# The Rise of Human Capitalists

**(Preliminary and Incomplete)**

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**Abstract**

Human capitalists are firm employees whose income is equity-based i.e., for example, based on equity share grants or stock-options, and as such share into the firms capital gains much like non-employee capitalists. In this paper, we use theory and data to quantify their macroeconomic importance. Using two measures of non-wage income as a share of output – hand-collected information on the number of shares reserved for employee stock option compensation (RS) or based on either selling, general, and administrative expenses (SGA) – we show that since the 1960s human capitalists have become an increasingly important class of income earners in the US. A parsimonious model of "technological complementary" between physical capital and human capitalists can replicate this fact as a response to investment-specific technological change. Cross-industry evidence further corroborates the key prediction of the model that there should be a negative relation between the human capitalists share and investment good prices. We plan to use the model to get quantitative estimates of the degree of complementarity between physical and human capital. The estimated version of the structural model will also allow us to explore the quantitative implications of the complementarity mechanism.

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# 1 Introduction

The secular decline of labor is a central theme of the debate on inequality both in the popular press and among academics and policy makers. The labor share in the US has declined especially in the corporate sector since the early 1980s (e.g., Neiman and Karabarbounis (2014)). At the same time, wage growth has been anemic relative to that of corporate profits. Taken together, these facts point to a secular shift of income away from labor and toward capital. Yet, they also raise a national income accounting puzzle, because the physical capital share has not kept pace with profits in the corporate sector (Krugman (2015), Rognlie (2015)). If not labor or physical capital, who has increasingly appropriated the rents from production?

In this paper, we propose that there are a third type of income earners, which we dub "human capitalists", and use theory and data to quantify their importance. Human capitalists are firm employees whose income is equity-based i.e., for example, based on equity share grants or stock-options, and as such share into the firms capital gains much like non-employee capitalists. Combining several sources of data, we compile the stylized facts of the evolution of human capitalists income in the US over the last decades. We show that human capitalists have become an increasingly important class of income earners. Using reduced-form empirics and quantitative analysis from a structural model, we set forth a unified technology-based explanation of the rise of human capitalists income amid a declining labor share and a steady physical capital share.

We start by characterizing the stylized facts of the secular evolution of human capitalists income share. The main measurement challenge is to gather information on non-wage income. We use information from the SEC filings of the universe of publicly-traded US corporations to construct proxies for non-wage income as a share of output: the first is based on the number of shares reserved for employee stock option compensation (RS), which we hand-collected by piecing together Compustat Fundamental Annual (1984-1996), RiskMetrics (IRRC) (1996-2006) and hand-collected data from 10-Ks (2009-2015), and we use a second proxy based on selling, general, and administrative expenses (SGA). Both measures indicate that the human capitalists share of income has risen steadily over the last decades. We also confirm that the physical capital share has been flat in the U.S. since the 1960s while the labor share has declined. Interestingly, human capitalists not share into a significant portion on firms capital gains as the ratio of the value of reserved share to the market value of the firm has about tripled since the 1980s, and was around 12% by the end of 2015 (See Figure 1).

As a first step toward understanding these facts, we started to outline a parsimonious model of "technological complementary" between physical capital and human capitalists. The model features a CES production function where physical capital and human capital are complements, while (raw) labor is a substitute of the two capital inputs. In addition, we model technological progress via a standard shock to (physical) investment good prices (Greenwood et al. (1997), Papanikolaou (2011), Kogan and Papanikolaou (2014)). In response to a reduction in investment good prices, the model is able to replicate the stylized facts. The mechanism at the core of the model is testable. Across industries, the model predicts that there should be a negative relation between the human capitalists share and investment good prices, as it is optimal for firms to employ more human capitalists as physical capital gets cheaper.

To explore the relation between investment good prices and the human capitalists share, we constructed a core industry-level dataset for capital and labor shares for the 1950 to 2009 period (manufacturing only) by merging the reserved shares for employee stock-based compensation (RS) and the SG&A aggregated at the industry level, as well as consumption good prices from St Louis FRED, into the NBER-CES dataset. Our data confirms across-industries the cross-country fact of Neiman and Karabarbounis (2014) that there is a negative relation between the labor share and investment good prices. In addition, we find reliable evidence supporting the complementarity story: there is a negative relation between the human capitalists share and investment good prices. Next, we plan to use the model to get quantitative estimates of the degree of complementarity between physical and human capital. The estimated version of the structural model will also allow us to explore the quantitative implications of the complementarity mechanism.

Our paper contribute to the following distinct strands of literatures. First, there is an ongoing discussion on the driving forces of the secular evolution of factor shares in the macroeconomic literature (e.g., Elsby et al. (2013), Neiman and Karabarbounis (2014), Lawrence (2015), Hartman-Glaser et al. (2016), Autor et al. (2017) ). This literature has focused on raw labor share, but less is known about intermediate levels of the income distribution. And direct evidence on the relation between investment good prices and factor shares is still limited/mixed (Acemoglu (2002)).

Our theoretical focus on the investment-specific technological change builds on the earlier macro and asset pricing literature (e.g., Greenwood et al. (1997), Papanikolaou (2011), Kogan and Papanikolaou (2014), Krusell et al. (2000)). We broaden this literature by examining its implications for factor shares and using new micro data to characterize the shape of the aggregate production function.

Relatedly, our analysis has implications for the broader debate on income distribution between capital and labor, and the concern on the rising inequality (Piketty (2014), Caicedo et al. (2016), Gabaix et al. (2016), Stokey (2016)), which on the finance side has generally focused on the very top of the income distribution (e.g., Gabaix and Landier (2008), Kaplan and Rauh (2010), Frydman and Saks (2010), Frydman and Papanikolaou (2015)). Our analysis broadens this literature by highlighting the importance of employees below the very top executive level.

Last but not least, a growing literature in macro and finance highlights the importance of a "missing factor" intangible/organizational capital (e.g., Eisfeldt and Papanikolaou (2014), Barkai (2016)). We bring new micro data to bear with the measurement challenges and examine the importance of the rents generated by the missing factor from a national income accounting perspective, which has received so far limited attention in this literature.

# 2 Empirical Facts

For our empirical analysis we construct two datasets, at the industry-level and at the firm-level, respectively. Our industry-level employment, output, and wages outcomes are from the NBER-CES Manufacturing Industry Database, which is based largely on the Annual Surveys of Manufacturing datasets. Consumption good prices are from St Louis FRED. We consider two levels of industry aggregation, 3-SIC and 4-SIC. Our firm-level data is from two main sources: Compustat, which covers the universe of publicly-traded US firms, and Risk Metrics Group (formerly the Investor Responsibility Research Center (IRRC)), which covers firms from the S&P 500, S&P midcap, and S&P smallcap indexes. Both Compustat and the Risk Metricks stock option programs data come from 10-K statements filed with the Securities and Exchange Commission. Combining these data leads to a core industry-level dataset for capital and labor shares for the 1950 to 2009 period which comprises up to 6,174 industry-year observations for 459 4-SIC industries, and a core firm-level dataset with 86,940 firm-year observations for 7,356 firms.

