also coming from wholesale trade and business services, and a smaller contribution from retail and other services. On the other hand, black self-employment rates in manufacturing, mining, and agriculture were very stable after 1983. The concentration of the gains by industry suggest that city set-aside programs passed in the early and mid-80s may be an important factor underlying the observed trends, especially in construction.

Figures 3A and 3B examine this possibility in more detail. They plot self-employment rates in construction for black and white men in contributing MSAs and in the U.S. The rates are relative to the population in 3A and relative to men who report being in the construction sector in 3B.¹⁷ The figures are very similar and show that self-employment rates in construction increased dramatically among black men in contributing MSAs after 1983, with the rate nearly doubling by 1987. In addition, the gains for blacks in the U.S. were driven by the contributing MSAs, and white construction self-employment rates in contributing MSAs were relatively stable after 1983. According to the CPS weighted population counts, the number of black men in contributing MSAs who were self-employed in construction rose from a low of about 69,500 in 1983 to a high of 147,400 in 1987, which accounts for 88% of the total increase in black self employment in construction in the entire U.S. On the other hand, the number of

¹⁶ Trends in average education and age during the 1980s are very similar for self-employed black and white men and black and white workers.

¹⁷ Individuals in construction include those who may be unemployed or out of the labor force but who have worked in the construction sector in the last five years and report it as their industry. One drawback to examining minority self-employment rates only among men in construction is that it may mask some of the impact of set-aside programs if self-employed blacks increase minority employment in construction by hiring blacks (Bates 1988).

white men in contributing MSAs self-employed in construction rose from 1,287,900 in 1983 to 1,337,000 in 1987, accounting for only 8% of the total increase in the U.S.¹⁸

The above empirical regularities are both striking and previously undocumented. The natural next step is to try to measure the factors that underlie the large changes in black self-employment that occurred in the early to mid 1980s. The timing of the gains and their geographic and industrial location suggest that one important explanatory factor may be city-level minority business set-aside programs. We now discuss our preliminary data on the timing of these programs.

Data on City-Level Set-Aside Programs

As mentioned above, the vast majority of city-level set-aside programs were implemented during the early and mid-1980s. Our data on the years in which these programs were enacted come from the two sources previously used in the literature and the only ones we are aware of. The first source is the 1988 Report on the Minority Business Enterprise Programs of State and Local Governments by the Minority Business Enterprise Legal Defense and Education Fund. This report was intended to represent an exhaustive list of local affirmative action programs existing in the United States as of 1988.¹⁹ The report contains information on program initiation dates, authority, coverage, and percentage goals for most programs. These data were previously used in Boston (1998).

The second source of data on program dates is a report to the U.S. Department of Commerce Minority Business Development Agency entitled, Assessment of Minority Business Development Programs, by the Joint Center for Political and Economic Studies (JCPES) in 1994. This report contains detailed profiles on minority-business set-aside programs in 28 large cities in the United States. For our analysis the most important information contained in the profiles is the program initiation dates, although the profiles contain much more information as noted above in our review of Bates and Williams (1995).

¹⁸ About 32% of all black men self-employed in construction are located in the contributing MSAs, while this figure is about 22% for white men.

¹⁹ A personal communication with Franklin M. Lee, Chief Counsel of MBELDEF, revealed that the report is probably not an exhaustive list. Information from other sources also revealed that a few cities with programs existing in 1988 are not listed in the report and that the listed starting date for Atlanta's program is incorrect.

Table 3 presents a summary of the information provided in MBELDEF (1988) and JCPES (1994) on program dates and their percentage goals for the 44 cities identifiable in the CPS. The final column of the table provides the set-aside dates used in this study, in which we have combined the dates from the two sources and used the MBELDEF dates for the 12 cities in which both sources have information.²⁰ Altogether, we have program date information for 33 of the 44 MSAs. Unfortunately, the 11 cities without listed set-aside dates may still have had programs since Bates and Boston suggested that both data sources may be incomplete.²¹ Consequently, the following analysis does not use cities or areas without set-aside programs as a control group since we are unsure about which cities and areas did not have programs. As shown above, many blacks live in the cities identified in the CPS and the vast majority of them live in the cities for which we have set-aside dates (about 50% of black male self-employment is in identified MSAs with set-aside information).

Figure 4A presents the frequency distribution of set-aside program start dates by year for the two different sources in Table 3. According to both sources, most city-level programs were passed in the early to mid-1980s, particularly from 1983-85. Seventy percent (14 of 21) of the dates from MBELDEF are in the 1983-85 period, which coincides exactly with when black self-employment rates jumped up in the preceding figures. Although the mode of the JCPES dates is also 1983-84, the JCPES distribution is more spread out during the 1980s.

Both MBELDEF and JCPES contain information on 12 of the cities. For these cities, Figure 4B examines the consistency of the dates in the two sources as a first pass at their reliability. A line is graphed where the years are equal. Remarkably, it appears that there is little consensus on even the dates in which cities passed set-aside programs. The two sources agree on only 4 of the 12 cities (Los Angeles, San Jose, San Francisco, and Boston). The two sources disagree by at least 2 years for 7 cities and by at

²⁰ The MBELDEF dates may be slightly more accurate because they were collected prior to the many changes to programs brought about by the 1989 *Crosby* decision (based on a conversation with Thomas Boston).

²¹ For example, Bates informed us that the original goal of JCPES (1994) was to get data for 50 cities, but some cities refused to answer while others did not have programs.

least 5 years for 4 cities. Consequently, we are very concerned about the reliability of these dates, and all subsequent analyses based on these dates are suspect.²²

Since obtaining the correct program details is crucial to a credible analysis, future work will focus on attempting to obtain reliable data on the city programs. In addition to getting the right dates, it will be important to find annual city-level contract awards information, by industrial sector. The ideal analysis of the CPS data would entail relating black-white relative self-employment rates to variation in the timing, proportion, and amount of government contracting dollars set-aside for minority businesses across cities and industrial sectors over time.²³

Very Preliminary Results on the Impact of Set-Asides

Taking the dates in Table 3 at face value, and suspending some disbelief, one can estimate the relationship between set-aside program timing and changes in relative self-employment rates for black men in cities that implemented programs. This may not be a completely uninformative exercise since the dates in Table 3 may at least be correlated with the true dates.

Figures 5A-C depict changes in self-employment ratios with respect to program timing using the March CPS-ADF data on the job held longest last year. On the horizontal axis of each graph, “0” is the year that the program was passed, “-1” is 1 year before the program, “+1” is one year after the program, and so on. Figures A and B show the self-employment rates of all blacks and black men, respectively, using the two different program sources separately and combining them. First, note that the results based on the two different sources are quite different, although they both suggest that self-employment rates for

²² Additional complications exist with respect to the timing of the programs listed in the two sources. For the MBELDEF data, the date of the administrative order or resolution can often be an inaccurate measure of the date that the program started. In many cases, the actual program did not start for several years after the order/resolution. Boston found that the MBELDEF dates were wrong for Atlanta. Bates suggested similar problems with the JCPES data. His guess is that the actual start date for several programs was about 2-3 years after the passing of the resolution/ordinance. He also found that city contacts often did not know the start dates, and that different people would sometimes give him different start dates.

²³ One potential source of this ideal data is the actual city records contained in each locality’s legal department and recorder’s office. Preliminary attempts at contacting city offices have been difficult. These could be complemented by searches of Lexis/Nexis, Small Business Administration (SBA) publications, and the collection of disparity studies housed at the University of Maryland, Baltimore.

blacks increased after the implementation of the programs. Consequently, the graphs based on the “combined” dates also appear to show an increase in black self-employment after the program relative to the three years before the program. Figure C shows that self-employment rates for white men were relatively stable both before and after the program. It should be noted, however, that the results for blacks are based on relatively small samples. These findings tentatively suggest that the city-level set-aside programs may have positively impacted minority self-employment.²⁴

Figures 6A and B show the black male self-employment ratios based on the CPS-ORG data. In Figure A the differences between the patterns for the two different sources is more obvious than in the ADF data. The JCPES results seem to show large and immediate self-employment gains for black men right after program implementation, while the MBELDEF results show gains that are just as large in the years leading up to program passage as in the years after. As a result, using the combined dates, Figure B seems to show that white men experienced gains in self-employment at least as large as those of black men after program passage when compared to the gains before passage. This evidence does not support the story that set-aside programs had a positive impact.

Since set-side programs should have their largest impact on the construction sector, Figures 7A and B depict changes in construction self-employment rates for black men and white men with respect to the program timing using the combined JCPES and MBELDEF dates. Figure A uses men in the construction sector as the relevant population for the denominator, while Figure B uses the entire male population for the denominator. The results in A and B are very similar. In particular, Figure A shows that construction self-employment rates for black men increased from about 12% before the programs to about 18% after. On the other hand, rates for white men were relatively stable before and after the programs were passed. If the dates are reasonably close to the truth, then these figures seem to provide strong evidence that set-aside programs worked.

²⁴ An advantage of the ADF files is that we can also examine changes in black-white relative self-employment income. The results suggest that the black-white income gap narrowed immediately after the programs relative to the two years before. However, the estimates for blacks are very noisy due to the small sample sizes.

The composition of calendar years and cities is different in each of the program time periods that form the horizontal axes in the previous figures. Consequently, some of the observed changes in self-employment may be attributable to year effects, city effects, and changes in the demographic characteristics of individuals in each city over time. Table 4 presents regression-adjusted estimates of changes in self-employment rates relative to the year that the set-aside was passed, for black men and white men separately.²⁵ Table 5 presents the same information for those individuals in construction. The basic conclusion from the tables is that controlling for year effects and education, age, age-squared, and an education-age interaction has little effect on the patterns depicted in Figures 6 and 7. Controlling for city effects also has no statistically significant effect. This is because the sampling errors increase substantially when city intercepts are absorbed. We do not estimate more restrictive empirical models of the impact of set-asides (e.g., difference-in-differences models, trend break models) since these would rely heavily on the dates which we believe are potentially suspect.

Figure 8A graphs the estimated relative self-employment rates in construction adjusted for year effects from the columns (1) in Table 5 for black and white men. Figure 8B presents the same information for the case where the population is used for the denominator. The patterns in the two figures are very similar to each other and to the ones in Figure 7. Again, they suggest that affirmative action programs may have had a substantial impact on the number minority-owned construction firms.

Figure 8C shows both the actual construction self-employment rates by calendar year from Figure 3B and the rates adjusted for the timing of the city-level affirmative action programs. The latter rates are the estimated year effects from columns (1) in Table 5. Differences in the “unadjusted” and “adjusted” year effects measure the amount of the annual variation in construction self-employment rates attributable to the timing of the set-aside programs. First, note that for the years before 1983, the black-white self-employment rate gap adjusted for the timing of the programs is much smaller than the unadjusted gap. In addition, adjusting for program timing has almost no effect on the time-pattern of white self-employment

²⁵ Estimating separate regression equations by race is equivalent to interacting all of the control variables (year and city effects, age and education) with race.

rates in construction. On the other hand, adjusting for program timing does absorb a noticeable amount of the year-to-year changes in black self-employment rates, especially from 1983-84 . This suggests that some of the patterns documented in Figure 3B are attributable to set-aside programs. However, much of the 1984-85 jump in black self-employment rates remains.

There are three potential explanations for this: 1) there truly was a secular shock to self-employment opportunities for black men in construction from 1984-85; 2) our empirical specification does not adequately capture dynamics in the relationship between the passage of set-aside programs and subsequent self-employment changes; and 3) the program dates that we use are measured with error. Understanding the above is the subject of future research.²⁶

Future Directions for Research

In the above analysis, we documented some striking stylized facts on the evolution of black self-employment rates during the 1980s using CPS data. As mentioned above, a credible analysis of the impact of set-aside programs would require, at least, obtaining reliable data on the dates and details (e.g., contract awards by sector) of the city-level affirmative action programs. Also, examining additional outcomes such as business revenues, profits, and failure rates, and the racial composition of employment in minority firms is necessary for a definitive analysis of the overall impact of the set-side programs. To this end, we hope to obtain access to the Census-like microdata in the Characteristics of Business Owners (CBO) surveys and the Surveys of Minority-Owned Business Enterprises (SMOBE) at a Census Data Center secure site (e.g., the Berkeley-UCLA center). In addition to containing very detailed data on the characteristics of the business owners, their businesses, and the workers in the firm, these surveys have information on the fraction of sales coming from government contracts (Bates 1990 and Boston 1998). In addition, the surveys are conveniently timed every five years (e.g., 1982, 1987, and 1992), and can be complemented with the 1980 and 1990 5-percent Censuses of the Population.

