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The Outlook of Black, Educated Women in the Political Economy of President Donald J. Trump

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Abstract

Schreft and Smith (1998) develop the theoretical banking model whose double steady state equilibria are indicative of: (1) high capital stock with low return as well as (2) low capital stock with high return. This paper conjectures and explains the modifications necessary for the Schreft and Smith model to describe the political economy associated with high fiscal investment in "cognitive" human development capital and low return (in the form of jobs that are not created) as well as low investment in "routine" human development capital and high return (in the form of jobs that are created). This distinction is important, as it is likely the double steady state currently encouraged in both the United States and the United Kingdom resulting from electing President Donald J. Trump and BREXIT to enhance job prospects for the rural working class. The outlook resulting from this double steady state equilibria, however, is that highly cognitive human capital stock, such as has been identified to exist primarily in black women as the most educated group in the United States, may be hindered due to lack of diversification in job creation policies.

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I. Introduction

Pursuance of post-secondary education has closed the wealth gap for African Americans (Hamilton and Darity, 2010), but does Donald Trump's early efforts as president impede these efforts, especially for black, educated women? Specifically, how are black women impacted by advocacy for new job prospects not primarily occupied by black women? That is, job prospects in manufacturing and the armed forces can inadvertently disenfranchise black women. This work is motivated by the implementation of legislation in Trumps' first 100 days including but not limited to: Presidential Executive Order Addressing Trade Agreement Violations and Abuses to strengthen and retain jobs for domestic manufactures; Presidential Executive Order on Establishment of Office of Trade and Manufacturing Policy to defend and serve domestic manufacturers; Presidential Executive Order on Buy American and Hire American to create good jobs at decent wages, strengthen the middle class, and support the American manufacturing and defense industrial bases; Presidential Memorandum Regarding the Hiring Freeze to reduce the size of the Federal Government's workforce through attrition; Presidential Memorandum Regarding Construction of American Pipelines to insure that all manufacturing processes for necessary iron or steel products, from the initial melting stage through the application of coatings, occur in the United States; Presidential Memoranda Regarding Construction of the Keystone XL and Dakota Access Pipelines; Presidential Memorandum Streamlining Permitting and Reducing Regulatory Burdens for Domestic Manufacturing to construct or expand manufacturing facilities through reductions in regulatory burdens affecting domestic manufacturing; Presidential Memorandum on Rebuilding the U.S. Armed Forces.[1]

[1] These legislations can be found at www.whitehouse.gov

This work hypothesizes that if black women have the highest incidence of post-secondary education relative to men within their race (see Musu-Gillette et al., 2016) then this relatively more educated group may not benefit from job expansion polices that are not generally commensurate with their skill type. To test this hypothesis this paper replicates and modifies the Schreft and Smith (1998) model, and draws conclusions based on a scenario assuming increasing inflation expectations.

II. Environment

Here is an infinite-sequenced, two-period-lived, overlapping generations model with an initial old generation. For each date two locations are symmetric with a continuum of ex ante identical young agents having unit mass. Let $f(h_t) \equiv F(h, 1)$, exhibiting constant returns scale. Note $h_t = \frac{H_t}{L_t}$, where $H_t \; and \; L_t$ are human development capital and labor inputs, respectively, and t = 0, 1… index time. Each young agent possesses a type of human development capital that can be supported (or not supported) by government to procure a cognitive or routine job. (For a description of cognitive and routine jobs see: Acemoglu & Autor, 2011; Autor & Dorn, 2013; Beaudry & Lewis, 2014; Black & Spitz-Oener, 2010.) Over the agent's lifetime one type of job will be preferred as specific skillset is supported. Assume $f(h_t)$ can either be consumed or used to invest in more h. Specifically, *Probability*$(f_t = \; h_{t+1}) = 1$. Thus, human capital is not transferrable, but is created from forgone consumption.