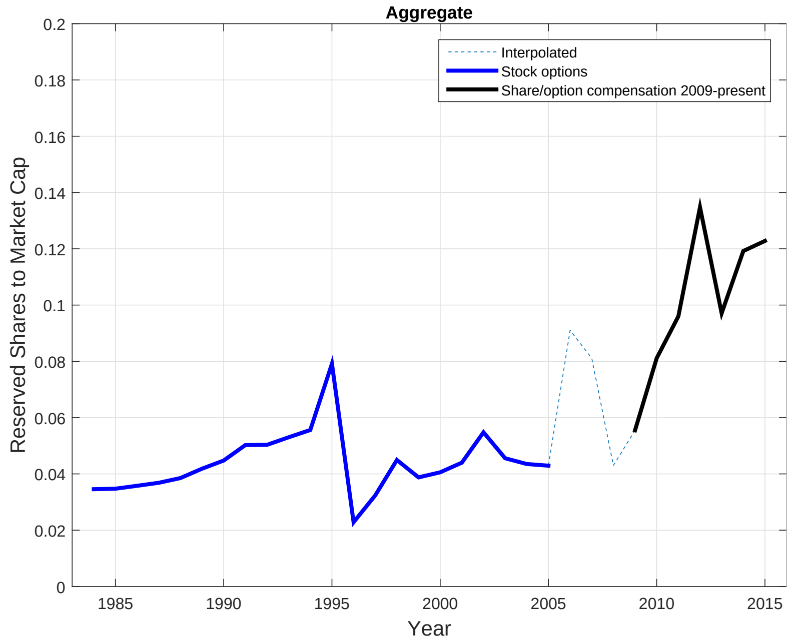
We construct two measures of non-wage income as a share of output, which is our empirical proxy for the importance of human capitalists: the first is based on the number of shares reserved for employee stock option compensation (RS), which is available in Compustat from 1984 to 1996. We extend it past 1996 using Risk Metrics and hand-collected data from 10-Ks. The second is based on selling, general, and administrative expenses (SGA). Since SGA includes other expenses unrelated to non-wage employee compensation, we follow the standard approach in the literature (e.g., Eisfeldt and Papanikolaou (2013)) and weigh SGA by 0.3.

We begin our analysis by considering the stylized facts of the evolution of corporate income shares over time. Figure 1 shows that the ratio of the value of shares reserved for employee compensation to the market value of the firm has about tripled since the 1980s and stands at about 12% by 2015. Figure 2 helps to visualize the main hypothesis of the paper: That investment-specific technological change contributed to the rise of the human capitalists income share. The figure plots annual averages across industries of the physical capital, human capitaslists, and labor income shares over the last five decades. The physical capital share has been relatively flat in the U.S. since the 1960s (red-solid line, top panel), while the labor share has declined (red-solid line, bottom panel), and the human capitalists share (measured as SG&A/value added) has risen (blue-solid line, top panel). The human capitalists share clearly displays a pronounced secular upward trend. By contrast and in line with the cross-country evidence of Neiman and Karabarbounis (2014), the labor share experience a steady decline.

Next, we turn to cross-industry and cross-firm evidence. To that end, we regress each measure of the human capitalists income share on investment good prices, while controlling for time and industry effects. In the firm-level analysis we consider a more conservative specification that also controls for within-industry differences across firms by including firm fixed effects as well as a variety of standard time-varying firm-level controls such as the market-to-book ratio, firm size, cash flow, and a dummy for whether the firm pays dividend in any given year. The resulting estimates are reported in Tables 1 to 6. Table 1 confirms that the time-series relations among factor shares shown in Figure 2 also hold across-industries. The coefficient on investment good prices in Tables 2 and 3 is robustly negative and statistically significant across the two measures of the human capitalists income share and both industry- and firm-level specifications, respectively. Panel B of Table 2 confirms across-industries the cross-country fact of Neiman and Karabarbounis (2014) that there is a positive relation between the labor share and investment good prices. Table 4 examines cross-industry heterogeneity in the relation between the human capitalists share and investment good prices. Finally, in Tables 5 and 6 we have started to explore the relation between non-wage employee income and investment good prices.

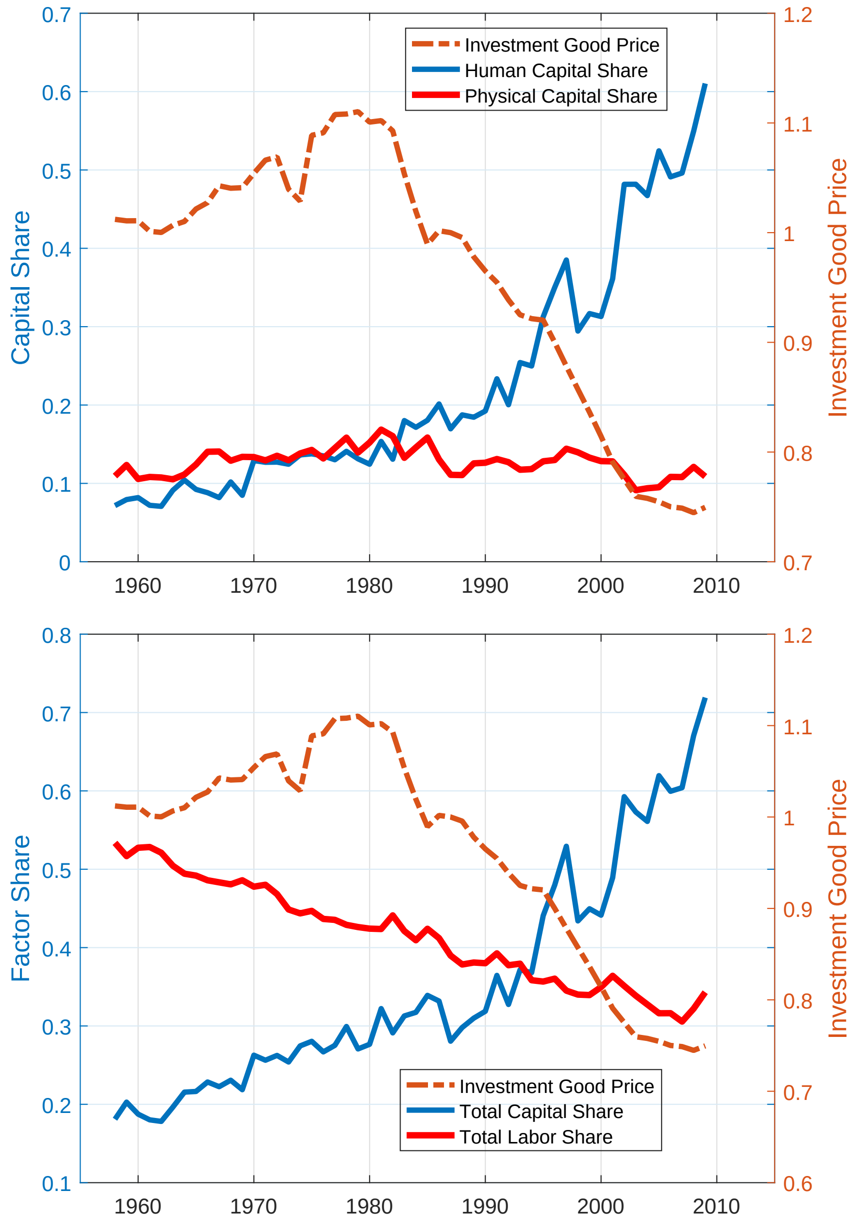
[Insert Table 1-4 Here]

Figure 1: Employee-Owned Fraction of Public Firms




Source: Compustat Fundamental Annual (1984-1996), RiskMetrics (IRRC) (1996-2006) and hand-collected data from 10-Ks (2009-2015). The plot reports the time series of the ratio of the value of reserved shares to stock market capitalization.

