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Globalization, Employment, and Ownership of Human Capital*

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Abstract: Discussion of employment together with network of connected issues provides sensible public policies in global economy. Globalization of financial and real activities, trade, and technology spillover affect countries, industries and workers asymmetrically. The production and acquisition of human capital takes a generation or more. As such the issues of employment need long term planning with discipline. My suggestions are: devise long-term plan to improve the employment of young workers, and create an environment where young workers build and take ownerships of their human capital, and seek employment by promoting self-motivations. Employment policies have to provide incentives that are consistent with other economic goals controlling for negative side effects.

Key words: globalization; employment; ownership; human capital

JEL codes: J24, J31, J21, O33, D83

1. Introduction

Globalization, technology innovation, shift in the industry and sectoral value-added, change in the age distribution of populations put the issue of employment of young workers as one of most urgent and important issues. Accordingly, the understanding of the effect of dynamic changes in the global economic conditions on the employment of young workers and how to deal with negative effects on the employment of young workers are one of important challenges to academics, private firms and policy decision makers. It is important to handle the issue of young workers' employment from all aspects that are related to the issue. This paper critically reviews literature by juxtaposing related issues and questions from the perspective of multi-dimensional space.

Tackling the issue of employment of young workers, I consider the networks of connected issues as well as parties who are interested in the issues from a broader perspective of economy. The setting up of the issue in the context of network of interconnected problems is extremely informative, as we deal with specific microeconomic issues related to the employment of young workers considering the impact on other economic issues in a network of problems. The network approach implies that the discussion and policies in dealing with one issue has to consider the impact on other issues and solutions.

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To improve the employment of your workers, multitude of factors and issues are relevant: The increase in the human capital, and the quality of education, fiscal and tax policies to increase the employability of young workers, development of industries and firm that are likely to increase the employment of young workers, the distribution of works based on ages, and so on. At the same time, the listed issues are far-reaching implications, not simply on the immediate issues of young workers' employment. A series of measures that potentially help the employment of young workers draw resources and need reallocation of social capital. Investigating optimal decision to maximize social welfare is a traditional economic modelling considering relevant factors in the model. My approach is to treat the issue as a module and node or edge in a network of interconnected issues, and focus on one issue together with the linkages and connections of the issue to other nodes of issues and questions.

In a network approach of social and economic issues, first we have to agree on the important issues and the degree of importance of the issues. Alternatively, we can start with a particular issue and discuss and analyze the issue in relation to linkages to other issues, considering the network of related problems. I follow the second approach in the discussion of the employment of young workers and this approach is partial equilibrium analysis in general equilibrium framework. This approach is particularly useful for policy makers and regulators, as there are incomplete and omitted information to the decision makers at the time of decision. We have seen repeated cases of "good intention" of regulations and policy measures and unintended ill consequences.

There are at least two approaches to increase employment of young works. One is to increase the employment of all workers by growing economies that increase total employments. Second approach is to redistribute the fixed employment to young workers. In terms of policy measures, there are different approaches in achieving either of those methods. One is to follow market economic and private incentives by creating an environment to enhance the employability of young workers. Second one is detailed measures specifically focusing on the problem of your workers.

The purpose the paper is to juxtapose the issues in a three dimensional network and derive policy recommendations related to the issues of young workers for decision makers to make informed decisions relevant to the particular characteristics of the country. For example, the evidence that the financial integration improves economic growth and employment tells us that promoting growth is a means to increase the employment of young workers. Does measures to improve young employment enhance or hurt the employability of old works, and if so at what costs? This type of extension is only one example when we consider the network of questions. I term the network of interrelated questions similar to other networks of economic agents, firms and others. Differences with other typical network is that, in a network of questions, the nodes are questions rather than decision makers, and the links are related and connected economic questions, rather than the linkage of agents, e.g., credit and bank lending in a network of banks, firms and households. Figure 1 describes the network unconnected issues treating the issue of young workers' employment at the hub of the network. Figure 1 shows the two different ways of setting up problems. Figure 1, panel A is flatly list related problems, while panel B puts issues and problems in a network structure.

The process is particularly useful for policy makers and regulators, as the approach of dealing with issues is as follows: for particular issues, the process of decision and analysis is to consider what issues are likely to be relevant at each stages of analysis. This can be done before and after any specific measures are considered. Furthermore, the potential incentive effects of any specific measures, as households adopt and adapt to new policy measures can lessen the effectiveness of good intention. Section 1 discusses growth and employment. Globalization and employment are reviewed in section 2. In section 3 I discuss production of human capital, following by the investigation of employment from firms' perspective with a subtitle of "Firms: Hiring and

Financing friction and Ownership of organization capital". Employment policies are suggested in section 5. Section 6 concludes the paper.