²⁶ We also analyzed self-employment rates for white women. In general, these rates follow the same trends as other indicators for the status of white women in the labor market such as employment rates and earnings relative to white men. Thus, it is not possible to separate the effects of set-sides from these secular trends during the 1980s.

Finally, we will examine other, potentially more convincing, research designs for measuring the impact of set-aside programs. As a result of the 1989 *Croson* decision, which effectively nullified race-based local contracting programs that were not based on proven past discrimination, many state and city governments suspended or dismantled their set-aside programs. A potential “quasi-experiment” would use the differential changes in minority contract awards across localities induced by the *Croson* decision to identify the set-aside program effects. Such an analysis could be more robust since the differential effects of the court decision may be unrelated to underlying local economic and political conditions.

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Figure 1A: Self-Employment Ratios by Year
CPS-ORG Data

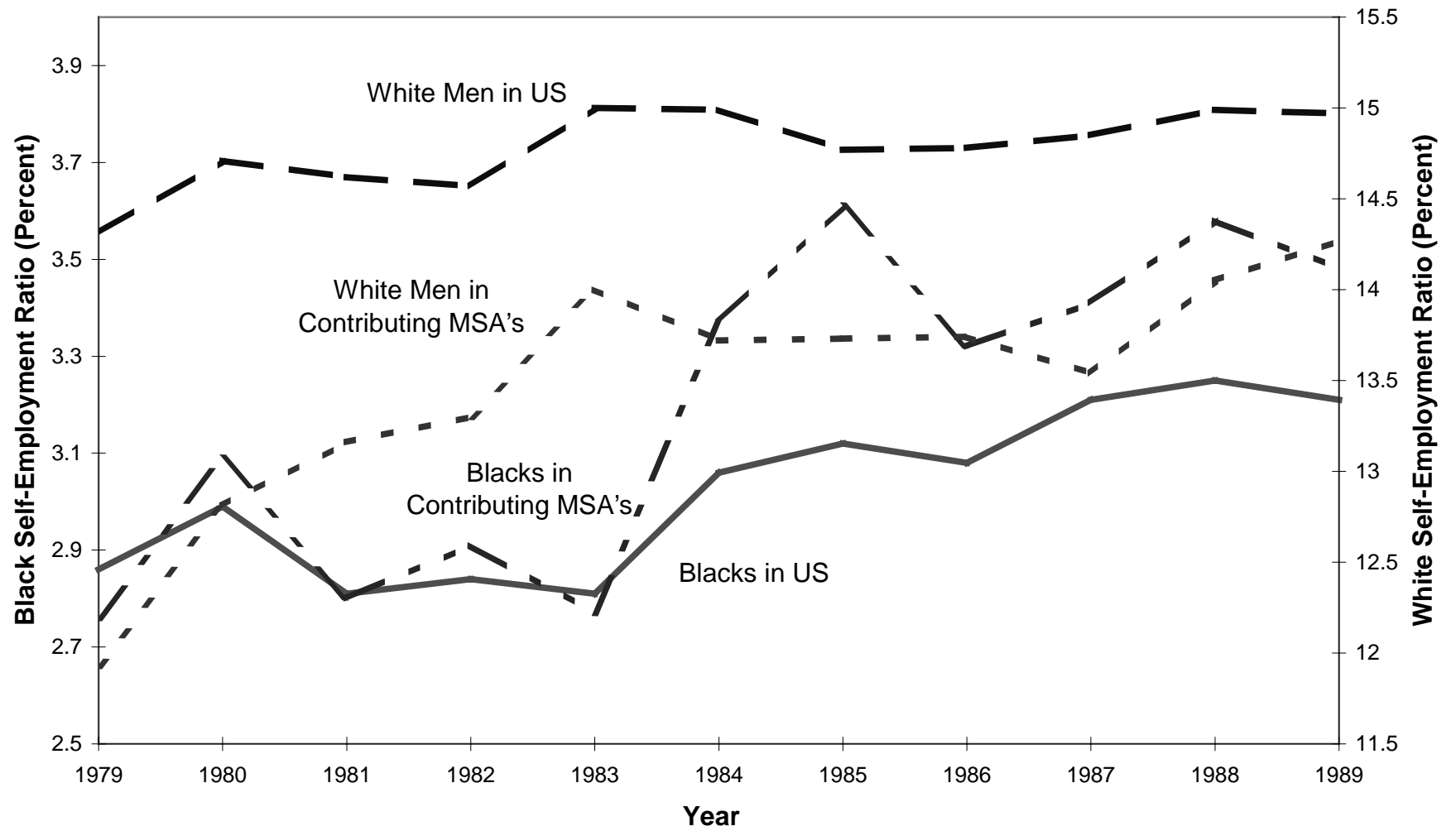
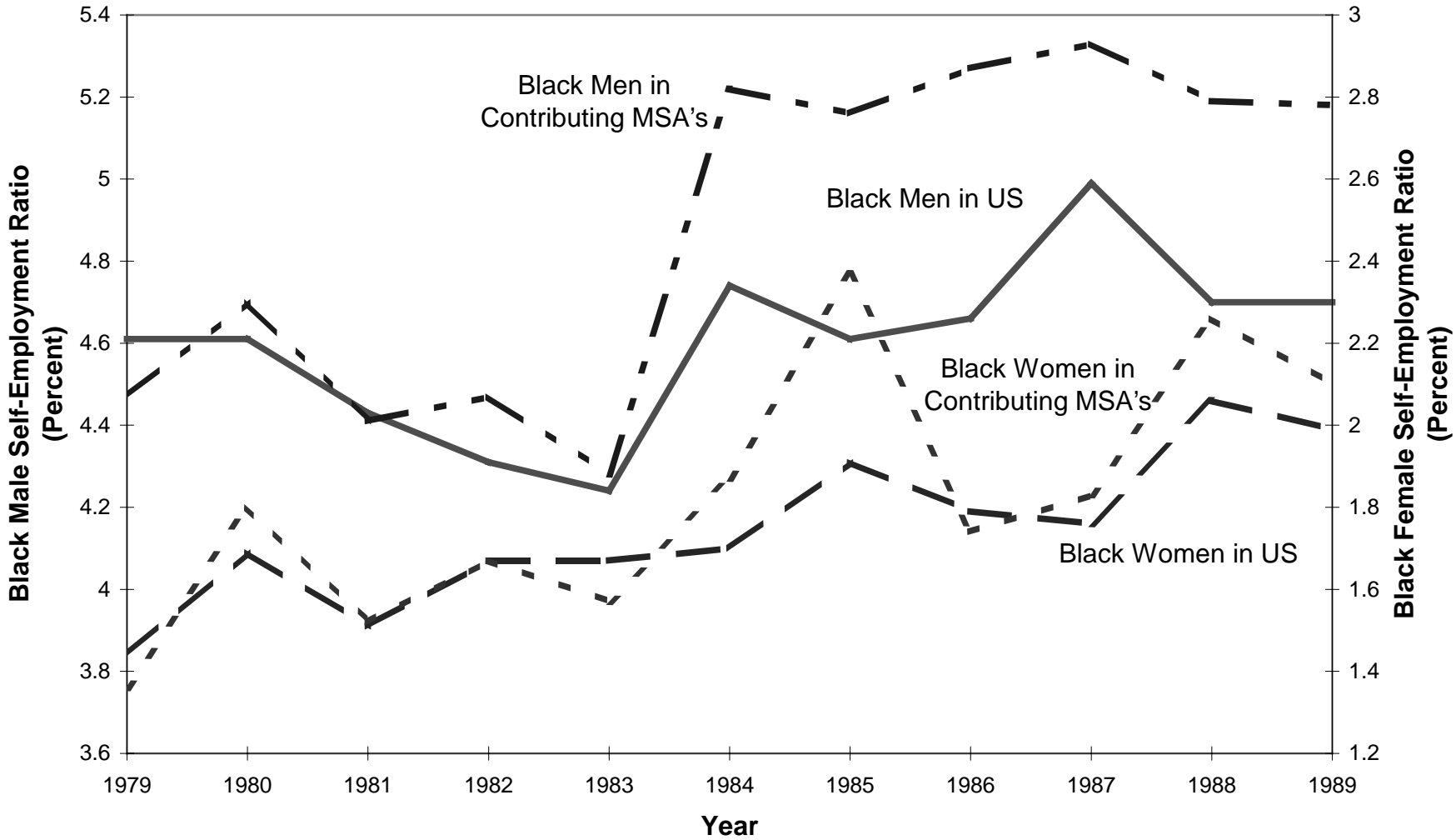