Figure 2: Factor Shares and Investment Good Prices




Source: NBER-CES manufacturing industry database merged with Compustat Fundamental Annual. Physical capital share is physical capital investment divided by total output. Human capital share is 30%XSGA by total output. Total labor share is labor income by total output.

# 3 The Model

The economy is populated by a continuum of firms who produce intermediate goods $j$ using both physical capital $k$ and human capital $h$. There are two sectors of households: one household sector, denoted by $C$, owns physical capital, while the other household sector $H$ produces human capital. We refer the $H$ sector as *human capitalists*.

## 3.1 The Economy

**Final Goods Production** The final good is produced using the continuum of intermediate good $j$ which is a unit measure. The production is perfect competitive through a Dixit-Stiglitz aggregator.

$$Y_t = \left[ \int_0^1 y_{j,t}^{\frac{1}{\epsilon_t}} dj \right]^{\epsilon_t} \tag{1}$$

$\epsilon_t > 1$[1] is the elasticity of substitution between intermediate goods $j$. The intermediate good $j$'s price is $p_t(j)$, which is endogenously determined by solving the demand of the final good producer's profit maximization problem. Given perfectly competition, there is zero profit for the final good producer, and hence we obtain the demand function for the intermediate good $j$:

$$y_{j,t} \equiv D_t(p_t(j)) = Y_t \left( \frac{p_t(j)}{P_t^Y} \right)^{\frac{\epsilon_t}{1-\epsilon_t}} \tag{2}$$

The final consumption good is the numeraire and has a price $P_t^Y = 1$.

**Intermediate Good Production** Production of intermediate goods requires both type of capital $k$ and $h$, and also labor $n_t$ supplied by both sectors of household. In this simple model, we assume that there is *no* adjustment cost associated either with investment or with

[1] By assuming $\epsilon > 1$, we obtain curvature in the production of final good sector: each type of intermediate good $j$ is required for the final good production.

adjusting unskilled labor $n_t$. The required rate of return for physical capital and human capital is $R_t^k$ and $R_t^h$ respectively. Labor is compensated with a per-period market wage $w_t$. Firms produce intermediate good $j$ using $k$, $h$, and $n$ according to a constant-return-to-scale CES production function (Krusell et al., 2000):

$$y_{j,t} = f(z_t, k_t(j), h_t(j), n_t(j)) = z_t \left[ A_c \left( A_k k_t(j)^\rho + A_h h_t(j)^\rho \right)^{\frac{\sigma}{\rho}} + A_n n_t(j)^\sigma \right]^{\frac{1}{\sigma}} \tag{3}$$

where $z_t$ is the factor neutral productivity, $A_i, i = c, k, h, n$ are factor-augmented technology. $\sigma$ governs the elasticity of substitution $(\frac{1}{1-\sigma})$ between equipment capital and labor, and the elasticity of substitution between human capital and labor. $\rho$ governs the elasticity of substitution $(\frac{1}{1-\rho})$ between physical capital and human capital. If the value of $\sigma$ or $\rho$ is greater than zero, it indicates that substitutability is greater than Cobb-Douglas production function[2]. We assume that equipment capital is more complementary with human capital, than with workers, $\sigma > \rho$.

The profit-maximization problem $\mathcal{P}$ of the intermediate sector is:

$$\max_{p_t(j), k_t(j), h_t(j), n_t(j), y_{i,t}} \Pi_t(j) = p_t(j) y_{j,t} - R_t^k k_t(j) - R_t^h h_t(j) - w_t n_t(j) \tag{4}$$

subject to the demand for intermediate good $j$ from equation (2)

$$y_{j,t} = p_t(j)^{\frac{\epsilon_t}{1-\epsilon}} Y_t \tag{5}$$

The first order conditions of the profit-maximizing choice show a simple markup over the

[2]If either $\sigma$ or $\rho$ is equal to zero, the production function is in Cobb-Douglas form. If either $\sigma$ or $\rho$ is equal to one, we have linear or perfect substitution in the production function.

marginal cost under constant return to scale technology:

$$k \quad : \quad p_t(j) f_k(j) = \mu_t R_t^k \tag{6}$$

$$h \quad : \quad p_t(j) f_h(j) = \mu_t R_t^h \tag{7}$$

$$n \quad : \quad p_t(j) f_n(j) = \mu_t w_t \tag{8}$$

where the markup over marginal cost is $\mu_t = \epsilon_t$, the marginal productivity for $k$ is $f_k = A_k y^{1-\rho} k_t^{\rho-1}$, and the marginal productivity for $h$ is $f_h = A_h y^{1-\rho} h_t^{\rho-1}$.

**Agents** Economy is populated with two sectors of household: sector of entrepreneurs, $K$, that supply physical capital $k$ and labor $n$, while the human capitalists $H$ supply $h$.

**Entrepreneurs** owns production technology that produces physical capital $k$. We assume linear technology in producing capital goods. Households can transfer final outputs to increase physical capital stock $k$ at certain prices.[3] The laws of motion for equipment capital is as follows:

$$k_{t+1} \quad = \quad (1-\delta_k) k_t + I_t^k, \; 0 < \delta_k < 1 \tag{9}$$

Every period, investment decisions of $I_t^k$ is made. The capital stock of $k$ depreciate at the rate $\delta_k$. There is no adjustment cost in investing $k$. Define $p_t^k$ is the relative price of physical capital investment goods over the numeraire. $\tilde{p}_t^k = \frac{p_t^k}{z_t^k}$ is the price of equipment capital investment good with $z_t^k$ the investment-specific technological (IST) shock. Following Greenwood et al. (1997), $\tilde{p}_t^k$ represents the effective conversion of final outputs to equipment capital.