Panel A: list of related issues

Growth			
Globalization	Financial	Trade	
Firms	hiring	Small	large
Physical capital	Human capital	Production of human capital	
Employment	Age-young/old		
wage	polarization		
technology	Productivity	education	
Policy measures			

Panel B: Network of interconnected issues/agenda

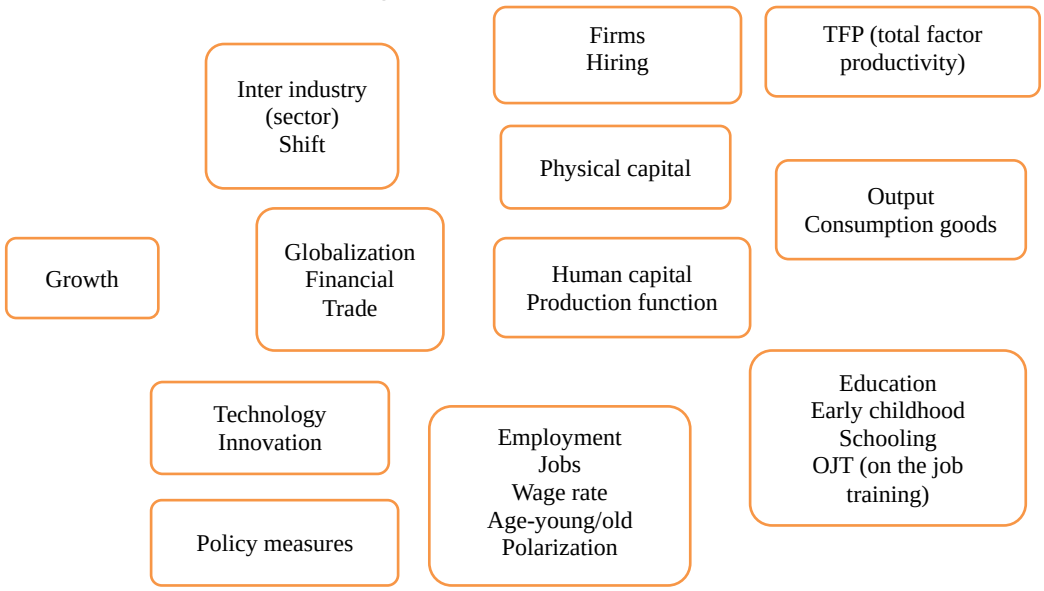

Figure 1 Network Unconnected Issues Treating the Issue of Young Workers' Employment at the Hub of the Network

2. Growth and Employment

Okun noted that, because of ongoing increases in the size of the labor force and in the level of productivity, real GDP growth close to the rate of growth of its potential is normally required, just to hold the unemployment rate steady. To reduce the unemployment rate, therefore, the economy must grow at a pace above its potential.

Okun's law states that a 1% decrease in unemployment will occur when the economy grows about 2% faster than expected. While the empirical magnitude might not be universally applied to all countries, it establishes the fact that growth decreases the unemployment. Assuming that all workers are homogeneous, one of most effective ways of improving the employment of young workers is to facilitate economic growth. In this aspect, it is imperative to consider the effect of globalization on growth, and differential impact on different sectors, groups of workers as well as the overall growth. Globalization and economic integration of countries in the world has increased over time and accelerated recently. Globalization and the integration of finance and trade lead to the economic growth and the synchronization of business cycle. Financial integration causes real economy

co-movements positively through channels of capital flows and financial liberalization. Trade integration also leads to world-wide synchronized economic growth. On the other hand, globalization-cum-trade imbalances exacerbates wage inequality in both trade-surplus and deficit countries. While globalization is likely to benefit all countries overall, there are many challenges facing each country as the effect on particular industries, countries and regions (e.g., South and North, developed and emerging economies) is asymmetric, differential and unbalanced.

The net effect of globalization on each country is not in the same direction and uniform, as there are different channels how trade and financial integrations affect economic growth and business cycle. Financial integration increases reallocation of credits for mortgage lending in the U.S. states (Loutskina & Strahan, 2015). Financial development promotes economic growth by reducing the cost of capital for firms that rely on external financing. Global banks' global lending channel lessens domestic shock as global banks use internal capital markets between parent and foreign subsidiaries, while contributing to international shock propagations (Cetorelli & Goldberg, 2012). Financial integration is associated with higher real economy synchronization through balance sheets of financial intermediaries (Calvo, 1998; Kaminsky, Reinhart, & Vegh, 2003) and commercial banks (Kaminsky & Reinhart, 2000). On the other hand, shocks to real sector lead to negative synchronization as countries are more financially integrated through channels of substitution of resources from the regions with negative collateral shocks to regions with no shocks (Morgan, Rime, & Strahan, 2004), and channeling capital to regions with better investment opportunities (Bekaert, Harvey, & Lundblad, 2005).

Impact of trade intensity on business cycle co-movement through different specialization patterns is larger for country pairs similar in economic structures with larger share of intra-industry trade, such as a pair of industrial and industrial countries. For other pairs (developing to developing countries, and industrial and developing countries), the correlations are non-positive (Cesar, Chong, & Stein, 2007). Another related evidence is global wage and income inequality. Globalization-cum-trade imbalances increase wage inequality in both trade surplus and deficit countries as export sectors attract relatively high-skilled workers in skill-poor countries, while import-competing sector drives out low-skilled workers in skill-rich countries (Crino & Epifani, 2014). Imbs (2004) shows the similar patterns in a setting of simultaneous relationship among financial integration, trade integration, specialization and real co-movements. Bordo and Rousseau (2011) show that finance-trade-growth nexus changes historically for 17 countries for the last more than 100 years.

Understanding the multilateral interconnectedness of countries and the channels how globalization affects economic growth, trade and financial integrations are keys for sensible economic policies. In general, good understanding of the role of information and incentive of people in the society is critical for policy and regulation implementations. People use price system as a mechanism for communicating information, and decision makers have natural incentives seeking best ways of utilizing knowledge initially dispersed among all the people (Hayek, 1945). In other words, information promotes the efficient allocation of investment, which leads to economic growth. In addition, regulators should acknowledge that good intended goals and objectives oftentimes result in unintended consequences and effects as peoples pursue diverse interests.