Figure 1B: Black Self-Employment Ratios by Year
CPS-ORG Data



**Figure 1C: Employment-Population Ratios by Year
Men, CPS-ORG Data**

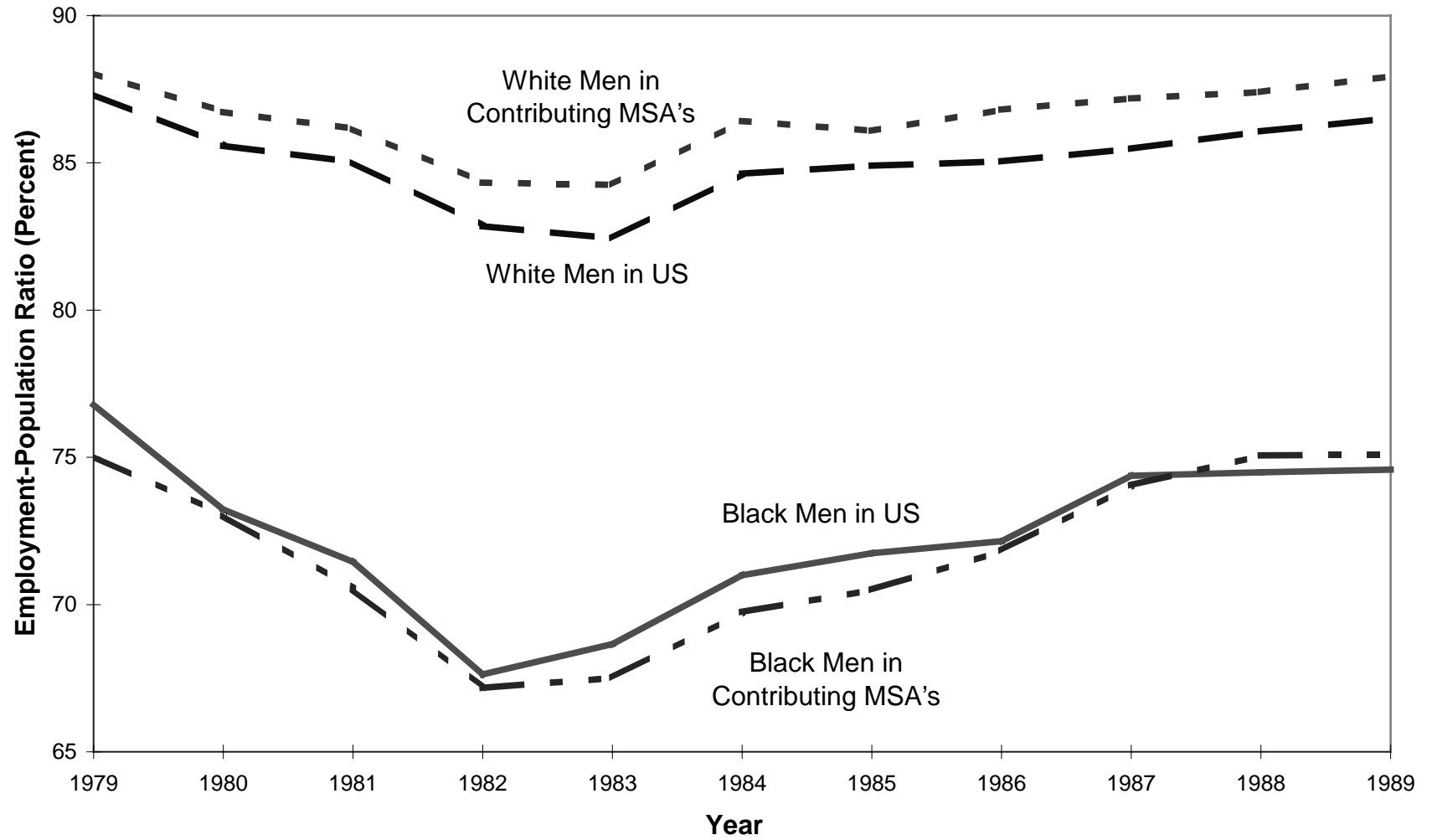
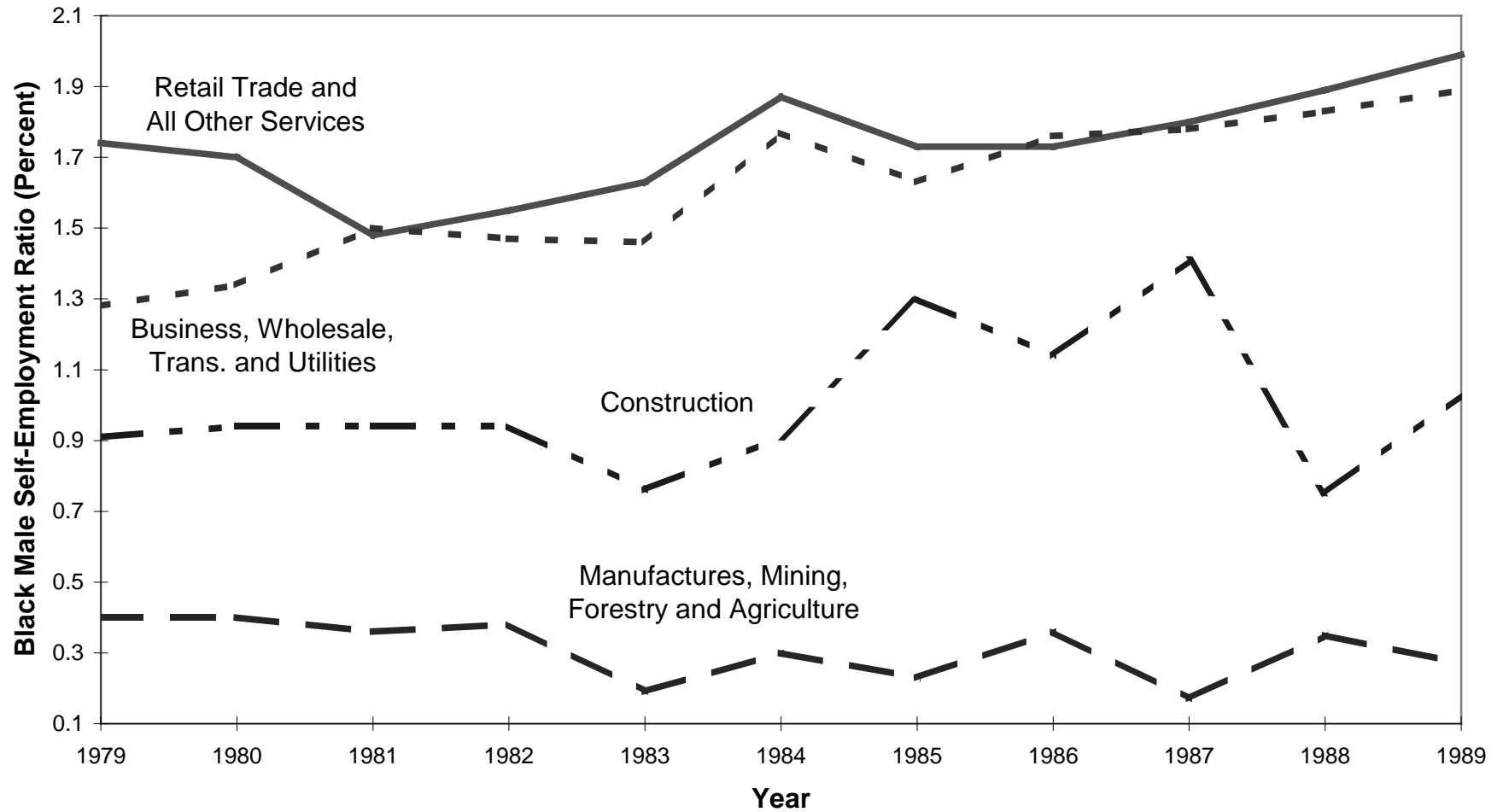


Figure 2: Black Self-Employment Ratios by Industry Group and Year
Men in Contributing MSA's, CPS-ORG Data



**Figure 3A: Self-Employment Ratios by Year, Relative to Population
Construction Sector, CPS-ORG Data**

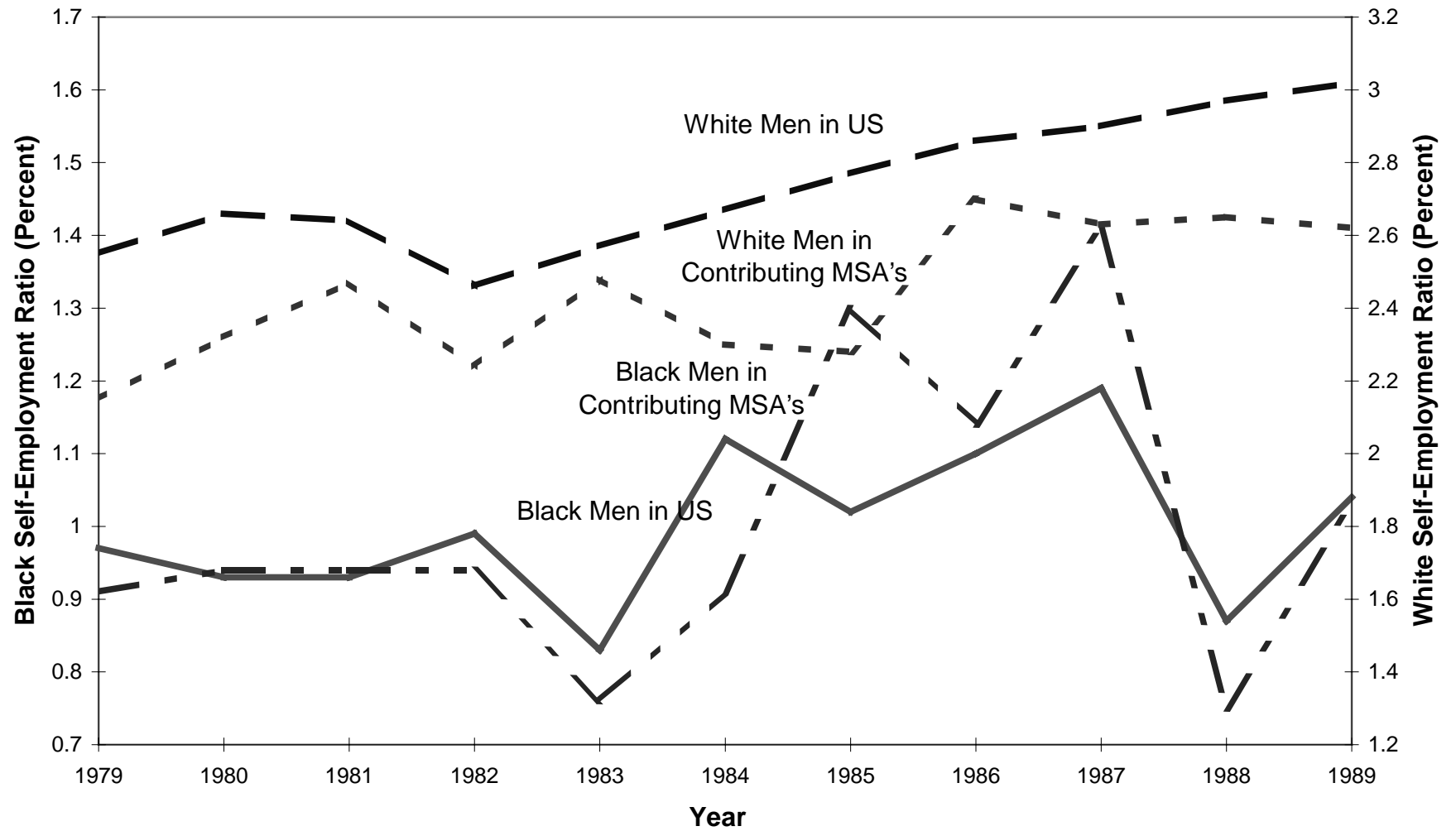
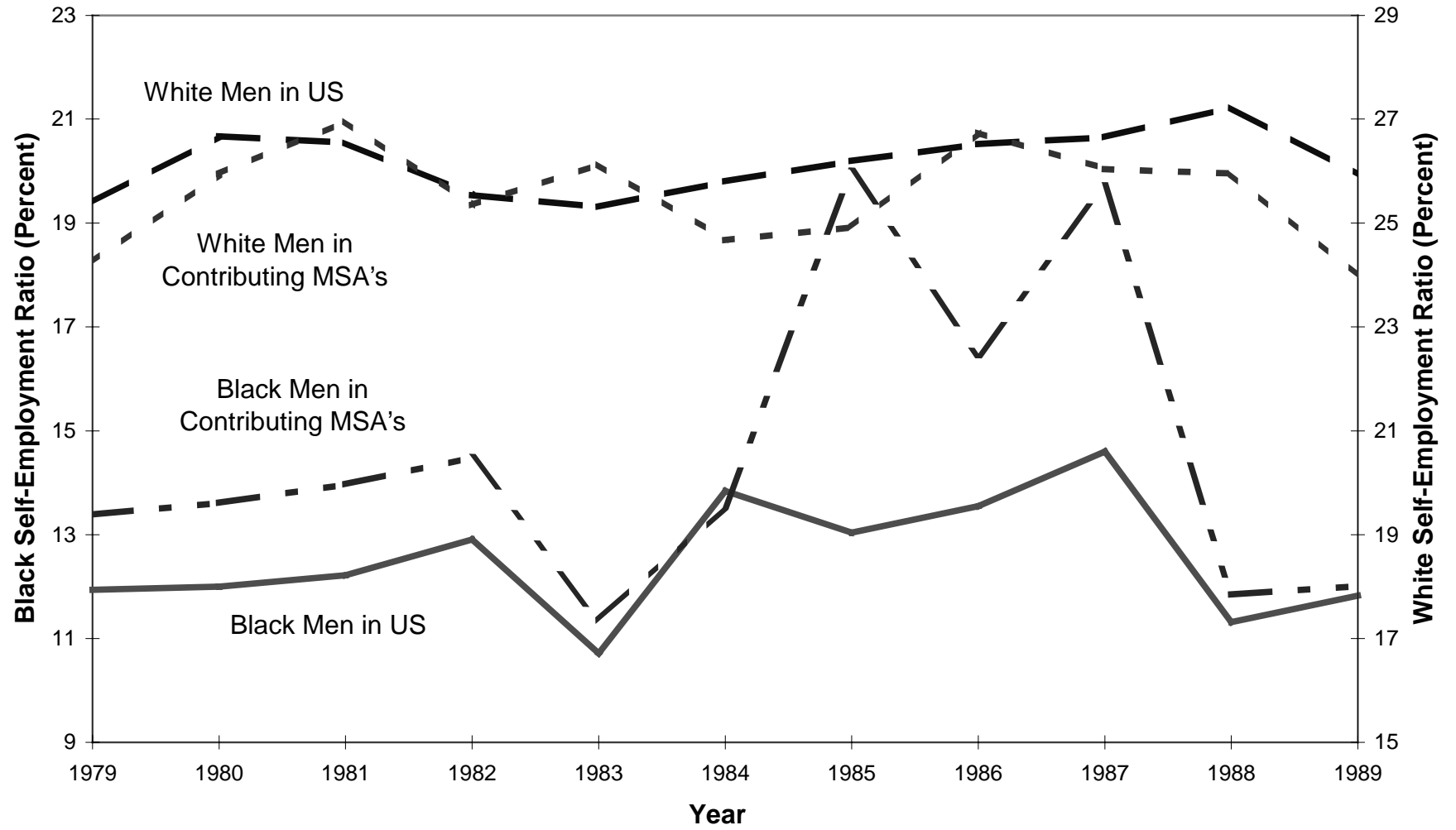