Next, each agent has the innate and inelastic ability to engage human capital in cognitive tasks or routine tasks at time t. As a young agent, there is some positive and unknown endowment of human capital that can be developed for personal productivity. In the second period, when the young agent becomes old, they will need to retire and live based on the combination of: individual earnings set aside in anticipation of consumption, returns (in the form

of hours worked) from individual human capital investment, or returns (also in the form of hours worked) from allocated education subsidies. To procure consumption (c) the agent optimizes lifetime utility based on $u = \frac{c^{1-\rho}}{1-\rho}$ with $\rho > 1$. Human capital evolves with per capita investment (i) to produce a final product from one's human capital at time t so that $h_{t+1} = i_t$.

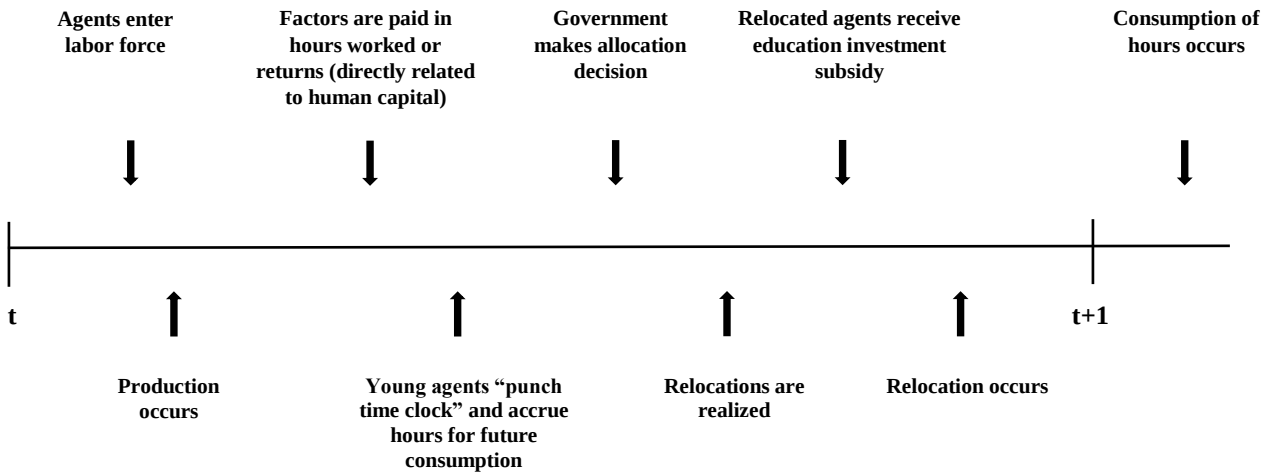
Also, there is a return from the per capita allocation from the budget surplus (B_t) at time t. Over one period the government will decide the size of a per capita investment in an education subsidy (S_t) at time t. Its nominal return (I_t) at time t will not lose value or become penalized and is 100% redeemable in t+1. The real budget surplus ($b_t \equiv B_t/p_t$), real subsidy ($s_t \equiv S_t/p_t$), and the real return on education investment ($R_t \equiv I_t p_+/p_{t+1}$) are deflated by the price level at time t and the expected price level at time t+1, respectively.

Alas, the final agent in the model is the government or the fiscal authority. It is assumed this authority acts independently of the monetary authority. This government need only enact investment legislation in support of education subsidies to impact aggregate demand, output, and the level of inflation. The government's budgetary plan requires recovered returns to education investment last period produce public savings and subsidies this period as follows:

$$R_{t-1}s_{t-1} \equiv \frac{B_t - B_{t-1}}{p_t} + s_t, \qquad t \geqq 0 \quad (1)$$

Once agents relocate, all eligible interaction and transaction between the two locations is assumed ineligible. Self-investment in human capital and consumption goods are not transferrable. Only fiscal authorities can improve expected lifetime utility. The random relocations play a similar role as with Diamond and Dybvig (1983), except this model examines random allocations of income streams to hedge against cyclical unemployment rather than random allocations of liquidity to hedge against bank runs.

The timing of events are as follows.