Critical review of current literature investigates and synthesizes current literature that discusses the effects of globalization — trade and financial integrations — on economic growth, employment and wages, and other business and economic activities. Second, the literature dealing with technology and human capital are intensively reviewed to garner policy measures and its implications. Third, the papers dealing with specific measures related to employments are contrasted to help development of policies and regulations.

3. Globalization and Employment

Globalization encourages global competition in business activities and enhances interconnectedness of countries and agents. Research on the effects of globalization is meaningful when the study compares and contrasts globalization effects relative to countries in autarky. While globalization promotes economic growth, the benefits and costs are not uniform across countries, and across industry segments and different group of workers. There are diverse channels, through which globalization enhances economic benefits or hurts certain economic sectors and agents. The asymmetric and unbalanced effects on economic agents create challenges to academics and policy makers how to balance the ill and beneficial consequences of globalization.

Globalization eliminates friction on capital flows equalizing the marginal rate of return on capital across countries more directly. On the other hand, the marginal rate of return on labor and wages are likely to remain widely divergent globally, as the movement of labor is prohibitive across sovereign nation states. Even in the same country, regional movement of labor is still limited as workers have home bias, as workers seek comfort of home, tangible and intangible moving costs. Because of the stickiness of labor mobility, we have to consider the effect of globalization by first, investigating the historical and pre-existing industry structure and employment, and second, analyzing the effect of globalization on local employment in general and young workers' employment in particular.

Research of globalization on employment of young workers focus on the human capital and technology diffusion across countries. On the other hand, financial and trade integration are relevant in growth synchronization partly through sector specialization. In this respect, the impact of globalization on employment has to consider not only the technology spillover in general, but also, more importantly, the fact that technology and sector specialization is endogenously determined. The comparative advantage of a sector is a function of existing resource endowment, and at the same time, promotion of technology innovations makes certain sectors to obtain and retain comparative advantage.

3.1 Effect of Globalization on Employment

McMillan and Rodrik (2011) show that inter-sectoral productivity gaps are clearly a feature of underdevelopment. The support the argument that show that, while Asian countries have tended to experience productivity-enhancing structural change, both Latin America and Africa have experienced productivity-reducing structural change. In addition, they show that since 1990 structural change has been growth reducing in both Africa and Latin America, with the most striking changes taking place in Latin America. The bulk of the difference between these countries' productivity performance and that of Asia is accounted for by differences in the pattern of structural change — with labor moving from low- to high-productivity sectors in Asia, but in the opposite direction in Latin America and Africa. In our empirical work, we identify three factors that help determine whether (and the extent to which) structural change contributes to overall productivity growth. In countries with a relatively large share of natural resources in exports, structural change has typically been growth reducing. Even though these "enclave" sectors usually operate at very high productivity, they cannot absorb the surplus labor from agriculture.

3.2 Globalization and Technology

Goos, Manning, and Salomons (2014) document job polarization in 16 European countries for a sample period of 1993-2000. They show that the employment share (weekly hours worked/persons employed), in three occupation groups of high, middling and low paying groups: total, within and across occupations groups,

employment increases in both high and low paying occupation groups, and middling occupation's share declines. They suggest "Skill-Biased Technological Change" hypothesis (SBTC) to explain the polarization. They attribute the loss of middling group to the recent technological changes in the routine-biased technological change (RBTC) and task-offshoring. The measure of the routineness of an occupation is the Routine Task Intensity (RTI) index — three measures of offshorability: one self-reported, one a combination of self-reported questions made internally consistent, and the last one which is based on professional coders' assessment of the ease with which each occupation could potentially be offshored.

In the same vein, Crino and Epifani (2014) show that globalization cum trade imbalances increases wage inequality between skill rich (north) and skill poor (south) countries through the channel of skill differences. Trade imbalance and FDI is skill-biased, i.e., increase in the Southern (Northern) trade surplus (deficit) to raise the average skill intensity of exports and wage inequality in both regions. This distributional implications of globalization cum imbalances arise because trade balance the skill intensity globally, i.e., shift of less skill intensive industries than North average in the North to the South raise the average skill intensity of the South. The shift of skill intensity through trade channel increase wage inequity in both regions (Figure 2).

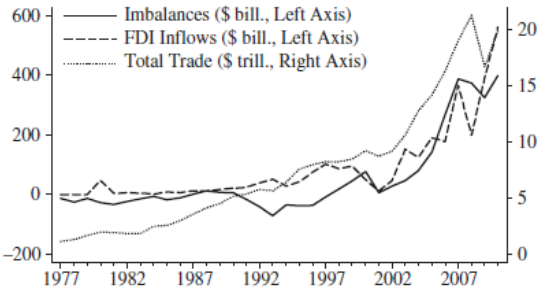

Figure 2 Trade, FDI and Imbalances

Note: The solid line is the Southern manufacturing trade surplus. The dashed line represents net FDI inflows to the South. The dotted line is total world trade (manufacturing exports plus imports). The South consists of 71 countries classified as low or middle-income by the World Bank. Source: Feenstra et al. (2005), UNCTAD, UN Comtrade and World Development Indicators.