Figure 3B: Self-Employment Ratios by Year
Construction Sector, CPS-ORG Data



**Figure 4A: Frequency of Start Dates for Affirmative Action Programs
According to MBELDEF and JCPES**

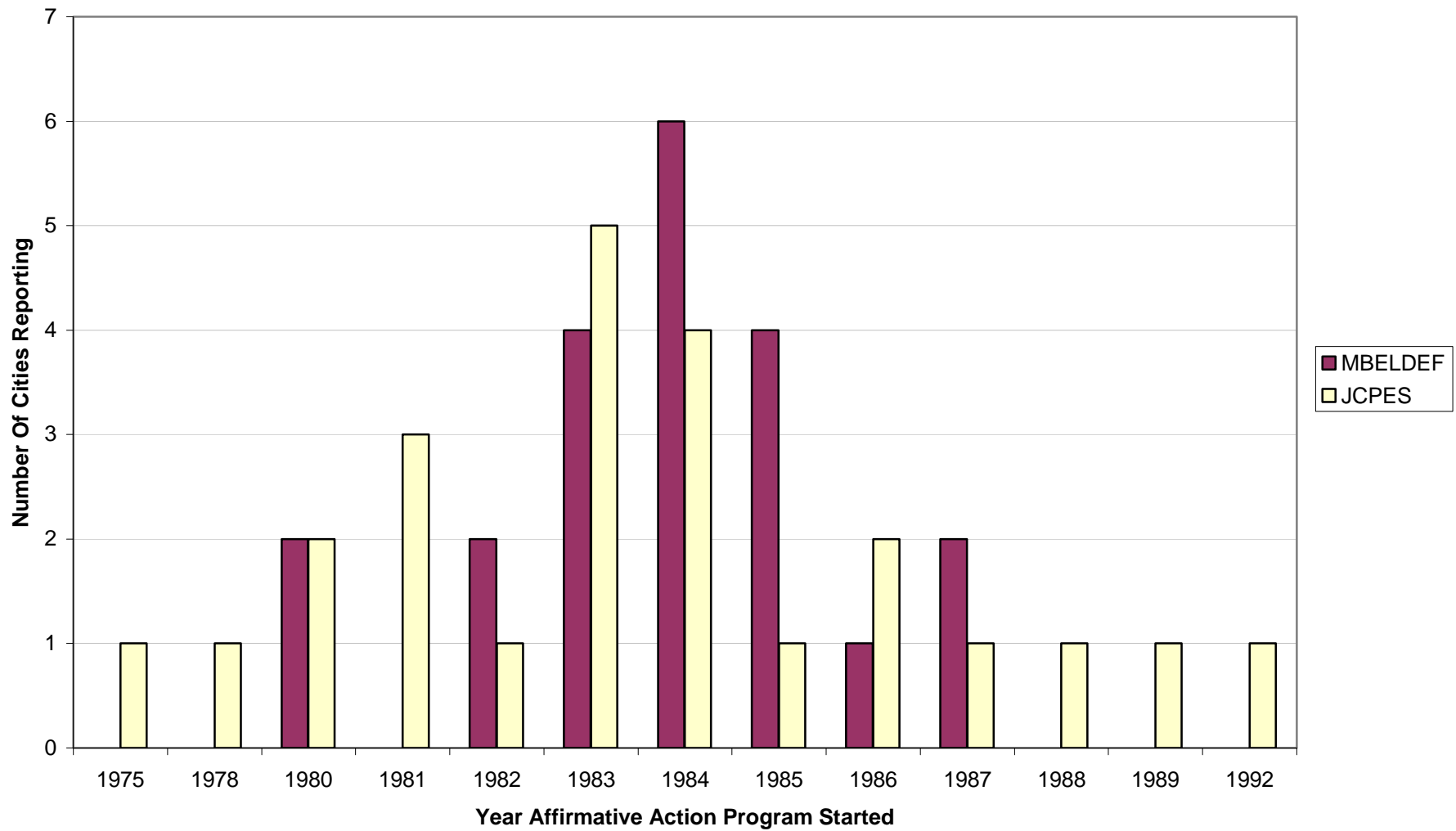


Figure 4B: MBELDEF VS. JCPES Start Dates

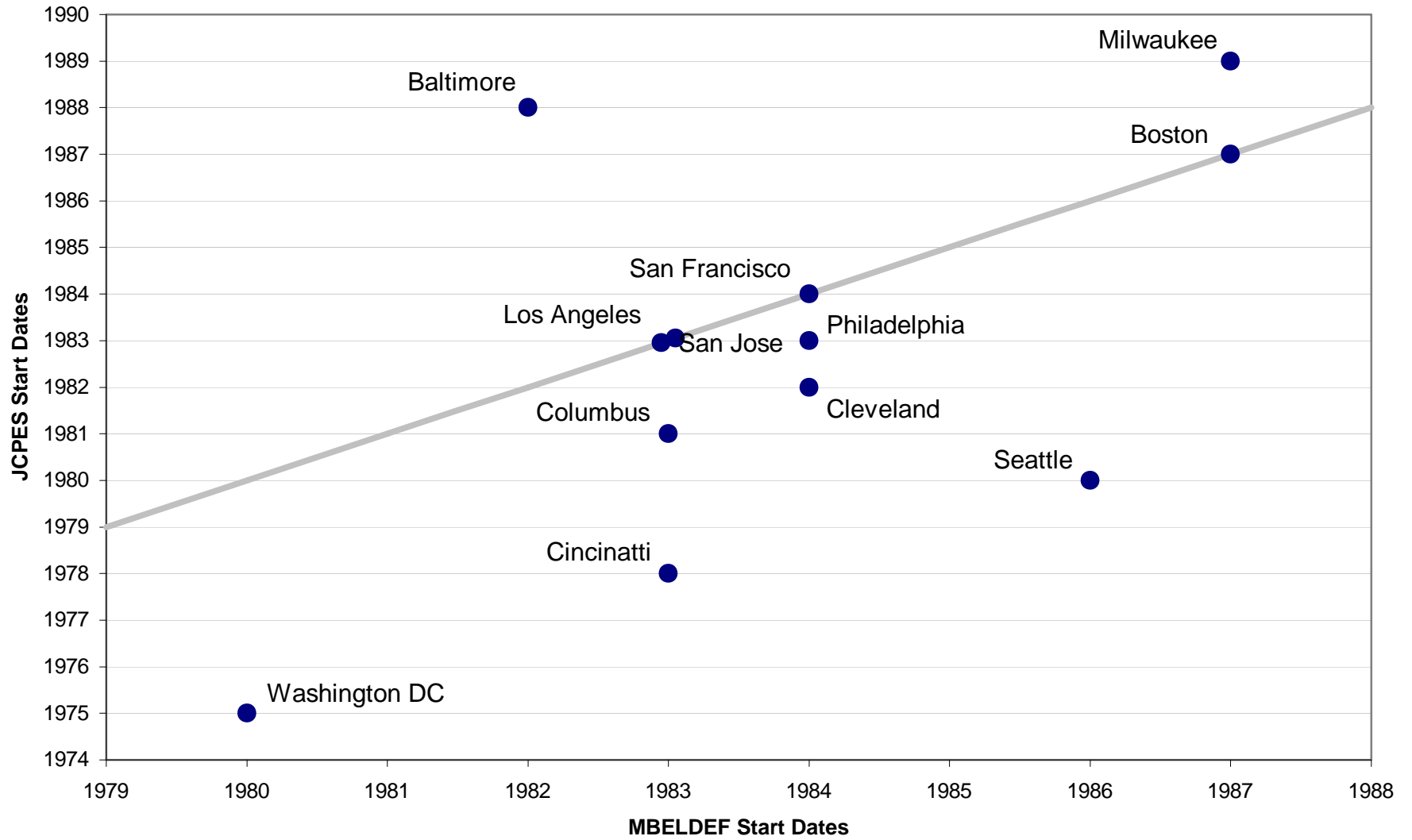


Figure 5A: Self-Employment Ratios by Timing of Affirmative Action Programs
Different Sources for Start Dates, All Blacks, CPS-ADF Data