Note that, initially $B_{-1} > 0$, and $S_{-1} = 0$. When fiscal policy is conducted, a once and for all, exogenously chosen ratio of education investment subsidy relative to public saving is:

$$s_t/b_t \equiv \beta, \quad t \geqq 0. \quad (2)$$

Also note that, $1 > \pi(1 + \beta)$. Specifically, the proportion of allocated education investment subsidies for all young agents (π) multiplied by growth of the subsidizing rate per tax dollar ($1 + \beta$) cannot exceed unity. That is, the rate of subsidizing is bounded.

III. Trading Factors and Costs

There are two factor markets: one with human development capital and one with labor. Job prospects in each market are competitive so that each type of input is paid its marginal product; however, when legislators invest in education subsidies they receive a return on cognitive human development capital in the output market reflecting the opportunity cost of routine human capital investment. Characterizations of marginal products include:

$$w_t = w(h_t) \equiv f(h_t) - h_t f(h_t), \qquad t \geqq 0, \qquad (3)$$

$$r_t = f'(h_t), \qquad t \geqq 0. \qquad (4)$$

where $w_t > 0$ and r_t are the real wage and real return on investment, respectively.

IV. Government

The government extracts taxes, holds extracted funds and announces subsidy reward schedules contingent on relocation status (or subsidy allocation date). The government is benevolent and in equilibrium seeks a balanced budget.

Let τ_{mt} (τ_{nt}) denote the real value of subsidies paid to agents who are relocated (not relocated) at time t. The economy shall operate in autarky and all income, w_t, will be extracted for reallocation toward the education investment subsidy. The government, however, is constrained so that subsidies and investment do not exceed the revenue-surplus differential. Specifically,

$$s_t + i_t \leq w_t - b_t, \qquad t \geqq 0. \qquad (5)$$

In addition, the government promises to deliver τ_{mt} to the fraction, π, of relocated agents at time t. The current situation, however, can be characterized as follows:

$$\pi\tau_{mt} \leq \frac{s_t}{w_t}(p_t/p_{t+1}), \qquad t \geqq 0. \quad (6)$$

The real government subsidy per hour worked is weighted by (p_t/p_{t+1}) since expectations about t+1 will impact individual purchasing power. The fractions of agents that are not relocated, however, will receive an off-budget (unplanned) allocation from returns associated with the government's investment in human development capital as well as individual returns from personal investment in human development capital. For "non-movers", this can be characterized as:

$$(1-\pi)\tau_{nt} \leq R_t\frac{s_t}{w_t} + r_{t+1}\frac{i_t}{w_t}, \qquad t \geqq 0. \ (7)$$

Now for convenience, let $\gamma \equiv s_t/w_t$ denote the government's ratio of subsidy per hours worked and $\mu \equiv i_t/w_t$ denote human development capital investment per hours worked. Then, equations (6) and (7) can be respectively written as:

$$\tau_{mt} \leq \gamma_t(p_t/p_{t+1})/\pi, \qquad t \geqq 0, \qquad (6')$$

$$\tau_{nt} \leq [r_{t+1}\mu_t + R_t(1-\gamma_t-\mu_t)]/(1-\pi), \qquad t \geqq 0. \qquad (7')$$

It must hold that $\gamma_t \geqq 0$ and $\mu_t \geqq 0$, but it is not necessary that $\gamma_t + \mu_t \leqq 1$ since the government can supplement funds by borrowing from monetary authorities.

Then the appropriate Nash equilibrium problem is:

$$\max_{\tau_{mt},\tau_{nm},\gamma_t,\mu_t} \{\pi(\tau_{mt}w_t)^{1-\rho} + (1-\pi)(\tau_{nt}w_t)^{1-\rho}\}/(1-\rho)$$

$$Subject\ to\text{:}\ \gamma_t \geqq 0 \text{ and } \mu_t \geqq 0.$$

With this optimization problem, the no arbitrage condition is satisfied so that:

$$R_t = r_{t+1}, \qquad t \geqq 0. \qquad (8)$$

Agents are indifferent between government educations subsidy returns and individual human development capital investment returns. When the no arbitrage condition is satisfied equilibrium subsidy dollars per hours worked is:

$$\gamma_t = \{1 + [(1-\pi)/\pi]I_t^{(1-\rho)/\rho}\}^{-1} \equiv \gamma(I_t), \quad (9)$$