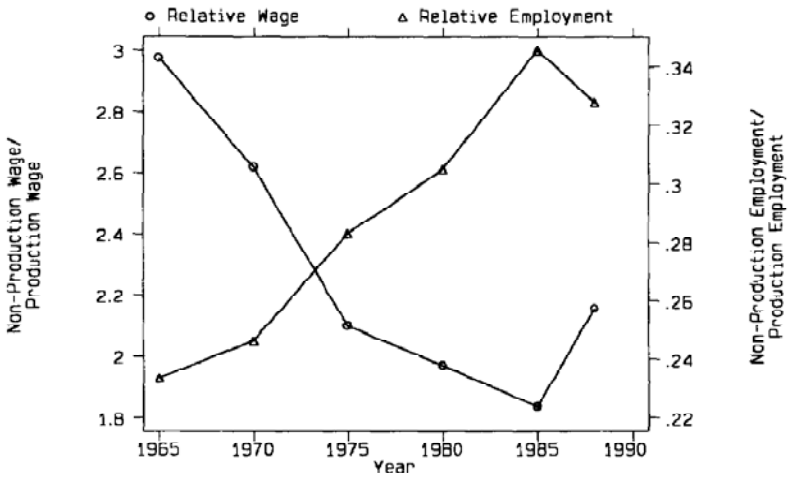

Figure 3 Relative Wages and Employment in Mexican Manufacturing

Note: We use non-production workers to identify skilled labor and production workers to identify unskilled labor. While there are problems with this classification (Leamer, 1994), there is evidence that in practice it successfully tracks employment and wages by skill category (Berman et al., 1994; Sachs & Shatz, 1994)

Feenstra & Hanson (1997) show that, in regions where FDI has concentrated, growth in FDI can account for over 50 percent of the increase in the skilled labor wage share that occurred in the late 1980s. They show the skill shift in Mexico as FDI into Mexico increases during the sample period 1965-1990. The data shows that, in the regions where FDI was most concentrated, growth in FDI can account for over 50 percent of the increase in the share of skilled labor in total wages that occurred during the late 1980s (Figure 3).

Grossman and Helpman (2015) show that international flows of knowledge promotes growth, and show the various channels how knowledge spillover occurs through the channels of trade, FDI and other mechanism across countries. They compare the characteristic of physical capital and knowledge or human capital. The accumulation of physical capital faster than the rate of population shows diminishing returns. As the marginal product of capital reaches below a threshold, the incentives for ongoing investment vanish. On the other hand, knowledge is different from physical capital: knowledge is often non-rivalrous, i.e., its use by one person or firm in some applications does not preclude its simultaneous or subsequent use by others.

They use the accumulation of knowledge as an integral part of "technology" or "human capital". Grossman and Helpman (2015) show evidences of substantial international knowledge spillovers through trade. FDI and others: integration of peoples and cultures by people contact through conference, trade fair and other meetings; integration of product markets via international trade with scale and competition effect; integration of world markets has general-equilibrium implications for input prices and relative output prices. Various exchange of ideas and knowledge engender incentives for creation of new knowledge, and incentives for technological diffusion, and specialization in the creation of knowledge. However the impact on country growth thru technology spillover benefits countries with greater relative endowment of human capital — or the one that has the best educational system, and labor abundant countries. Ultimately the benefits from technology transfer and beneficial effect on growth depends on knowledge accumulation which depends on fundamental characteristics of a country, including its factor and resource endowments and its history. In that context, the cost function for searching for new technologies is part of the cost that determines trade.

3.3 Trade and Employment

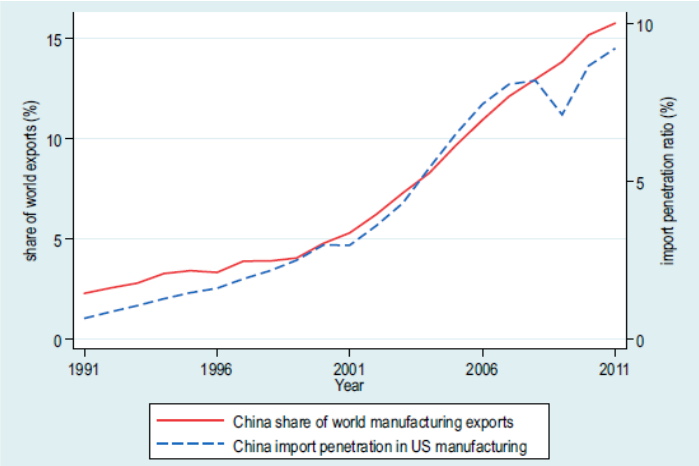

Figure 4 China Share of World Manufacturing Exports and China Import Penetration in U.S. Manufacturing, 1991-2011

Autor et al. (2014) analyze the effect of exposure to import competition on earnings and employment of U.S. workers over 1992 through 2007. They show, in the US, import shocks impose substantial labor adjustment costs

that are highly unevenly distributed across workers according to their skill levels and conditions of employment in the pre-shock period. Earnings losses are larger for individuals with low initial wages, low initial tenure, and low attachment to the labor force. As a results of import competition stemming from China's spectacular rise as a manufacturing exporter (Figure 4).

4. Production of Human Capital

Lucas (2015) emphasizes the contribution of human capital accumulation to economic growth, asserts that growth rate depends on 1) a measure of individual efforts to improve productivity and 2) as a measure of the quality of the individual's intellectual environment. The nature of human capital is such that it is a continuous accumulation process from networks of various connections: teachers, colleagues, competitors, and others in any person's development. In addition, the higher the skill levels of those with whom we interact the more we can learn. He advocates the separate analysis of study human capital production, as it is an integral factor in growth. In the Figure 5, dotted line is based on a theoretical example of an economy in which human capital accumulation is the only engine of growth and completely accounts for observed output growth and earnings (Lucas, 2015).