For now, we assume that the entrepreneur sector owns the production of intermediate good and share the positive marginal profits $\Pi_t$ from the sector. They also have access to

[3]We can extend the current setup to a general environment as in Neiman and Karabarbounis (2014) where there is an intermediate goods sector for $k$.

the risk-free assets $f_t$ with interest rate $R_t^f$. The entrepreneur maximize the life-time utility:

$$\max_{\{c_t, I_t^k\}_{t=0}^{\infty}} \sum \beta^t U^k(c_t^k, n_t)dt$$

subject to the budget constraint:

$$c_t^k + \tilde{p_t^k} I_t^k + f_{t+1} - (1 + R_t^f)f_t = \int_0^1 R_t^k k_t(j)dj + \Pi_t + w_t n_t \tag{10}$$

where $\Pi_t = \int_0^1 \Pi_t(j)dj = (\mu - 1)\int_0^1 p_t(j)y_{j,t}dj$.[4]

**Human Capitalists** own production technology that produces human capital $h$.

$$h_{t+1} = (1 - \delta_h)h_t + I_t^h, \; 0 < \delta_h < 1 \tag{11}$$

Skilled households investment in the accumulation of human capital. The investment $I_t^h$ can be interpreted as investment to obtain skills or to improve knowledge. [5] Skilled household maximizes the expected life-time utility:

$$\max_{\{c_t, I_t^h\}_{t=0}^{\infty}} \sum \beta^t U^h(c_t^h)dt$$

subject to the budget constraint:

$$c_t^h + I_t^h + f_{t+1} - (1 + R_t^f)f_t = \int_0^1 R_t^h h_t(j)djt \tag{12}$$

[4]The equilibrium will be symmetric, so the skilled household owns the same share of each intermediate good $j$ sector.

[5]In an extended version of our model, we micro-found the human capital accumulation by assuming that human capitalists invest to obtain one type of skills $z$. There is a continuum of types of skill $x(z)$ possessed by each skilled household indexed by $z$. Each type of skills is necessary to form the human capital $h$ according to a CES aggregator $h_t = \left(\int_0^1 x_t(z)^{\frac{1}{\eta}} dz\right)^{\eta}$. Household can solve for the markup given the demand for variety of skills and a constant marginal cost $c(z)$ to build up skill $z$. This competitive monopolistic setting means that return to skill is a constant markup over the marginal cost of skill $z$, while the relative share of human capitalist is determined by the demand of $h$ in the intermediate good sector, which is driven by the elasticity of substitution between factors.

**Equilibrium** We consider a symmetric competitive equilibrium. Equilibrium is defined as a sequence of prices $\{p_t(j)\}_j$ and quantities such that:

1. Each household sector $i = k, h$ maximizes their life-time utilities

$$\max_{\{c_t^i, I_t^i\}_{t=0}^{\infty}} \sum \beta^t U^i dt$$

   subject to the budget constraint (10) or (12).

2. The owner of the final consumption goods sector solves for maximization problem $\mathcal{P}$.

3. The equilibrium is symmetric: $p_t(j) = P_t = 1$, $k_t(j) = k_t$, $h_t(j) = h_t$ and $y_{j,t} = Y_t$. Hence, the market clearing conditions are written down as follows:

$$Y_t = C_t + \tilde{p_t^k} I_t^k + I_t^h \tag{13}$$

Given the equilibrium definition, we obtain the standard inter-temporal Euler equations for consumption and investment:

$$1 + R_{t+1}^f = \frac{U_{c,t}^i}{\beta U_{c,t+1}^i}, \qquad i = k, h \tag{14}$$

$$R_{t+1}^k = \tilde{p^k} \frac{U_{c,t}^k}{\beta U_{c,t+1}^k} - \tilde{p^k}_{t+1}(1 - \delta_k) \tag{15}$$

$$R_{t+1}^h = \frac{U_{c,t}^h}{\beta U_{c,t+1}^h} - (1 - \delta_h) \tag{16}$$

$$w_t = \frac{U_{n,t}}{U_{c,t}} \tag{17}$$

## 3.2 Factor Shares of Output

In this subsection, we discuss the factor shares of output in our baseline economy and derive the properties of factor shares. The final output is split into three ways: Physical capital share: $s_k = \frac{R_t^k k_t + \Pi_t}{Y_t}$; human capital share: $s_h = \frac{R_t^h h_t}{Y_t}$ and the unskilled labor share: $s_n = \frac{w_t n_t}{Y_t}$.

With constant return to scale technology: $s_k + s_h + s_n = 1$. Given that our analysis focuses on the steady state, we will omit the subscription $t$ in the following context.

Under the symmetric equilibrium, the returns of physical capital and human capital can be derived from first order conditions of the profit maximization problem:

$$f_k = A_c A_k \left(\frac{y}{\Psi}\right)^{1-\sigma} \left(\frac{\Psi}{k}\right)^{1-\rho} = \mu_t R_t^k \tag{18}$$

$$f_h = A_c A_h \left(\frac{y}{\Psi}\right)^{1-\sigma} \left(\frac{\Psi}{h}\right)^{1-\rho} = \mu_t R_t^h \tag{19}$$

where $\Psi = (A_k k^\rho + A_h h^\rho)^{\frac{1}{\rho}}$. From the above equations, the ratio between physical and human capital is a function of the relative capital return.

$$\frac{h}{k} = \left[\frac{A_h R^k}{A_k R^h}\right]^{\frac{1}{1-\rho}} \equiv \mathbf{B} \tag{20}$$

Note that $\frac{R^k}{R^h} = \frac{\tilde{p_t^k}(1+R_f) - \tilde{p_{t+1}^k}(1-\delta_k)}{(1+R_f)-(1-\delta_h)}$ from households' first order condition. Since $\rho < 1$, $\frac{h}{k}$ is increasing in $\frac{R^k}{R^h}$ given $A_h$ and $A_k$. We can now define the relative factor shares:

$$\frac{s_k}{s_h} = \frac{R^k k + (1 - \frac{1}{\mu_t})Y_t}{R^h h} = \frac{R^k k}{R^h h} + (1 - \frac{1}{\mu})\frac{1}{s_h}$$

Rewrite the relative income $\frac{R^k k}{R^h h}$ as

$$\mathbf{D} \equiv \frac{R^k k}{R^h h} = \frac{R^k}{R^h} \cdot \left[\frac{A_k R^h}{A_h R^k}\right]^{\frac{1}{1-\rho}} = \left(\frac{A_k}{A_h}\right)^{\frac{1}{1-\rho}} \left[\frac{R^k}{R^h}\right]^{\frac{\rho}{1-\rho}}$$

Hence, we have

$$\frac{s_k}{s_h} = \frac{R^k k}{R^h h} + (1 - \frac{1}{\mu})\frac{1}{s_h} = \mathbf{D} + (1 - \frac{1}{\mu})\frac{1}{s_h} \tag{21}$$

The following lemma discuss the property of relative share of $k$ to $h$. $\mathbf{D}$ as a function can be increasing or decreasing in $\frac{R^k}{R^h}$ depending on whether $h$ and $k$ are substitute or complimentary.