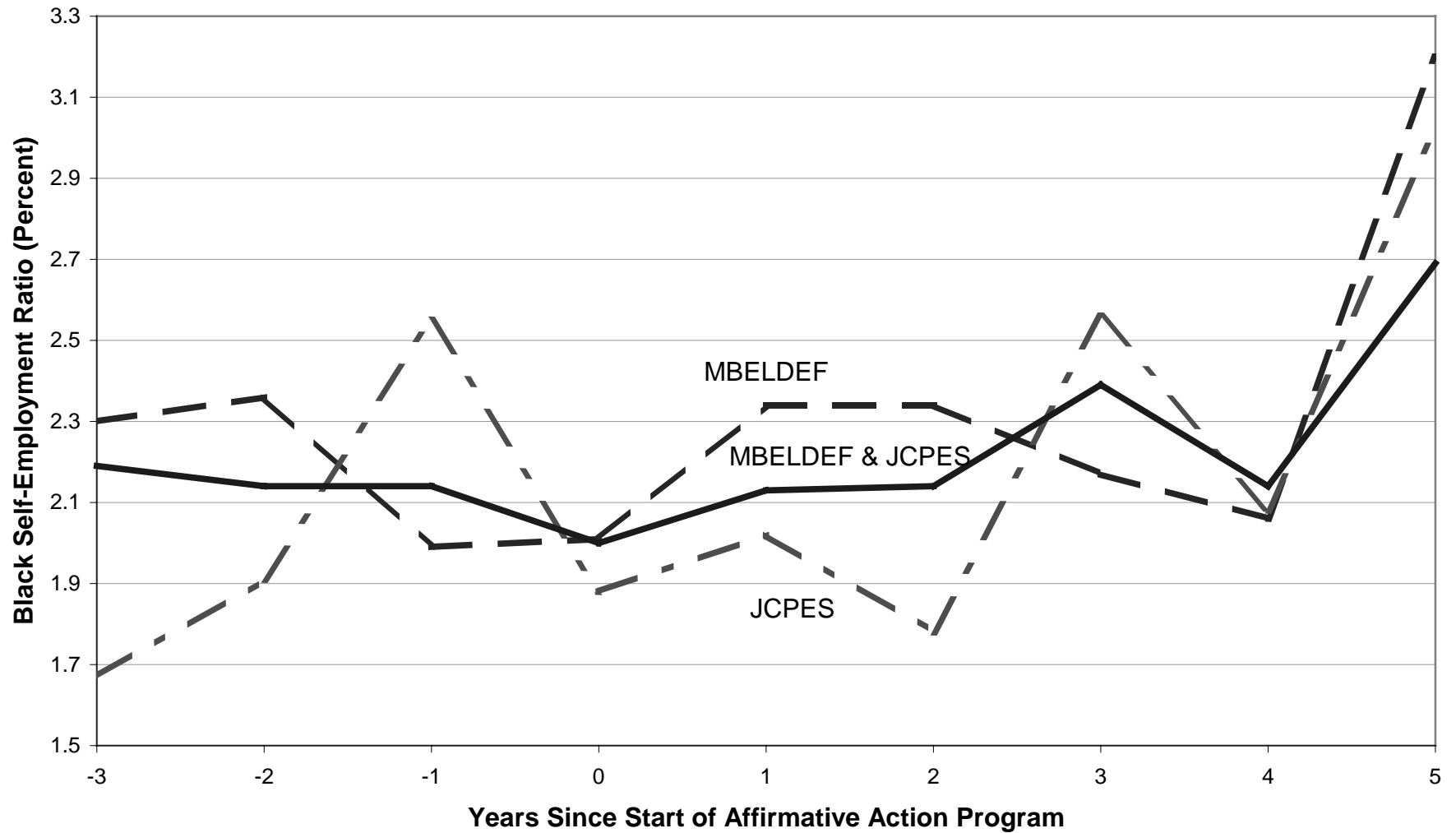
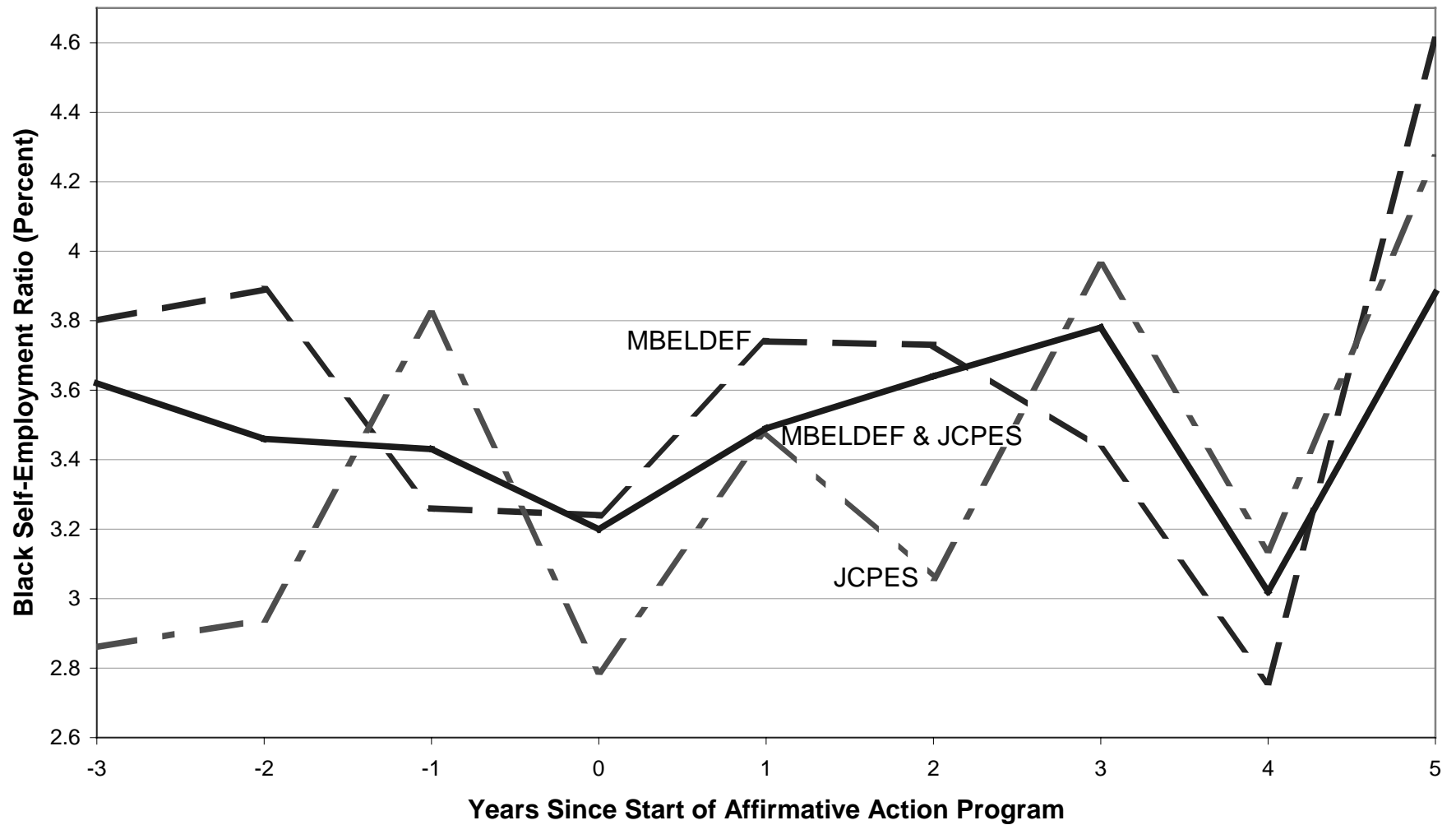
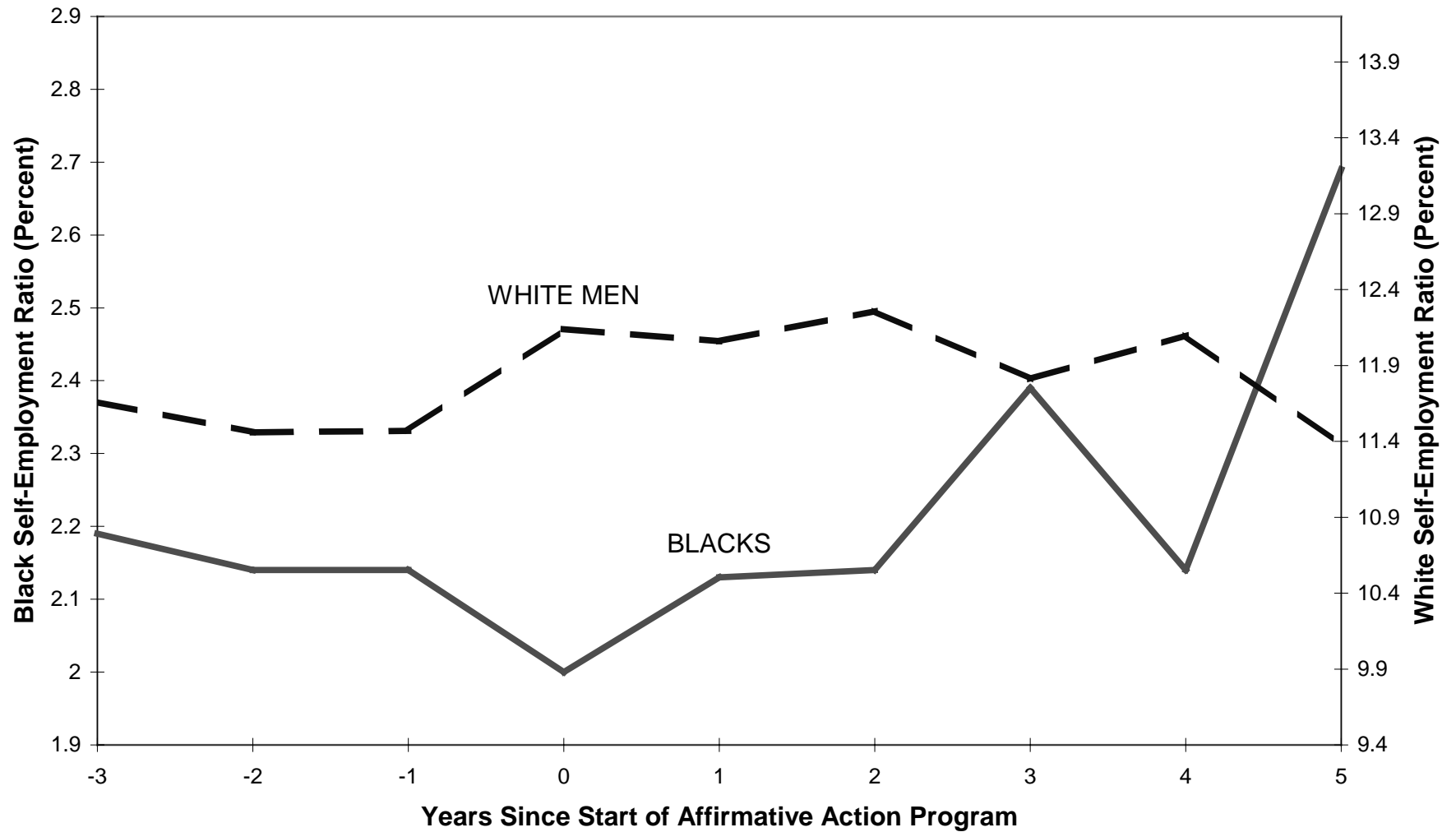


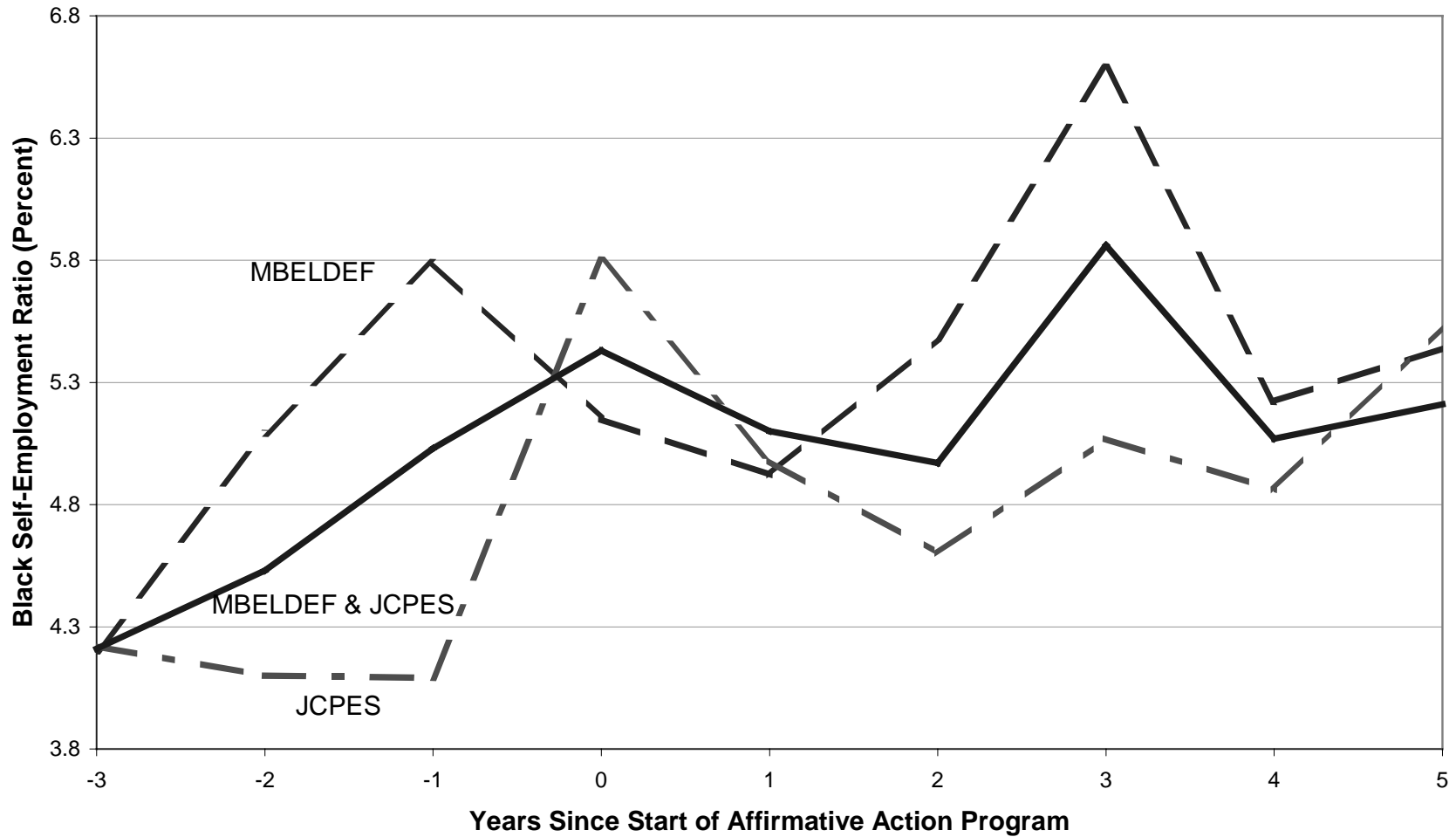
Figure 5B: Self-Employment Ratios by Timing of Affirmative Action Programs
Different Sources for Start Dates, Black Men, CPS-ADF Data