With $\rho > 1$, $\gamma(I) \in [\pi, 1]\ \forall I \geqq 1$ and $\gamma(1) = \pi$. Thus, it is straightforward to show that:

$$I\gamma'(I)/\gamma(I) = [(\rho-1)/\rho][1-\gamma(I)] > 0. \qquad (10)$$

That is, the marginal revenue product per subsidy allocation is increasing in I_t. Specifically, when $\rho > 1$, increases in I_t induce the government to invest more in education, thus strengthening an automatic stabilizer, like an education investment subsidy, which can act as insurance against job loss at every income-inflation rate level.

V. Equilibrium

In equilibrium, factors are paid their marginal product, subsidy per hour worked is defined to be a function of I_t (i.e. $\gamma(I_t)$), and $h_{t+1} = i_t$ must hold so that:

$$R_t = f'(h_{t+1});\ \ t \geqq 0 \quad (11)$$

$$m_t = \gamma(I_t)w(h_t) = s_t(I_t);\ \ \ t \geqq 0 \quad (12)$$

$$h_{t+1} = [w(h_t) - b_t - m_t].\ t \geqq 0 \quad (13)$$

Note that equation (13) is derived from equation (5) and that equations (1), (11), (12) and (13) constitute the model's equilibrium conditions. Also, m_t is the real subsidy expressed as a function of the nominal interest rate (I_t).

VI. Steady State

The only steady state equilibrium examined in this context combines equations (2) and (12) and substitutes it into equation (13) to obtain the law of motion for human development capital stock as follows:

$$h_{t+1} = w(h_t)[1 - (1 + \beta)\gamma(I_t)]. \quad (14)$$

VII. Increasing Inflation Expectations Proposition

Now consider a market following inflation expectations ($p_t/p_{t+1} \equiv \Phi$) as resulting from expansionary fiscal policy, with $\Phi < 1$. Allowing flexibility of the subsidy per hour worked (γ) provides the equilibrium condition in equations (12) and (14). The following two equations are also equilibrium conditions:

$$f'(h_{t+1})/I_t = p_t/p_{t+1} \equiv \Phi, \quad (15)$$

$$m_{t+1}(1 + \beta_{t+1}) = \Phi m_t(1 + \beta_t I_t). \quad (16)$$

In steady state equations (12) and (16) become:

$$h/w(h) = \ 1 - (1 + \beta)\gamma(I)\ and \quad (17)$$

$$\beta = \frac{\Phi - 1}{1 - \Phi I}, \quad (18)$$

respectively.

Then, assuming the marginal rate of substitution adjusted for inflation expectations favors human development capital (i.e. For $f(h) = Ah^{\alpha}$, $\alpha/\Phi(1-\alpha) > 1$.), the nominal interest rate is larger than unity (i.e. $I > 1$.) alongside increasing inflation expectations (i.e. $\Phi < 1$) two steady state equilibria occur. From (17), the higher the nominal return lower the steady state human development capital stock. In equation (18), however, the higher the nominal return the lower the steady state subsidy-budget surplus ratio. Hence, two steady states ensue: high human capital development investment and low return or low human capital development investment and high return. This finding makes sense when investments follow political interest and are not diversified to follow the interest of the entire labor force. Specifically, when fiscal authorities subsidize cognitive skills with the expectation of receiving a labor market return, but fail to create jobs requiring cognitive skill this double steady state can occur.

VIII. Conclusion

This study shows when government invests in cognitive human development capital but does not support it, two equilibria arise. There is one equilibrium in which low investment in human development capital can have high return: as with the rural and manufacturing workers generally supported by President Trumps efforts to improve job prospects. There is another in which high investment in human development capital can have low returns: as with those over-qualified to work in rural and manufacturing industries. Black women, for instance, who are the most educated group within their race, receive a low return on human development capital investment as job prospects created by President Trump do not generally serve this group. Note the vote for

BREXIT encouraging similar policies can create similar outcomes in the United Kingdom. Still, further explorations should be done to consider a fuller model with data.

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