**Lemma 1** *If $\rho < 0$ (complimentary), $\boldsymbol{D}$ is decreasing in $\frac{R^k}{R^h}$. On the contrary, if $\rho > 0$ (substitute), $\boldsymbol{D}$ is increasing in $\frac{R^k}{R^h}$.*

If $\rho < 0$ (complimentary), $\mathbf{D}$ is increasing in $\frac{R^k}{R^h}$. The intuition is that, as physical capital becomes cheaper, more $h$ is adopted in the production because of complimentarity. Hence, the relative share of $h$ to $k$ is increasing. On the contrary, if $\rho > 0$ (substitute), $\mathbf{D}$ is increasing in $\frac{R^k}{R^h}$. We now derive the total capital share $s_k + s_h$:

$$\begin{aligned} 1 - s_n &= s_k + s_h = \frac{A_c \left(\frac{Y}{\Psi}\right)^{1-\sigma} \Psi^{1-\rho}[A_k k^\rho + A_h h^\rho]}{\mu Y} + 1 - \frac{1}{\mu} \qquad (22) \\ &= \frac{A_c \left(\frac{Y}{\Psi}\right)^{1-\sigma} \Psi^{1-\rho}\Psi^\rho}{\mu Y} + 1 - \frac{1}{\mu} = \frac{A_c}{\mu}\left(\frac{y}{\Psi}\right)^{-\sigma} + 1 - \frac{1}{\mu} \qquad (23) \end{aligned}$$

Find $\frac{Y}{\Psi}$ as a function of prices:

$$\begin{aligned} h &= \mathbf{B}k \\ \Psi &= [A_k k^\rho + A_h \mathbf{B}^\rho k^\rho]^{\frac{1}{\rho}} = (A_k + A_h \mathbf{B}^\rho)^{\frac{1}{\rho}} k \equiv \mathbf{C}k \qquad (24) \end{aligned}$$

Since $\Psi$ is linear in k, we obtain the expression of capital (non-labor) share in the function of prices:

$$\begin{aligned} \frac{Y}{\Psi} &= \frac{Y}{\mathbf{C}k} = \left[\frac{R^k}{A_c A_k \mathbf{C}^{1-\rho}}\right]^{\frac{1}{1-\sigma}} \qquad (25) \\ 1 - s_n &= \frac{A_c}{\mu}\left[\frac{A_c A_k \mathbf{C}^{1-\rho}}{R^k}\right]^{\frac{\sigma}{1-\sigma}} + 1 - \frac{1}{\mu} \\ &= \frac{1}{\mu} A_c^{\frac{1}{1-\sigma}} A_k^{\frac{\sigma}{1-\sigma}} \mathbf{C}^{\frac{\sigma(1-\rho)}{1-\sigma}} R^{k\,\frac{\sigma}{\sigma-1}} + 1 - \frac{1}{\mu} \qquad (26) \end{aligned}$$

**Steady State** To see the impact of investment good prices on the factor shares, we now consider the transition dynamics of the steady states.

Define the percent change of variable x between two periods (steady states) as $\hat{x} = \frac{x'}{x} - 1$.

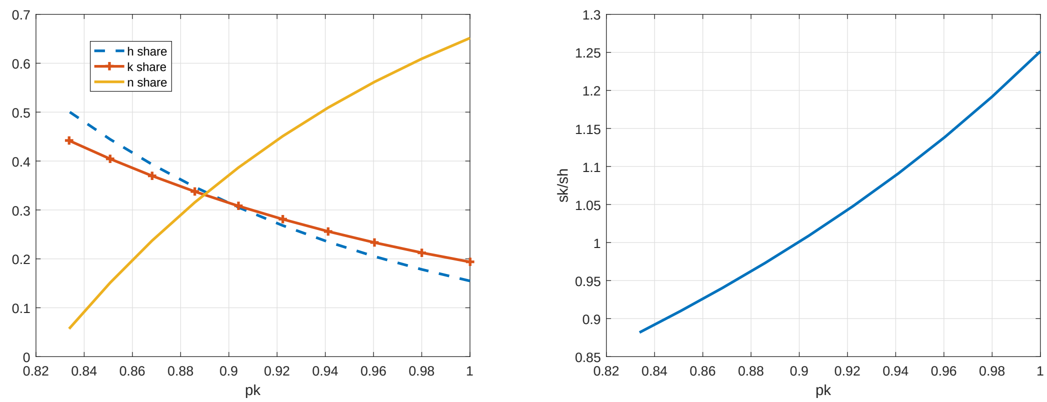
If we consider $\hat{x}$ defines percentage change of steady-state-to-steady-state transition, then we have $\hat{R_{f,t}}$ is a constant if $\beta$ is a constant. Keeping $\delta$ and $\mu$[6] constant along the transition dynamics, $\hat{R}^k = \hat{\tilde{p}}^k$ and $\hat{R}^h = 0$. The trend of marginal return of capital equals the trend of investment good prices.

Define $s_{k,h} = \frac{s_k}{s_h}$ the relative capital share, hence

$$\hat{s_{k,h}} = \frac{\rho}{1-\rho}(\hat{R}^k - \hat{R}^h) + (1 - \frac{1}{\mu})\hat{s_h} \tag{27}$$

as relative price of physical investment good is downward trended and $(1-\frac{1}{\mu})\hat{s_h} > 0$, the relative share of physical capital compared to human capital can only be declining in $\hat{\tilde{p}}^k$ only if $\rho > 0$, i.e. $k$ and $h$ are substitutes. Figure 3 illustrate the comparative statics. As $\tilde{p}^k$ declines, both $h$ share and $k$ share increase but with $h$ share increases relatively faster.

Figure 3: Comparative statics: $p^k$




$\mu = 1.05, \delta_k = 0.1, \delta_h = 0.18, R^h = 1.1, \tilde{p}^k_0 = 1,\ g_{p^k} = 0.98, \sigma = 1.4, \rho = 0.5$

We can also write down the steady state growth of total capital share: $s_c = 1 - s_n$, obtained from equation (25):

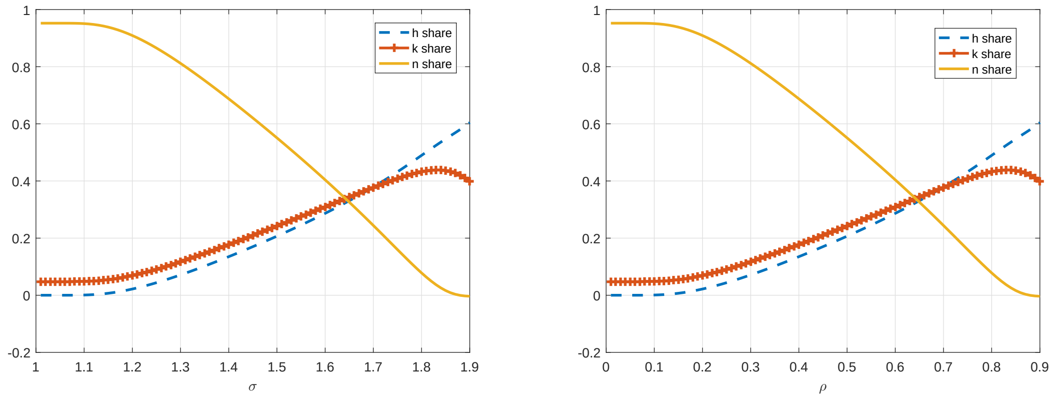
$$\hat{s_c} \quad = \quad \frac{\sigma(1-\rho)}{1-\sigma}\hat{\mathbf{C}} + \frac{\sigma}{\sigma-1}\hat{\tilde{p}}^k \tag{28}$$

The total capital share increases in $\sigma$. Depending on the sign of $\sigma$, the total capital share

[6]We can relax this assumption later.

can be declining in $\rho$.