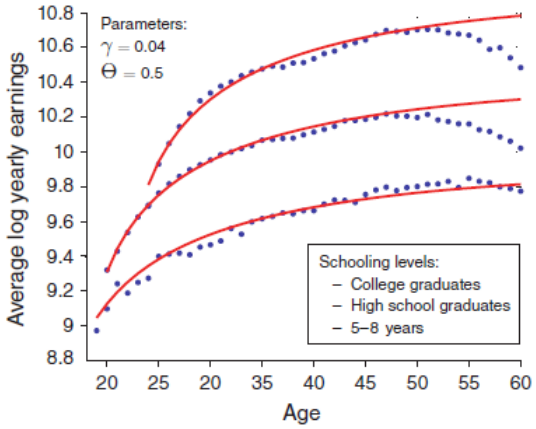

Figure 5 US Age-earnings Profile: 1900 Census

Manuelli and Seshadri (2014) developed detailed of human capital production in their study of age-earnings profile across countries. Their premise is that human capital has a central role in determining the wealth of nations and that the quality of human capital varies systematically with the level of development. Their calibration of the model shows that a large fraction of the cross-country differences in output are due to differences in the quality of human capital. It is worthwhile to discuss their model, as the study of human capital production shed light in the study of age profile of employment and earnings.

Manuelli and Seshadri (2014) emphasize the productivity or human capital in addition to the physical capital and labor in output and consumer goods production. Disregarding the physical capital in their model, output per worker or total factor productivity(TFP) and wage rate are function of the stock (quantity) of human capital (length of schooling) and the quality of human capital. Production (accumulation) of human capital is individual decision in maximizing the PV of net income based on the human capital accumulation technology. They consider following factors in determining the accumulation of human capital: innate ability and initial endowment of human capital, experience, schooling period, OTJ training period and demographics. Human capital production is a function of the investment in early childhood (e.g., medical care, nutrition, development of learning skills, etc.)

as a key input in the human capital production. The model also considers the endogeneity of TFP, i.e., the feedback of the changes in TFP (market wages) on the equilibrium choice of schooling through the changes in market goods in producing human capital. Level of innate ability (early human capital) is a function of (wage rate (TFP), prices of input necessary to produce it, and the cost of OJT. The results of the modeling is that, with initial differences (in the level of innate ability), the choice of schooling is determined endogenously with TFP and wage rate.

Due to the endogeneity of TFP and investment in early human capital, output per worker depends on "average" human capital in the economy and its distribution across sectors, age distribution of population (demographics). Other related factors are fertility rate (growth rate of population), life expectancy and retirement age. Consequently, schooling and the earnings profile are endogenous, as the human capital accumulation decisions are function of TFP and demography through the choice of early capital accumulation that requires investment of human capital (input goods), in an economy with two sectors — aggregate goods (consumption goods) and schooling goods. The human capital acquisition technology explains the difference of age earnings profile between rich and poor countries, i.e., demographics of young population in poor countries and less investment in early childhood technology.

Manuelli and Seshadri (2014) argue that productivity differences between rich and poor countries are main reason of the age earnings profile difference, as the typical individual in a poor country not only chooses to acquire fewer years of schooling but also acquires less human capital per year of schooling. As a result, modest increases in productivity can result in large gains in output per worker in the long run. Policy implication for poor countries is to increase in the investment in early childhood accumulation by adjusting the price of schooling good and other measures for early childhood such as medical care, nutrition, development of learning skills, etc. In other words, improvement in the life of early childhood has exponentially beneficial effects on the individual career.

Jovanovic (2014) also emphasize the child's cognitive skills in explaining the intergenerational inequality in wage of young and old. He shows that the ratio of child's cognitive skills to the sum of child and parent's cognitive skills is .91. The skill production is partnership production of young and old agents, and as such, firm's hiring and assignment and matching workers and jobs relies on public signal-to-noise ratio. As the distributions of quality and skills is noisy and due to the market failure of private information, firms use public signal of old agents that train young workers. Firms in the decision of hiring and assignment of young workers depend on public signal for the innate abilities. The imperfect signal explains the hiring difference across countries. Japan's growth miracle is a shift in the hiring system away from one based on connections, and towards one based on merit. In Europe, the public university system probably yields a lower signal-to-noise ratio (more noise) than in the United States (less noise), where a degree from a top university carries a lot more weight.

Beaudry, Green, and Sand (2014) consider the cognitive skills to explain the polarization of wages and employment. Using US survey, 1990-2012, they find the flattening of profiles for wages and the proportion in cognitive occupations after 2000.

They classify population into 4 broad groups (occupations): Cognitive (occupations with a high intensity of abstract thinking tasks that are often viewed as complementary to capital and organizational forms embedding information technology (IT)); Routine Production (blue-collar occupations intensive in routine tasks that can be easily substituted for by IT); Routine Clerical (white-collar occupations intensive in routine tasks); and Services (service and manual occupations that tend to be low-skilled but not easily substituted for with IT). The graph

cognitive employment profile/wage profile of college/post-college entry-cohort, and shows the declining demand for cognitive task occupations after 2000 (Figure 6).