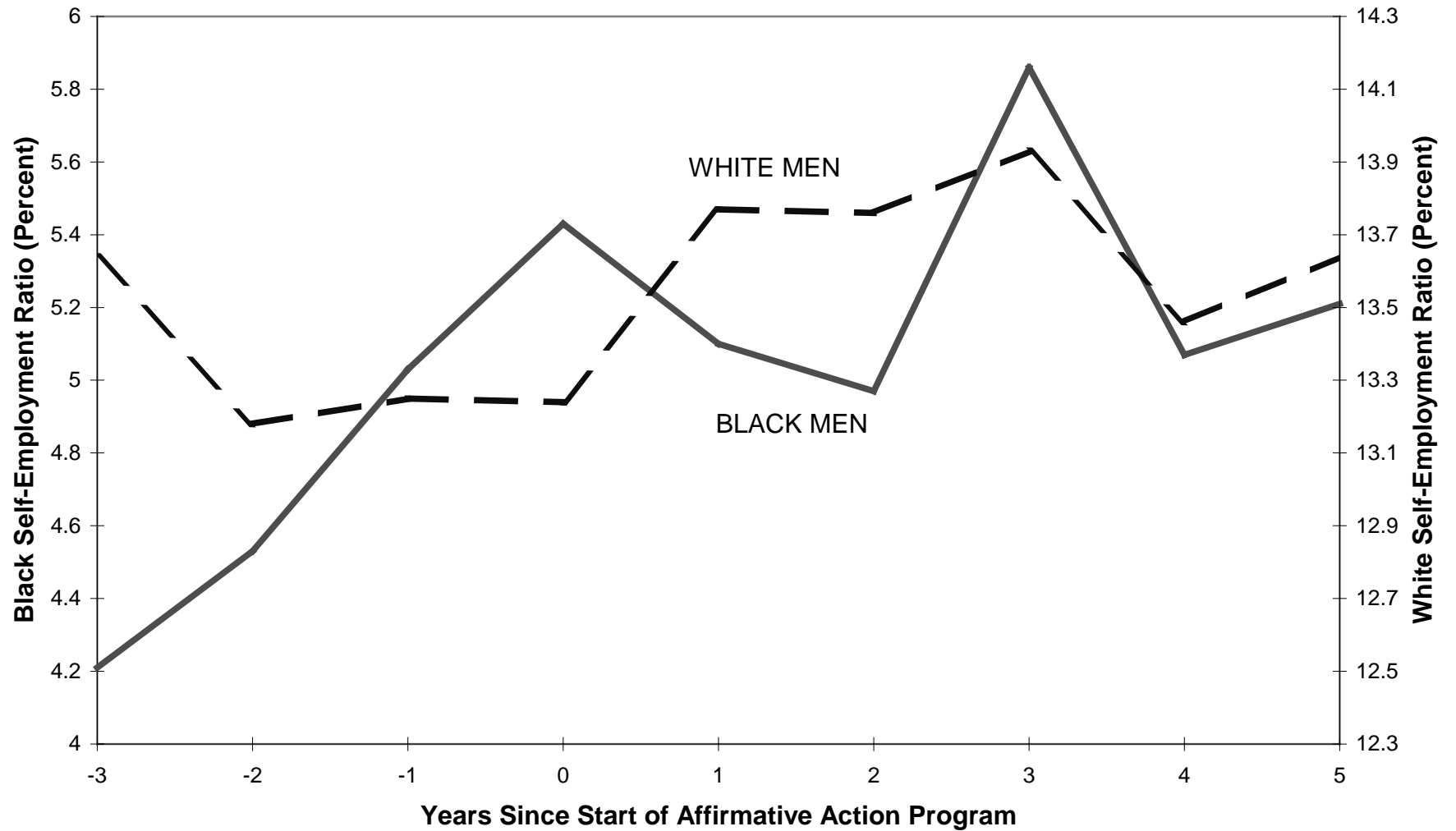
**Figure 5C: Self-Employment Ratios by Timing of Affirmative Action Programs
MBELDEF and JCPES Start Dates, CPS-ADF Data**



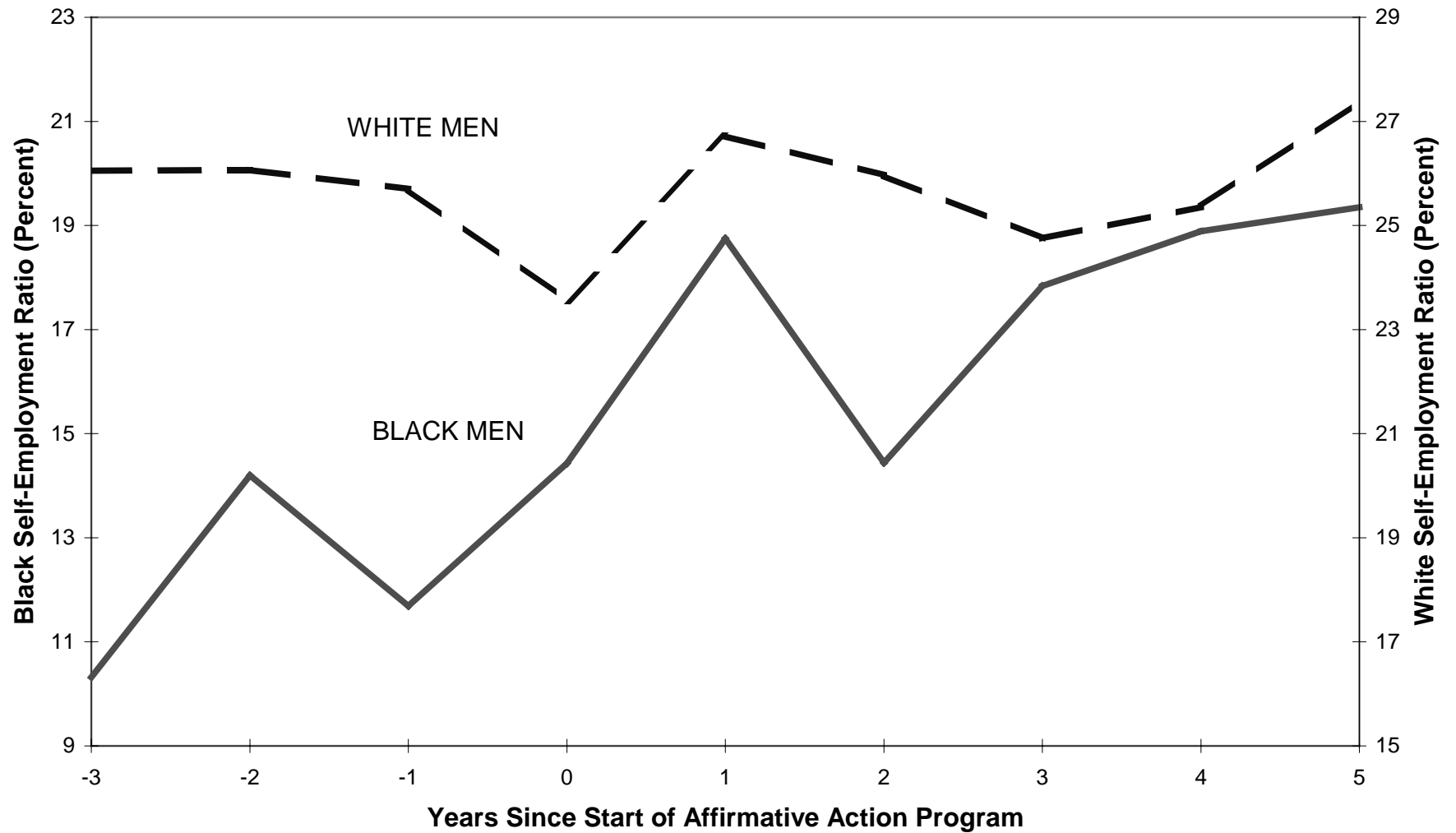
**Figure 6A: Self-Employment Ratio by Timing of Affirmative Action Programs
Different Sources for Start Dates, Black Men, CPS-ORG Data**



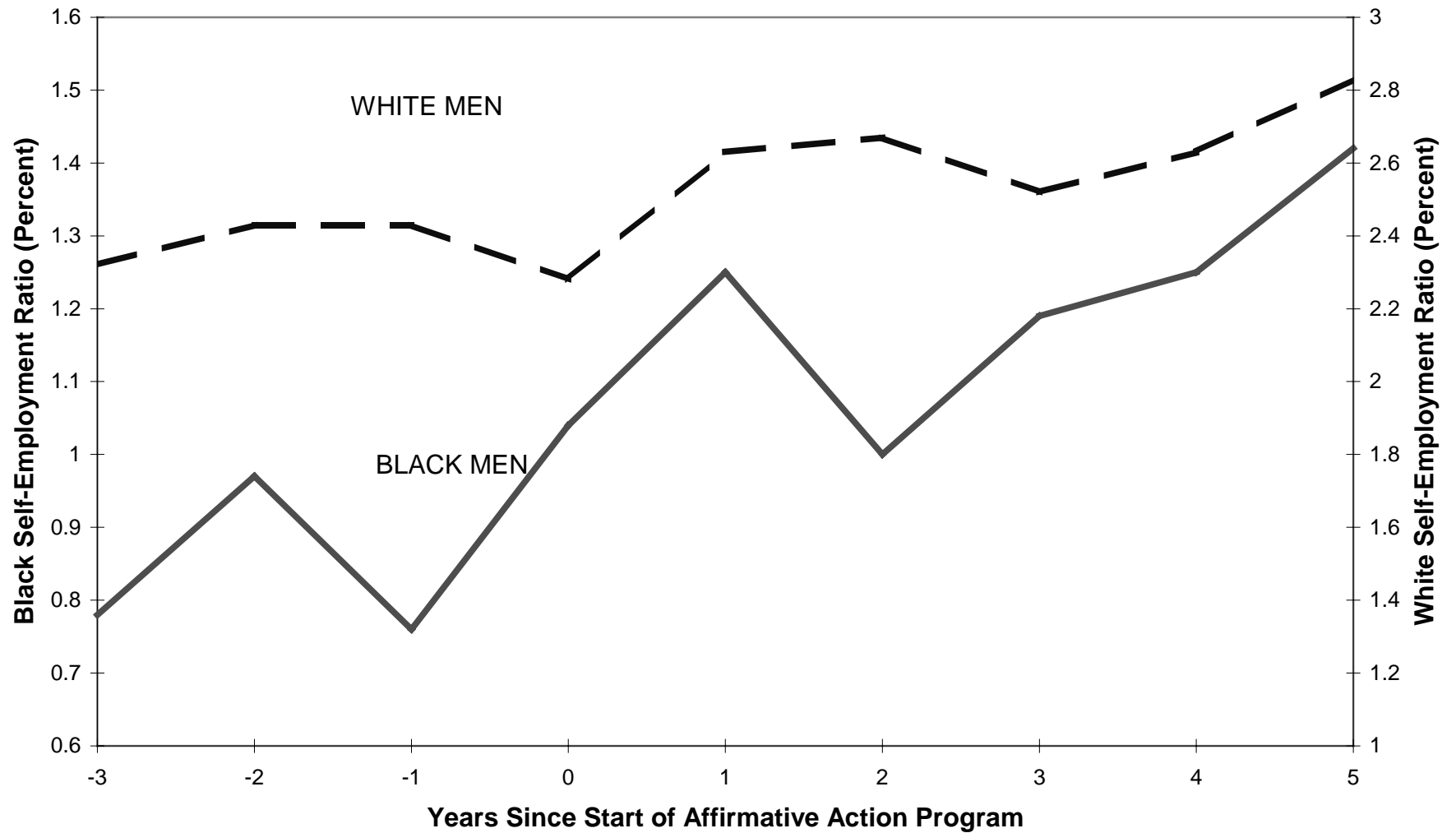
**Figure 6B: Self-Employment Ratios by Timing of Affirmative Action Programs
MBELDEF and JCPES Start Dates, CPS-ORG Data**



**Figure 7A: Self-Employment Ratios by Timing of Affirmative Action Programs
Construction Sector, CPS-ORG Data**



**Figure 7B: Self-Employment Ratios by Timing of Affirmative Action Programs
Construction Relative to Population, CPS-ORG Data**



**Figure 8A: Self-Employment Rate by Timing of Affirmative Action Programs
Adjusted for Year Effects, CPS-ORG Data, Construction**