Figure 4: Comparative statics: $\sigma$ and $\rho$




$\mu = 1.05, \delta_k = 0.1, \delta_h = 0.18, R^h = 1.1, \tilde{p_0^k} = 1,\ g_{p^k} = 0.98$

# 4 Quantitative Analysis and Estimation

We estimate the following system of firm's FOC and household's Euler equation. Assuming $A_i = 1$.

$$\frac{\tilde{p^k}_{t+1}}{\tilde{p^k_t}}(1-\delta_k) + \frac{1}{\tilde{p^k_t}}R^k = (1-\delta_h) + R^h \tag{29}$$

$$\frac{1}{\mu}\mathbf{C}^{\frac{(1-\rho)\sigma}{1-\sigma}} {R^k}^{\frac{\sigma}{\sigma-1}} + 1 - \frac{1}{\mu} = 1 - s_n \tag{30}$$

$$\left(\frac{R^k}{R^h}\right)^{\frac{\rho}{1-\rho}} + \left(1-\frac{1}{\mu}\right)\frac{1}{s_h} = \frac{s_k}{s_h} \tag{31}$$

Parameters we need to estimate $\{\delta_k, \delta_h, \sigma, \rho, \mu\}$, and we can calibrate the growth of investment good prices $\frac{\tilde{p^k}_{t+1}}{\tilde{p^k_t}}$.

**Comparative Statics** : Given $R^k$, $R^h$ and $\tilde{p^k_t}$, we show how parameter values affects factor shares.

- Parameters: $\mu = 1.05, \delta_k = 0.1, \delta_h = 0.18, R^h = 1.1$. The initial investment good price is set to 1, $\tilde{p^k_0} = 1$, and set growth rate of $\tilde{p^k}$ less than one ($g_{p^k} = 0.98$) representing the downward trends in the investment good price.

- Solve $R^k$ from equation (32), and then compute $s_n$, $s_h$, and $s_k$ from (33) and (34).
- See Figure 1 and Figure 2.

**Estimation Strategy and Transitory Experiment** TBA

- Moments: $s_n$, $s_k$, $s_h$, $R_h$, $R_k$, $\tilde{p^k}$
  - factor shares: industry average in year 1985. industry definition.
  - $R_k$: interest rate?
  - industry level investment good price in year 1985.
- Parameters:
  - Calibrated: $\delta_k$, $\delta_h$, $\mu$
  - Estimated: $R_h$, $\sigma$, $\rho$
- Identification: cross industry difference.

# 5 Conclusion

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Table 1: The Relation Among Factor Shares: Industry-Level Analysis

This table reports industry-level regressions of the human capital share in a given year on the physical capital share at the 4-SIC (Panel A) and 3-SIC level of industry aggregation, respectively. The share variables are defined relative to value added. The time period is 1950-2010. The NBER-CES dataset includes 459 (140) unique industries at the 4-SIC (3-SIC) level. All specifications include time (year) and industry effects. Standard errors are robust, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

| Panel A: 4-SIC Industry & Time Fixed Effects Estimates for the Human Capital Share | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Human Capital Share=SG&A/VADD | | | | Human Capital Share=(Value of Reserved Shares)/VADD | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | logs | logs | levels | levels | logs | logs | levels | levels |
| Physical Capital Share | 0.177*** | 0.108** | 0.503*** | 0.501*** | 0.170** | 0.146** | 0.143** | 0.140** |
| | (0.043) | (0.043) | (0.073) | (0.072) | (0.068) | (0.068) | (0.060) | (0.060) |
| Total Labor Share | | -0.039 | | -0.078** | | -0.317** | | -0.123*** |
| | | (0.083) | | (0.032) | | (0.149) | | (0.040) |
| Raw Labor Share | -0.576*** | | -0.194*** | | -0.604*** | | -0.229*** | |
| | (0.067) | | (0.050) | | (0.132) | | (0.059) | |
| Time Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N. of Industries | 459 | 459 | 459 | 459 | 459 | 459 | 459 | 459 |
| N. of obs. | 6,174 | 6,174 | 6,207 | 6,207 | 3,672 | 3,672 | 4,475 | 4,475 |
| $R^2$(%) | 68.31 | 67.86 | 63.03 | 62.94 | 66.48 | 66.30 | 49.17 | 49.04 |
| Panel B: 3-SIC Industry & Time Fixed Effects Estimates for the Human Capital Share | | | | | | | | |
| | Human Capital Share=SG&A/VADD | | | | Human Capital Share=(Value of Reserved Shares)/VADD | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | logs | logs | levels | levels | logs | logs | levels | levels |
| Physical Capital Share | 0.184*** | 0.159*** | 0.525*** | 0.543*** | 0.272*** | 0.272*** | 0.167** | 0.162** |
| | (0.051) | (0.053) | (0.080) | (0.084) | (0.094) | (0.090) | (0.077) | (0.075) |
| Total Labor Share | | -0.228** | | -0.441*** | | -0.596*** | | -0.173 |
| | | (0.109) | | (0.148) | | (0.186) | | (0.117) |
| Raw Labor Share | -0.395*** | | -0.667*** | | -0.660*** | | -0.310 | |
| | (0.094) | | (0.202) | | (0.165) | | (0.208) | |
| Time Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N. of Industries | 117 | 117 | 117 | 117 | 117 | 117 | 117 | 117 |
| N. of obs. | 5,715 | 5,715 | 5,727 | 5,727 | 3,399 | 3,399 | 4,177 | 4,177 |
| $R^2$(%) | 66.65 | 66.52 | 43.81 | 43.67 | 64.13 | 64.06 | 25.31 | 25.28 |

Table 2: The Human Capital Share and Investment Good Prices: Industry-Level Analysis