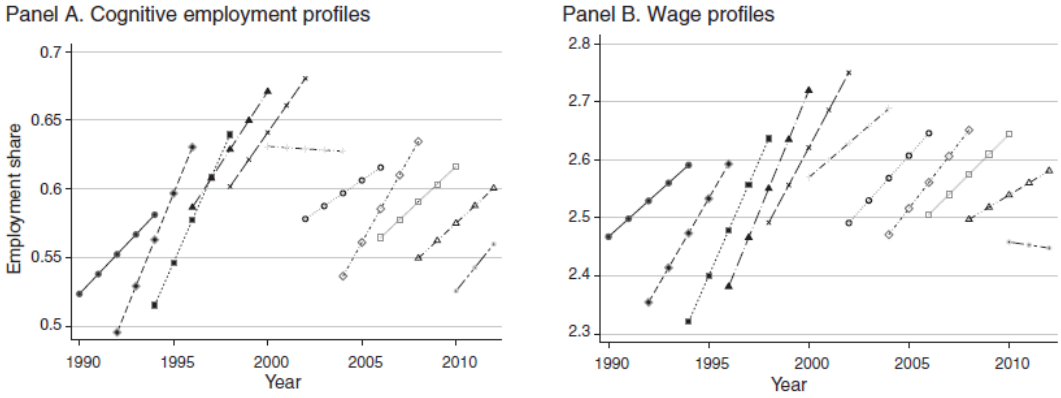

Figure 6 Cognitive Employment and Wage Profiles for Exactly College Workers

Note: Smoothed cognitive employment share and median-wage profiles by job-entry for workers with exactly college education. Each line corresponds to a different cohort. Lines start at the first of the two years defining the cohort.

5. Firms: Hiring and Financing Friction and Ownership of Organization Capital

Midrigan and Xu (2014) shows financial frictions, ability of borrowing and issuing equity for traditional and modern sector, does not generate large total factor productivity (TFP losses, but there are sizable TFP losses as financial frictions deter entry of traditional sector into modern sector, and technology adoptions, ad these two entail long-lived investments that pay off gradually over time and difficult to financing from internal funds. The TFP loss is smaller in an open economy than in closed economy, showing that well-developed and integrated financial markets are critical for producers to adopt efficient levels of entry and technology adoption. Their results hold when two sectors are reinterpreted by different occupations, implying that endowment and financial constraints of young workers are critical in raising efficacy and TFP for the economy.

5.1 Ownership of Organization Capital

Intangible capital covers wide range of categories and encompasses similar items-R&D, brands, and organizational know-how, knowledge. Intangible investments are mainly investments in innovation, as they encompass investment in new products and processes, including organizational development. It is termed as knowledge capital, and technology capital is the stock of knowledge arising from past investments in R&D (McGrattan & Prescott, 2009, 2010). In general, organization capital is used as a grab-all concepts covering all aspects of intangible capital. Unique feature of organization capital is that it is partially non-rival and a source of market power (Romer, 1990), and is partly firm-specific and embodied in the firm's key employees and talent As such, the ownership of organizational capital belongs to the key talent, and both shareholders and key talent have claims on cash flows (Eisfeldt & Papanikolaou, 2013). They decompose the value of firm into (1) value of physical capital where shareholders have full ownership, and (2) value of organization capital, where key talents have ownership and control, and shareholders' ability to extract rents is limited because of the outside side option held by key talents. The sharing rule between financiers and key talent incur systemic risk as there are frontier technology shocks that shareholders have to bear fully. The value of organization capital increase in both the level of organization efficiency in the existing firm and the level of frontier technology. The risk of frontier technology shock is an additional risk factor based on the ratio of organization capital to physical capital. Empirical measure

of organization capital is characterized as intangible, specific and closely tied to labor inputs. The measures are used in the empirical calibration is SG&A expenditure. Reflecting systematic risk from organization capital, the risk of key talents leaving the firm, they find that the firms with more organization capital have average returns that are 4.6% higher than\m with less organization capital (Eisfeldt & Papanikolaou, 2013).

5.2 Labor Mobility and Ownership of Human Capital

Donangelo (2014) find that firms in industries with high labor mobility (LM) earn returns over 5% higher than those in less mobile industries, as investors demand higher expected stock returns for holding high-LM stocks relative to low-LM stocks. LM is the flexibility workers have to move across industries, and LM is determined mainly by the level of specificity of labor skills and that occupational standing captures significant differences in labor skills across workers. Similar to key talent in Eisfeldt and Papanikolaou (2013), LM allows workers to decide on supply of labor that will affect firm's value and firm risk from industry shocks. The mechanism how LM affects firm values is similar to the case of ownership of key talents. Labor mobility is the flexibility of workers to walk away from an industry in response to better opportunities. LM is high for workers with less industry-specific labor skills (e.g., salespersons, operations managers, and computer analysts.

Firms offer higher wages to keep high LM workers to keep them from switching employment. When there are industry shocks, since the wages for high LM workers are fixed costs, employment decision by high LM workers affect firm risk, as a result, investors in forms with high LM workers demand higher expected returns. Profits are more sensitive and wages less sensitive to industry shocks in mobile industries. The greater flexibility to move for workers in mobile industries makes wages less sensitive to industry shocks and leads to a labor-induced form of operating leverage, that is, profits more sensitive to industry shocks. Moreover, the model predicts that mobile industries' employment growth is more sensitive to industry shocks. In other words, positive industry shocks prompt mobile workers to move into the industry with positive shocks.

5.3 Firm's Hiring Decision

Bazdresch, Belo, and Lin (2013) show that hiring decisions are forward looking and potentially informative about the firm's future value. A 10 percentage point increase in the firm's current hiring rate is associated with a decrease of 1.5 percentage points in the firm's annual future stock return. Portfolio sorts — a long low hiring/short high-hiring firm's portfolio — earns an average annual excess stock return of 5.6 percent with value weighted portfolio to 10.4 percent with equal weighted portfolio. The hiring return spread is a result of the adjustment cost shock. They explain the negative relation between firms' hiring rates and risk premiums using the investment-based asset pricing model that treats a firm's labor hiring decision as analogous to an investment decision. Aggregate productivity shock carries a positive price of risk for all firms, while the adjustment cost shock carries a negative price of risk. The labor adjustment costs include training and screening of new workers, advertising of job positions, disruption costs output that is lost through time taken to readjust the schedule and pattern of production, and separation costs, e.g., severance pay. Positive labor adjustment cost shock can occur with an increase in the relative supply of new workers searching for a job because this increase makes it easier and hence less costly for firms to find new workers in the presence of search frictions.