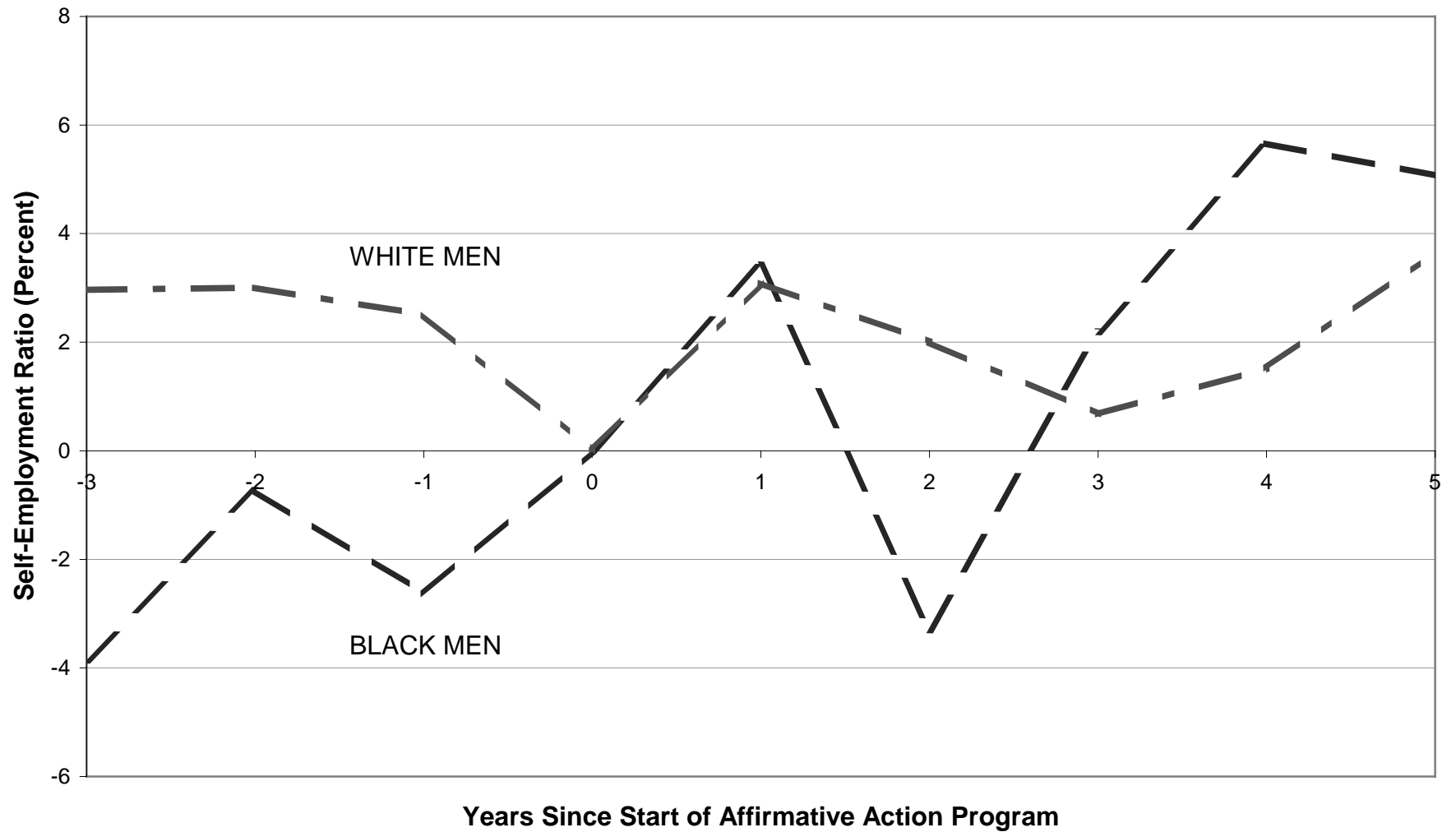


Figure 8B: Self-Employment Rate by Timing of Affirmative Action Programs Adjusted for Year Effects, CPS-ORG Data, Construction Relative to Population

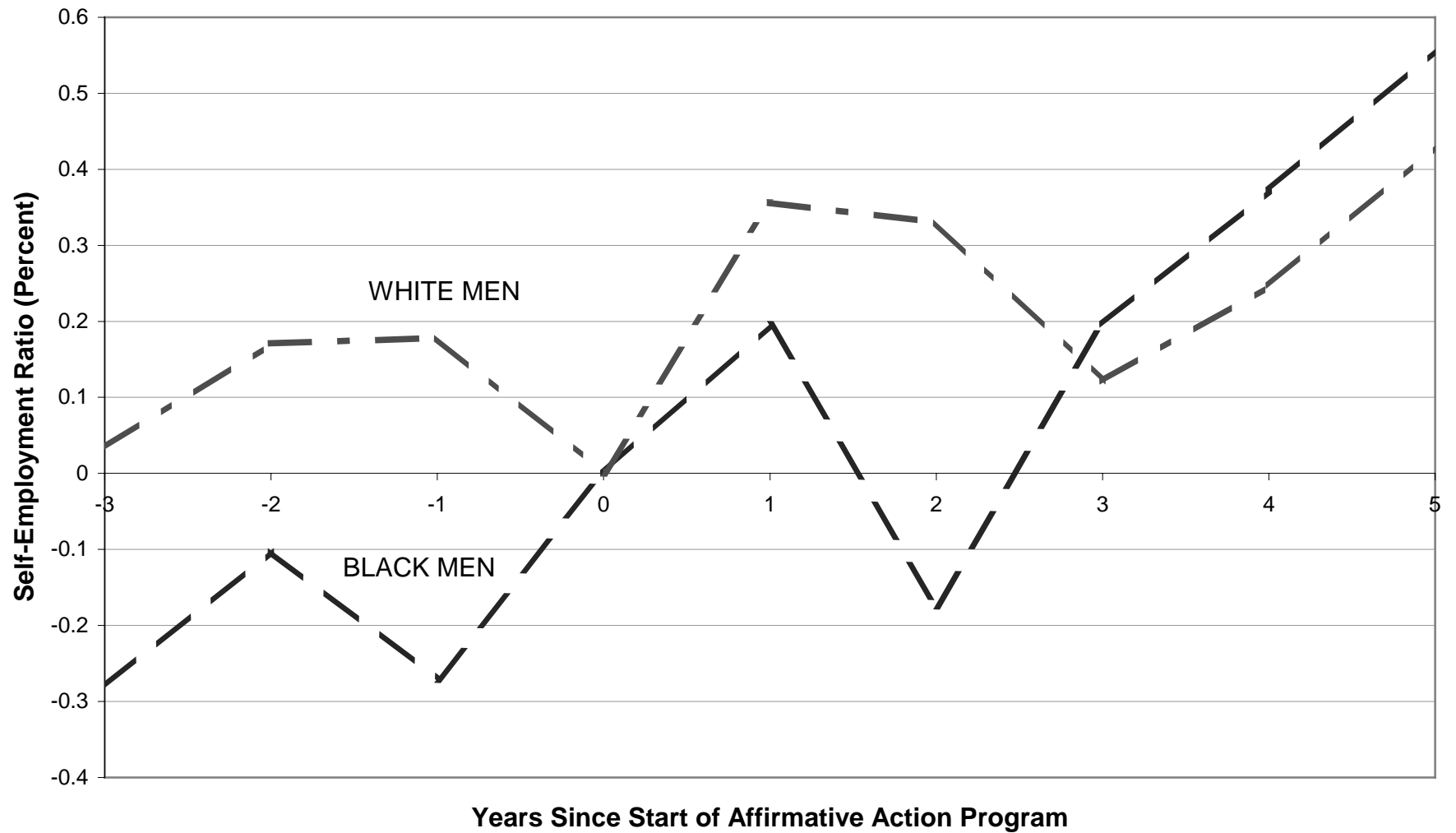


Figure 8C: Self-Employment Ratios by Year, Adjusted and Unadjusted for AA Timing, Construction Sector, CPS-ORG Data

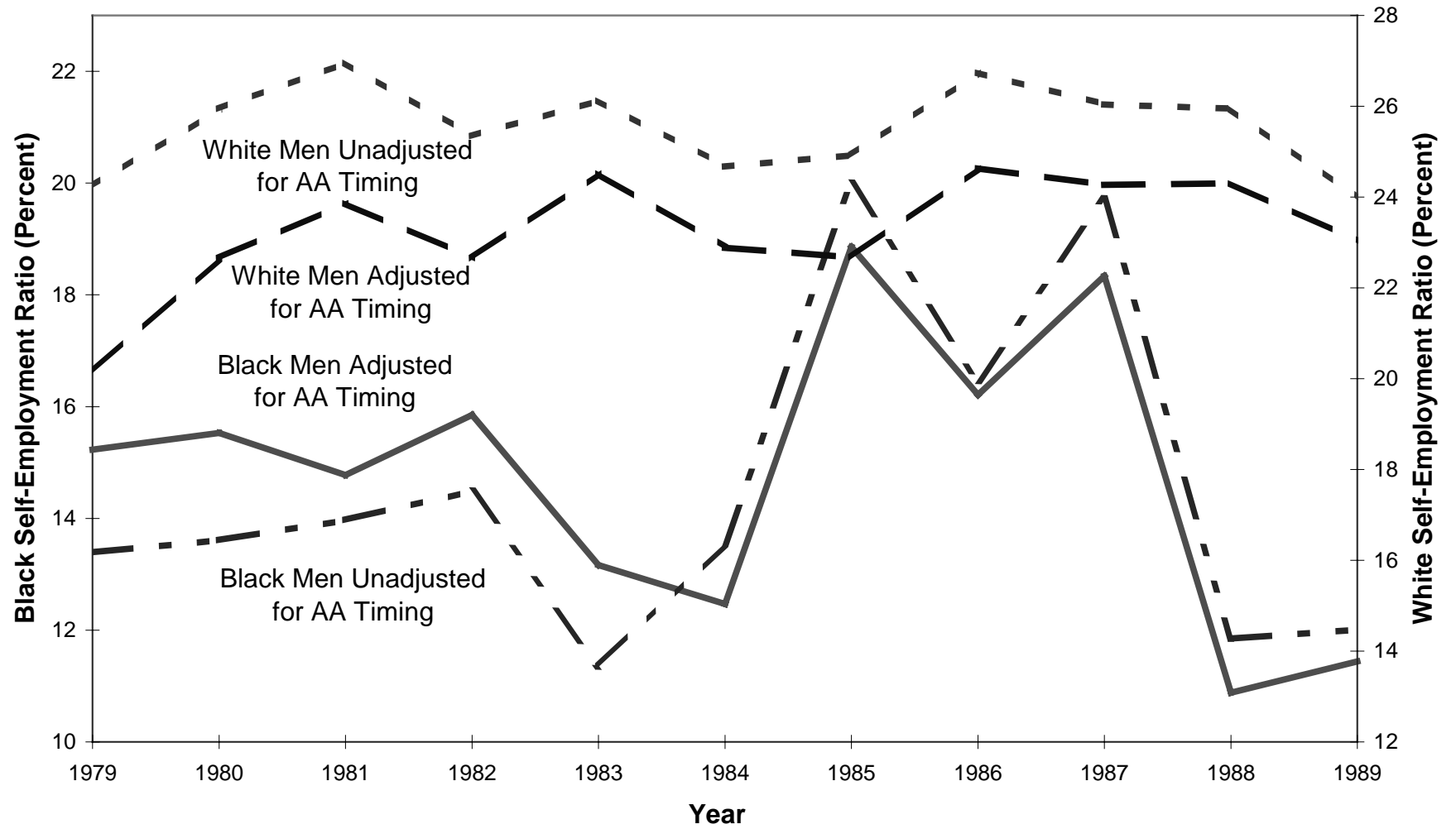


Table 1: Summary Statistics for Self-Employed, by Race and Gender
1979-1989 CPS-ORG Data

| | Black Men | White Men | Black Women | White Women |
|------------------------------------------------------|------------------|------------------|--------------------|--------------------|
| Fraction Self-Employed (%) | 4.61 | 14.8 | 1.76 | 5.83 |
| Fraction of SE Incorporated (%) | 13.2 | 27.0 | 7.5 | 16.2 |
| Fraction in MSA (%) | 52.8 | 37.9 | 53.2 | 37.7 |
| Fraction in MSA w/ Set-Aside Info. | 47.1 | 30.9 | 47.2 | 30.6 |
| Fraction Self-Employed in MSA w/ Set-Aside Info. | 4.89 | 13.5 | 1.82 | 5.36 |
| Unemployment Rate in MSA w/ Set-Aside Info. | 11.1 | 4.1 | 7.6 | 3.1 |
| Employment-Population Rate in MSA w/ Set-Aside Info. | 71.9 | 86.5 | 58.0 | 64.3 |
| Education of Self-Employed in MSA w/ Set-Aside Info. | 12.6 | 14.1 | 12.6 | 13.8 |
| Education of Others in MSA w/ Set-Aside Info. | 12.1 | 13.5 | 12.2 | 13.1 |
| Age of Self-Employed in MSA w/ Set-Aside Info. | 42.2 | 42.7 | 42.5 | 41.5 |
| Age of Others in MSA w/ Set-Aside Info. | 37.0 | 38.3 | 37.3 | 39.0 |
| Sample Size | 112,344 | 1,133,754 | 155,100 | 1,208,613 |

Notes: Statistics based on individuals aged 20-64 from the merged 1979-1989 CPS Outgoing Rotation Group Data. Hispanic whites are dropped from the analysis. MSAs are the 44 largest MSAs identified in the 1979-1985 CPS's. MSAs with set-asides are the 33 MSAs for which we have information on their set-aside programs. CPS sample weights are used in the calculations.