This table reports industry-level regressions of the human capital share (Panel A), and the labor share (Panel B) in a given year on investment good prices. The share variables are defined relative to value added. The time period is 1950-2010. All specifications include time (year) and industry effects. Standard errors are robust, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

| Panel A: Industry & Time Fixed Effects Estimates for the Human Capital Share | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Human Capital Share=SG&A/VADD | | | | Human Capital Share=(Value of Reserved Shares)/VADD | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | logs | logs | levels | levels | logs | logs | levels | levels |
| | 4-SIC | 3-SIC | 4-SIC | 3-SIC | 4-SIC | 3-SIC | 4-SIC | 3-SIC |
| Investment Good Prices | -1.345*** | -1.573*** | -0.197*** | -0.202*** | -1.185*** | -1.164*** | -0.134*** | -0.166*** |
| | (0.098) | (0.231) | (0.019) | (0.043) | (0.199) | (0.257) | (0.050) | (0.018) |
| Time Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N. of Industries | 459 | 117 | 459 | 117 | 459 | 117 | 459 | 117 |
| N. of obs. | 6,174 | 2,443 | 6,207 | 2,458 | 3,672 | 3,399 | 4,475 | 4,177 |
| $R^2$(%) | 69.02 | 64.00 | 45.77 | 41.51 | 66.66 | 64,05 | 23.52 | 53.99 |

| Panel B: Industry & Time Fixed Effects Estimates for the Labor Share | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Labor Share=Total Payroll//VADD | | | | Raw Labor Share=Production Workers Payroll/VADD | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | logs | logs | levels | levels | logs | logs | levels | levels |
| | 4-SIC | 3-SIC | 4-SIC | 3-SIC | 4-SIC | 3-SIC | 4-SIC | 3-SIC |
| Investment Good Prices | 0.031** | 0.136*** | 0.051*** | 0.065*** | 0.441*** | 0.573*** | 0.059*** | 0.047*** |
| | (0.015) | (0.022) | (0.006) | (0.007) | (0.017) | (0.028) | (0.003) | (0.005) |
| Time Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N. of Industries | 459 | 140 | 459 | 140 | 459 | 140 | 459 | 140 |
| N. of obs. | 23,759 | 7,215 | 23,759 | 7,215 | 23,759 | 7,215 | 23,759 | 7,215 |
| $R^2$(%) | 83.85 | 87.50 | 82.37 | 89.25 | 87.77 | 90.82 | 86.25 | 91.12 |

Table 3: The Human Capital Share, Stock Market Value, and Investment Good Prices: Firm-Level Analysis

This table reports firm-level regressions of the human capital share in a given year on investment good prices. The share variables are defined relative to stock market value. The time period is 1950-2010. All specifications include time (year) effects, and otherwise differ based on whether they also include industry (4-SIC) or firm fixed effects. Standard errors are robust, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

| Panel A: Industry & Time Fixed Effects Estimates for the Human Capital Share | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Human Capital Share= | SG&A/ Stock Mkt Value | | | (Value of Reserved Shares)/ Stock Mkt Value | | | (Value of Shares Reserved for Stock Options)/ Stock Mkt Value | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| | No Controls | +Industry Controls | +Firm Controls | No Controls | +Industry Controls | +Firm Controls | No Controls | +Industry Controls | +Firm Controls |
| Inv. Good Prices | -0.031*** | -0.036*** | -0.063*** | -0.036*** | -0.035*** | -0.036*** | -0.028** | -0.027** | -0.035*** |
| | (0.007) | (0.007) | (0.010) | (0.005) | (0.006) | (0.006) | (0.011) | (0.011) | (0.012) |
| Time Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm Effects | No | No | No | No | No | No | No | No | No |
| N. of Firms | 7,356 | 7,336 | 7,073 | 5,909 | 5,909 | 5,640 | 4,685 | 4,685 | 4,538 |
| N. of Industries | 209 | 209 | 209 | 209 | 209 | 209 | 209 | 209 | 209 |
| N. of obs. | 86,940 | 86,606 | 82,771 | 63,376 | 63,088 | 56,561 | 29,072 | 29,062 | 27,862 |
| $R^2$(%) | 13.99 | 14.01 | 22.35 | 16.27 | 16.06 | 17.56 | 13.41 | 13.41 | 16.84 |

| Panel B: Firm & Time Fixed Effects Estimates for the Human Capital Share | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Human Capital Share= | SG&A/ Stock Mkt Value | | | (Value of Reserved Shares)/ Stock Mkt Value | | | (Value of Shares Reserved for Stock Options)/ Stock Mkt Value | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| | No Controls | Industry Controls | Firm Controls | No Controls | Industry Controls | Firm Controls | No Controls | +Industry Controls | +Firm Controls |
| Inv. Good Prices | -0.069*** | -0.073*** | -0.094*** | -0.049*** | -0.049*** | -0.047*** | -0.051*** | -0.050*** | -0.050*** |
| | (0.009) | (0.010) | (0.011) | (0.006) | (0.006) | (0.007) | (0.011) | (0.011) | (0.011) |
| Time Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Effects | No | No | No | No | No | No | No | No | No |
| Firm Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N. of Firms | 7,356 | 7,336 | 7,073 | 5,909 | 5,909 | 5,640 | 4,685 | 4,685 | 4,538 |
| N. of Industries | 209 | 209 | 209 | 209 | 209 | 209 | 209 | 209 | 209 |
| N. of obs. | 86,940 | 86,606 | 82,771 | 63,376 | 63,088 | 56,561 | 29,072 | 29,062 | 27,862 |
| $R^2$(%) | 44.32 | 44.42 | 47.94 | 53.88 | 53.79 | 54.84 | 64.71 | 64.73 | 65.83 |

Table 4: Corroborating the Complementarity Mechanism: Industry-Level Sub-Sample Analysis

This table reports industry-level regressions of the human capital share in a given year on the physical capital share at the 4-SIC (Panel A) and investment good prices (Panel B). The share variables are defined relative to value added. The time period is 1950-2010. The NBER-CES dataset includes 459 (140) unique industries at the 4-SIC (3-SIC) level. All specifications include time (year) and industry effects. Standard errors are robust, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

| Panel A: Complementarity | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Human Capital Share= | SG&A/VADD | | | | (Value of Reserved Shares)/VADD | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | logs | logs | By Physical Capital Share | | logs | logs | By Physical Capital Share | |
| | | | High | Low | | | High | Low |
| Physical Capital Share | $0.102^{**}$ | $0.982^{***}$ | $0.327^{***}$ | -0.171 | $0.115^{*}$ | $0.683^{**}$ | $0.247^{**}$ | -0.005 |
| | (0.042) | (0.183) | (0.064) | (0.134) | (0.065) | (0.313) | (0.117) | (0.135) |
| Physical Capital Share$^2$ | | $0.152^{***}$ | | | | $0.102^{*}$ | | |
| | | (0.031) | | | | (0.054) | | |
| Time Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N. of Industries | 135 | 135 | 131 | 131 | 135 | 135 | 127 | 113 |
| N. of obs. | 6,174 | 6,174 | 3,087 | 3,087 | 3,672 | 3,672 | 1,979 | 1,693 |
| $R^2$(%) | 67.86 | 68.02 | 74.72 | 64.92 | 66.27 | 66.29 | 69.03 | 64.92 |
| Panel B: Skills Splits | | | | | | | | |
| Human Capital Share= | SG&A/VADD | | | | (Value of Reserved Shares)/VADD | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | By skill intensity | | By skill share | | By skill intensity | | By Skill Share | |
| | High | Low | High | Low | High | Low | High | Low |
| Physical Capital Share | $0.205^{***}$ | 0.087 | | | $0.228^{***}$ | 0.018 | | |
| | (0.070) | (0.076) | | | (0.081) | (0.103) | | |
| Inv. Good Prices | | | $-1.576^{**}$ | 1.209 | | | $-1.338^{***}$ | -0.350 |
| | | | (0.706) | (1.259) | | | (0.250) | (1.487) |
| Time Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N. of Industries | 60 | 67 | 72 | 73 | 83 | 89 | 94 | 94 |
| N. of obs. | 1,604 | 1,616 | 1,522 | 1,548 | 1,816 | 1,858 | 1,755 | 1,682 |
| $R^2$(%) | 75.59 | 72.11 | 73.75 | 82.10 | 67.40 | 63.65 | 69.59 | 70.20 |