5.4 Employment and Business Cycle

Growing body of evidence suggests that recessions have vastly different impacts on workers over the long run, depending on what stage of their career the recession hits them in. First, labor market conditions at the beginning of a worker's career have long-lasting scarring effects (Kahn, 2010; Oreopoulos, von Wachter & Heisz, 2012; Altonji, Kahn & Speer, 2013). Second, the consequences of job displacement have been shown to be much

larger when displacement occurs in a recession (Davis & von Wachter, 2011). It therefore seems that being forced to search and match during an economic downturn can be incredibly damaging to a worker's career.

Kahn and McEntarfer (2014) show that high-paying firms grow more quickly in booms and shrink more quickly in busts. Jobs at low-paying firms become stickier in recessions, relative to jobs at high-paying firms. Job composition can potentially account for some of the lasting negative labor market impacts on workers forced to search for a job in a downturn. Net employment growth at high-paying establishments is more responsive to the business cycle than that of low-paying establishments, both in levels and in percent changes. This effect is symmetric across booms, when high-paying establishments grow more quickly, and busts, when they shrink more quickly than low-paying establishments

Worker sorting across firms has long been thought to play a central role in labor market efficiency. Workers flock to low-paying firms in times of high unemployment is counter to intuition that recessions have a cleansing effect. Fort, Haltiwanger, Jarmin and Miranda (2012) analyze firm growth over the business cycle as a function of firm age and size, using U.S. data. They find that small, young, firms typically fare relatively better in cyclical contractions, although this relationship reversed in the 2007-2009 recession. Firm size effect is also prominent. Only about 0.3% of US firms have over 500 employees, those large companies account for half of employment. More than 90% of all firms in the U.S. have fewer than ninety-nine employees, and they comprised roughly 35% of aggregate paid employment. Figure 7 shows that when the unemployment rate increases, small firms grow relative to large firms, and vice versa when the unemployment rate decreases.

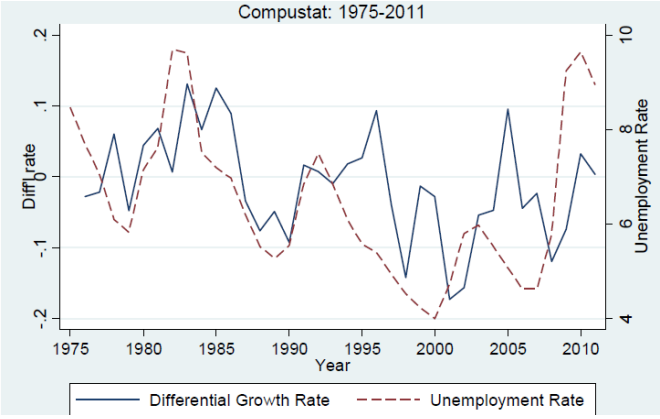

Figure 7 Differential Growth Rates for Big and Small Firms

Monacelli, Quadrini and Trigari (2011), based on credit constraints hypothesis, have similar results: workers in small firms are more likely to become unemployed during the 2007-09 financial crisis if they work in industries with high external financing needs. More than 90% of all firms in the U.S. have fewer than ninety-nine employees, and they comprised roughly 35% of aggregate paid employment (Figure 8).

Gourio and Rudanko (2014) show that a positive productivity shock increase output and increases marginal product of labor of firms (B), and increases total labor (production labor + sales labor) employment, increasing marginal rate of substitution of households (A). However the sales labor constrains the output growth, as it takes time to build up customer base, and empirically the labor wedge (A/B) increases initially, showing countercyclical and volatile measure of labor wedge. Production needs physical capital and intangible capital (customer capital) which is the capital embodied in the relationships a firm has with its customers. In the production function, customer capital is complementary with physical capital, as output and sales require selling efforts (advertising,

here number of employees engaged in building new customer relationships (corresponding to investment into customer capital), and they measure the sales labor by labor in a group (4 categories) of “sales-related occupations” (SRO) (Figure 9).

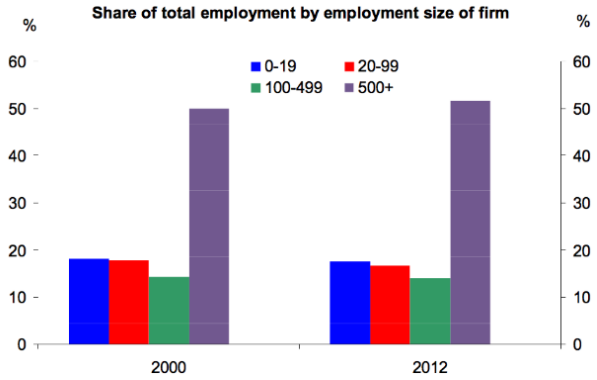

Figure 8 Samll and Medium-sized Businesses Account for 50% of Total Employment in the U.S. Economy