Table 2: Distribution of Self-Employment Across Industries, by Race and Gender,
1979-1989 CPS-ORG Data (in percent)

| | Black Men | White Men | Black Women | White Women |
|-------------------------------------------------|------------------|------------------|--------------------|--------------------|
| Construction | 21.8 | 18.5 | 1.1 | 2.8 |
| Wholesale Trade | 2.6 | 5.4 | 0.9 | 2.4 |
| Business Services | 6.5 | 4.7 | 8.1 | 7.3 |
| Repair Services | 9.3 | 5.8 | 4.7 | 3.4 |
| Transportation, Communication, And Utilities | 9.9 | 4.0 | 1.1 | 1.6 |
| Retail Trade | 11.9 | 14.4 | 15.4 | 23.2 |
| Finance, Insurance, and Real Estate | 3.4 | 6.1 | 2.9 | 6.0 |
| Personal Services | 5.0 | 2.6 | 29.4 | 15.0 |
| Professional Services | 7.8 | 12.0 | 14.0 | 13.2 |
| Entertainment and Household Services | 4.3 | 2.1 | 8.8 | 3.9 |
| Manufacturing | 3.6 | 5.8 | 0.6 | 3.9 |
| Public Administration | 0.0 | 0.0 | 0.0 | 0.0 |
| Mining, Forestry, and Fisheries | 0.4 | 1.0 | 0.0 | 0.3 |
| Agriculture | 8.2 | 14.3 | 1.0 | 6.2 |
| Other | 5.4 | 3.5 | 12.0 | 10.8 |
| Sample Size | 5,327 | 177,765 | 2,720 | 74,308 |

Notes: See notes to Table 1. Frequencies based on individuals who self-report being self-employed in the merged CPS Outgoing Rotation Group Data. CPS sample weights are used in the calculations.

Table 3: Minority Business Set-Aside Program Dates from Different Sources

| MSAFP Code | City | MBELDEF (1988) | | JCPES (1993) | | | MBELDEF & JCPES |
|---------------|------------------|----------------|---------|-----------------|----------------------|-----------------|--------------------|
| | | Percent Goal | Date | Percent Goal | Date of City Ord. | Date Enacted | Date |
| 0080 | Akron, OH | 5-15% | 1984 | | | | 1984 |
| 0160 | Albany, NY | 17.8% | 1984(?) | | | | 1984 |
| 0360 | Anheim, CA | 11.9% | 1985(?) | | | | 1985 |
| 0520 | Atlanta, GA | 20-25% | 1982 | ---- | 1970's | 1991 | 1982 |
| 0720 | Baltimore, MD | 15-25% | 1982 | ---- | 1987 | 1988 | 1982 |
| 1000 | Birmingham, AL | 10-15% | 1980 | | | | 1980 |
| 1120 | Boston, MA | 15-30% | 1987 | 5-15% | 1987 | 1987 | 1987 |
| 1280 | Buffalo, NY | 10% | ? | | | | . |
| 1600 | Chicago, IL | | | ---- | 1985 | 1985 | 1985 |
| 1640 | Cincinnati, OH | 5-15% | 1983 | ---- | 1978 | 1978 | 1983 |
| 1680 | Cleveland, OH | 15-30% | 1984 | 15-30% | 1982 | 1982 | 1984 |
| 1840 | Columbus, OH | 10% | 1983 | ---- | 1980 | 1981 | 1983 |
| 1920 | Dallas, TX | Good Faith | ? | 3-23% | 1993 | 1993 | 1984 |
| 2080 | Denver, CO | 20% | ? | ---- | 1983 | 1983 | 1983 |
| 2160 | Detroit, MI | City Ord. | ? | 6-14% | 1983 | 1983 | 1983 |
| 2800 | Fort Worth, TX | | | 15% | 1986 | 1986 | 1986 |
| 2960 | Gary, IN | City Ord. | ? | | | | . |
| 3120 | Greensboro, NC | 10% | ? | | | | . |
| 3360 | Houston, TX | 8-16% | ? | ---- | 1981 | 1981 | 1981 |
| 3480 | Indianapolis, IN | | | 10% | 1984 | 1984 | 1984 |
| 3760 | Kansas City, MO | 2-16% | ? | 10-16% | 1981 | 1981 | 1981 |
| 4480 | Los Angeles, CA | 16% | 1983 | No Goal | 1983 | 1983 | 1983 |
| 5000 | Miami, FL | 50% | 1985 | | | | 1985 |
| 5080 | Milwaukee, WI | 12.5% | 1987 | | 1989 | 1989 | 1987 |
| 5120 | Minneapolis, MN | 4-10% | ? | 20% | 1980 | 1980 | 1980 |

(continued)

Table 3 (continued)

| MSAFP Code | City | MBELDEF(1988) | | JCPES (1993) | | | MBELDEF & JCPES |
|---------------|-------------------|---------------|------|-----------------|----------------------|-----------------|--------------------|
| | | Percent Goal | Date | Percent Goal | Date of City Ord. | Date Enacted | Date |
| 5380 | Nassau, NY | | | | | | . |
| 5560 | New Orleans, LA | | | 25% | 1984 | 1984 | 1984 |
| 5600 | New York, NY | 10% | ? | 20% | 1991 | 1992 | 1992 |
| 5640 | Newark, NJ | 25% | 1984 | | | | 1984 |
| 5720 | Norfolk, VA | City Ord. | ? | | | | . |
| 6040 | Passaic, NJ | | | | | | . |
| 6160 | Philadelphia, MA | 15% | 1984 | 10% | 1982 | 1983 | 1983 |
| 6280 | Pittsburgh, PA | | | | | | . |
| 6440 | Portland, OR | | | | | | . |
| 6840 | Rochester, NY | 5-15% | ? | | | | . |
| 6920 | Sacramento, CA | 20% | 1985 | | | | 1985 |
| 7040 | St. Louis, MO | 10% | ? | | | | . |
| 7280 | San Bernadino, CA | | | | | | . |
| 7320 | San Diego, CA | | | 10-20% | 1986 | 1986 | 1986 |
| 7360 | San Francisco, CA | 30% | 1984 | ---- | 1984 | 1984 | 1984 |
| 7400 | San Jose, CA | Resolution | 1983 | 26% | 1983 | 1983 | 1983 |
| 7600 | Seattle, WA | 15-20.5% | 1986 | 20.50% | 1980 | 1980 | 1986 |
| 8280 | Tampa, FL | Exec. Ord. | 1985 | | | | 1985 |
| 8840 | Washington, DC | 35% | 1980 | 50% | 1975 | 1975 | 1980 |

Notes: The two sources of data on set-aside programs are the 1988 *Report on the Minority Business Enterprise Programs of State and Local Governments* by the Minority Business Enterprise Legal Defense and Education Fund (MBELDEF) and the 1994 report to the U.S. Department of Commerce Minority Business Development Agency titled, *Assessment of Minority Business Development Programs*, by the Joint Center for Political and Economic Studies (JCPES). The MBELDEF program date for Atlanta is taken from Boston (1998).

Table 4: Regression Estimates of Self-Employment Rate Changes Relative to Timing of Set-Aside Programs, 1979-1989 CPS-ORG Data
(estimated standard errors in parentheses)

| | Black Men | | | White Men | | |
|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | (1) | (2) | (3) | (1) | (2) | (3) |
| In Percent (1/100) | | | | | | |
| 3 years before | -1.01 (0.53) | -0.92 (0.53) | -1.36 (1.45) | 1.17 (0.34) | 1.25 (0.33) | -1.28 (0.98) |
| 2 years before | -0.76 (0.54) | -0.71 (0.53) | -0.98 (1.02) | 0.62 (0.34) | 0.70 (0.33) | -0.53 (0.69) |
| 1 year before | -0.30 (0.50) | -0.32 (0.50) | -0.44 (0.66) | 0.40 (0.32) | 0.44 (0.31) | -0.04 (0.43) |
| Year of Set-Aside | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1 year after | -0.47 (0.51) | -0.46 (0.51) | -0.41 (0.68) | 0.30 (0.33) | 0.25 (0.32) | 0.57 (0.45) |
| 2 years after | -0.72 (0.53) | -0.66 (0.52) | -0.46 (1.02) | -0.04 (0.34) | -0.05 (0.33) | 0.82 (0.69) |
| 3 years after | 0.10 (0.54) | 0.11 (0.53) | 0.39 (1.44) | -0.09 (0.34) | -0.10 (0.34) | 1.02 (0.97) |
| 4 years after | -0.86 (0.55) | -0.84 (0.55) | -0.36 (1.84) | -0.84 (0.36) | -0.86 (0.36) | 0.90 (1.26) |
| 5 years after | -0.78 (0.59) | -0.64 (0.59) | -0.06 (2.22) | -0.99 (0.40) | -1.02 (0.39) | 1.21 (1.54) |
| Year Effects | Y | Y | Y | Y | Y | Y |
| Education and Age | N | Y | Y | N | Y | Y |
| City Effects | N | N | Y | N | N | Y |
| R-squared | 0.05 | 0.06 | 0.07 | 0.14 | 0.16 | 0.17 |

Notes: The sample sizes for the regressions are 51,335 for black men and 284,102 for white men. The entries are the estimated self-employment rate differentials between the given year and the year that the set-aside program was reportedly implemented. Only men in cities/MSAs for which we have information on their set-aside program are used in the analysis. The controls for education and age include linear terms for education and age, age-squared, and the interaction of education and age. The regressions are weighted by the CPS sample weights.

Table 5: Regression Estimates of Self-Employment Rate Changes Relative to Timing of Set-Aside Programs, Construction Sector
(estimated standard errors in parentheses)

| | Black Men | | | White Men | | |
|---------------------------|-----------------|-----------------|-----------------|----------------|----------------|-----------------|
| | (1) | (2) | (3) | (1) | (2) | (3) |
| In Percent (1/100) | | | | | | |
| 3 years before | -3.86 (3.15) | -3.27 (3.09) | -0.13 (8.64) | 2.96 (1.41) | 2.74 (1.38) | 4.85 (3.90) |
| 2 years before | -0.73 (3.27) | -0.62 (3.20) | 1.62 (6.10) | 3.00 (1.40) | 2.71 (1.37) | 4.18 (2.74) |
| 1 year before | -2.64 (3.12) | -1.75 (3.06) | -0.44 (4.01) | 2.51 (1.33) | 2.36 (1.30) | 3.23 (1.76) |
| Year of Set-Aside | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1 year after | 3.43 (3.16) | 3.61 (3.10) | 1.87 (4.08) | 3.09 (1.35) | 3.03 (1.33) | 2.21 (1.80) |
| 2 years after | -3.29 (3.20) | -2.39 (3.14) | -4.33 (6.07) | 2.00 (1.38) | 2.23 (1.35) | 1.19 (2.73) |
| 3 years after | 2.19 (3.25) | 2.62 (3.19) | 0.03 (8.50) | 0.67 (1.41) | 0.48 (1.38) | -1.58 (3.87) |
| 4 years after | 5.66 (3.36) | 6.25 (3.30) | 2.84 (11.03) | 1.52 (1.48) | 1.77 (1.45) | -1.44 (4.98) |
| 5 years after | 5.07 (3.49) | 5.47 (3.41) | 0.50 (13.09) | 3.67 (1.63) | 3.48 (1.59) | -1.34 (6.05) |
| Year Effects | Y | Y | Y | Y | Y | Y |
| Education and Age | N | Y | Y | N | Y | Y |
| City Effects | N | N | Y | N | N | Y |
| R-squared | 0.16 | 0.19 | 0.20 | 0.26 | 0.29 | 0.30 |

Notes: See notes to Table 4. The sample sizes for the regressions are 3,615 for black men and 26,497 for white men. The analysis is based only on men who report being in the construction industry.