Table 5: Human Capital Earnings, Factor Share and Investment Good Prices: Firm-Level Analysis

This table reports industry-level regressions of the human capital earnings (Panel A), and earnings share (Panel B) in a given year on factor share and investment good prices, in turn. The share variables are defined relative to value added. The time period is 1996-2005. All specifications include time (year) and firm effects. Standard errors are robust, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively.

Panel A: Firm & Time Fixed Effects Estimates for Total Employee Stock Option Compensation

| | ln(Employee Stock Options, Black-Scholes Value) | | | | ln(Employee Stock Options B-S Value/Employees) | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | firm FE, w/o controls | | firm FE, with controls | | firm FE, w/o controls | | firm FE, with controls | |
| Physical Capital Share | 0.390*** | | 0.364*** | | 0.308*** | | 0.316*** | |
| | (0.117) | | (0.138) | | (0.118) | | (0.137) | |
| Total Labor Share | -1.126*** | | -0.968*** | | -0.853*** | | -0.689** | |
| | (0.257) | | (0.336) | | (0.263) | | (0.339) | |
| Investment Good Prices | | -5.102** | | -5.707** | | -5.872** | | -5.718** |
| | | (2.551) | | (2.826) | | (2.663) | | (2.816) |
| Time Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N. of Industries | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 |
| N. of obs. | 4,624 | 4,624 | 3,695 | 3,695 | 4,608 | 4,608 | 3,681 | 3,681 |
| $R^2$(%) | 73.53 | 73.36 | 74.56 | 74.48 | 73.29 | 73.23 | 73.43 | 73.42 |

Panel B: Firm & Time Fixed Effects Estimates for Total Employee Stock Option Compensation Excluding Top Executives

| | ln(Non-Exec Employee Stock Options, B-S Value) | | | | Non-Exec Employee Stock Options Share Relative to CEOs | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | firm FE, w/o controls | | firm FE, with controls | | firm FE, w/o controls | | firm FE, with controls | |
| Physical Capital Share | 0.211* | | 0.224* | | 0.028 | | 0.049* | |
| | (0.120) | | (0.121) | | (0.025) | | (0.029) | |
| Total Labor Share | -0.640*** | | -0.529** | | -0.093* | | -0.148** | |
| | (0.235) | | (0.142) | | (0.051) | | (0.062) | |
| Investment Good Prices | | -5.892** | | -6.738** | | -1.276* | | -0.919 |
| | | (2.720) | | (3.045) | | (0.670) | | (0.703) |
| Time Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N. of Industries | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 |
| N. of obs. | 4,163 | 4,163 | 3,320 | 3,320 | 3,870 | 2,845 | 2,815 | 2,815 |
| $R^2$(%) | 71.99 | 73.91 | 73.33 | 75.21 | 20.42 | 20.43 | 21.17 | 22.71 |

## Table 6: Human Capital Wealth, Factor Share and Investment Good Prices: Firm-Level Analysis

This table reports industry-level regressions of the human capital wealth (Panel A), and share (Panel B) in a given year on factor shares and investment good prices, in turn. The share variables are defined relative to value added. The time period is 1996-2005. All specifications include time (year) and firm effects. Standard errors are robust, with ***, **, and * denoting significance at the 1%, 5%, and 10% level, respectively. Panle C reports summary statistics.

Panel A: Firm & Time Fixed Effects Estimates for Total Employee Stock Options Wealth

| | ln(Employee Wealth, Black-Scholes Value) | | | | ln(Employee Wealth B-S Value/Employees) | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | firm FE, w/o controls | | firm FE, with controls | | firm FE, w/o controls | | firm FE, with controls | |
| Physical Capital Share | 0.282** | | 0.313*** | | 0.236** | | 0.220* | |
| | (0.112) | | (0.110) | | (0.115) | | (0.115) | |
| Total Labor Share | -1.045*** | | -0.633** | | -0.809*** | | -0.546** | |
| | (0.240) | | (0.253) | | (0.249) | | (0.242) | |
| Investment Good Prices | | -5.392*** | | -6.375** | | -6.119*** | | -6.098** |
| | | (2.053) | | (2.774) | | (2.120) | | (2.745) |
| Time & Firm Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N. of Industries | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 |
| N. of obs. | 3,124 | 3,182 | 3,086 | 3,086 | 3,111 | 3,169 | 3,076 | 3,073 |
| $R^2$(%) | 85.06 | 85.06 | 85.92 | 85.87 | 82.45 | 82.54 | 83.92 | 84.02 |

Panel B: Firm & Time Fixed Effects Estimates for Total Employee Stock Option Wealth Excluding CEO

| | ln(Non-Exec Employee Wealth, B-S Value) | | | | Non-Exec Employee Wealth Share Relative to CEOs | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | firm FE, w/o controls | | firm FE, with controls | | firm FE, w/o controls | | firm FE, with controls | |
| Physical Capital Share | 0.235* | | 0.256** | | 0.003 | | 0.005 | |
| | (0.130) | | (0.127) | | (0.018) | | (0.017) | |
| Total Labor Share | -0.953*** | | -0.670** | | -0.016 | | -0.022 | |
| | (0.266) | | (0.292) | | (0.040) | | (0.043) | |
| Investment Good Prices | | -5.664** | | -7.495** | | -0.296 | | -0.680 |
| | | (2.432) | | (3.510) | | (0.330) | | (0.465) |
| Time & Firm Effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| N. of Industries | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 |
| N. of obs. | 2,672 | 2,725 | 2,646 | 2,646 | 2,622 | 2,672 | 2,596 | 2,596 |
| $R^2$(%) | 86.46 | 86.45 | 86.78 | 86.76 | 54.74 | 54.49 | 54.86 | 54.95 |

Panel C: Summary Statistics for Total Employee Stock Option Wealth

| Wealth | Employee, Level | Employee, Change for 1% Change Mkt Val | CEO, Change for 1% Change Mkt Val | Employee, Change for Median Change Mkt Val |
|---|---|---|---|---|
| $ M, mean | $72.4 | $4.8 | $1.5 | $28.6 |
| %, aggregate | 3.5% of Mkt Cap | 0.8% | 5.1% | 9.2% |