Source: Census, DB Global Markets Research

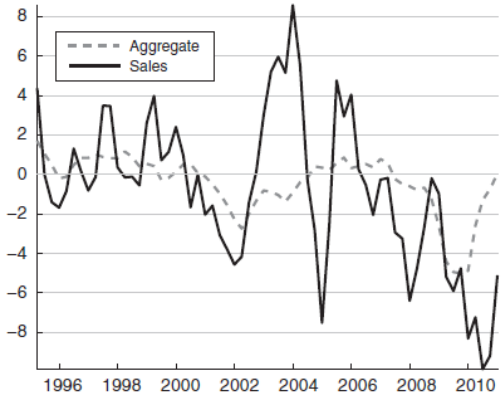

Figure 9 Annual Percentage Growth Rate of Aggregate and Sales Employment

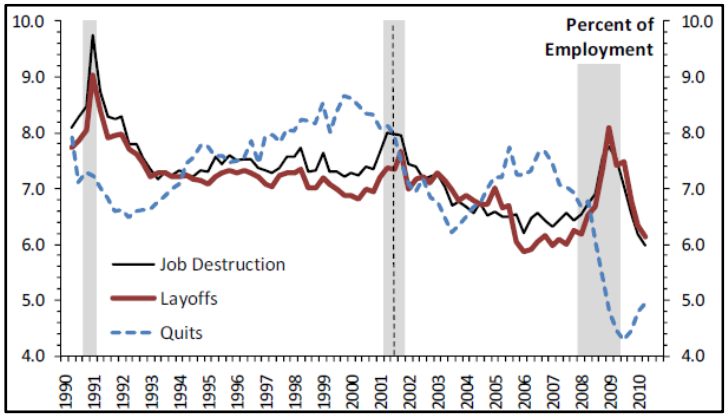

Figure 10 Quits, Layoffs and Job Destruction

Source: Quit and layoff rates (2001Q3-2010Q2) are authors’ calculations using JOLTS establishment microdata weighted to an aggregate value for each quarter using growth rate densities from the BED. Job destruction rates (1990Q2-2010Q2) are authors’ tabulations directly from the BED data. All estimates are seasonally adjusted. All rates are percentages of employment. Backcasted estimates of the quit and layoff rates are included to the left of the dashed vertical line.

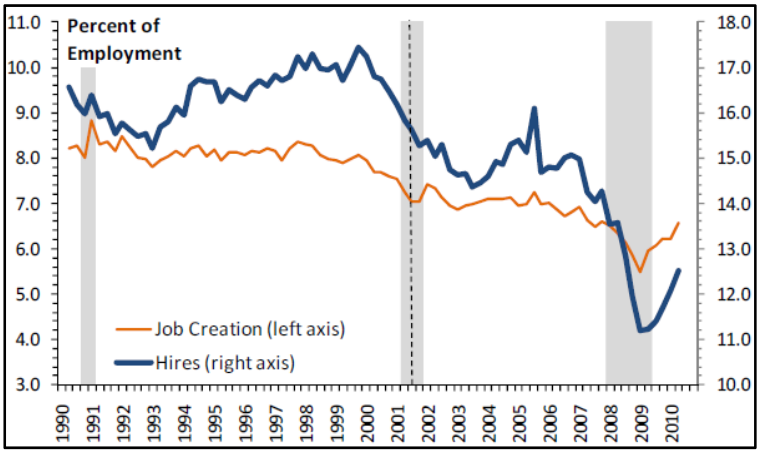

Figure 11 Hiring and Job Creation

Sources: Hiring rates ((2001Q3-2010Q2) are authors' calculations using JOLTS establishment microdata weighted to an aggregate value for each quarter using growth rate densities from the BED. Job creation (1990Q2-2010Q2) rates are authors' tabulations directly from the BED data. All estimates are seasonally adjusted. All rates are percentages of employment. Backcasted estimates of the hiring rate are included to the left of the dashed vertical line.

Steven et al. (2011) find powerful, highly nonlinear relationships of worker flows to employer growth rates in the cross section. The layoff relation, in particular, exhibits considerable stability over time. They explain the results by some forces including learning about match quality and the need for replacement hires, on-the-job search, an abandon-ship effect that yields higher quit rates at struggling employers, and strongly pro-cyclical movements in quit rates even after conditioning on the employer's growth rate.

6. Employment Policies

Emerging and developing economies implemented a host of countercyclical labor market policies amid the global financial crisis (Figure 11). Epstein and Shapiro (2014) examines the improvements in job intermediation for employment among large firms is the most effective policy tool, followed by hiring subsidies for large firms and existing small firms. Wage subsidies yield very small (or even negative) output and employment multipliers and appear to be the least effective out of the set of policies considered. Hiring subsidies and job intermediation services for large firms are particularly effective in aiding recoveries. Policies targeting smaller firms yield limited aggregate benefits and may even be detrimental to the recovery process. The labor market structure shapes sectoral allocation and explains the economy's deferential response to policy. Temporary wage and hiring subsidies, the temporary expansion of job intermediation services, and the expansion of public expenditures to support the creation of micro and small firms via credit facilities, among others (Table 2) (Epstein & Shapiro, 2014).

Hiring subsidies for large firms and improved intermediation between large firms and the unemployed during downturns can yield gains across the board: a reduction in aggregate volatility, an acceleration in the rebound of total output and consumption, a smaller contraction in labor earnings, a lower rise in unemployment, lower unemployment persistence after a recession, and employment and output multipliers above 1 in the medium term. They warned that fostering the creation of self-employed firms during downturns can be detrimental for the recovery process and the economy as a whole, even as these firms may ultimately lead to future salaried employment creation. This last result is particularly important in light of the policies that many emerging

countries implemented to support the creation of micro and small enterprises.

Table 1 Percent of Low- and Middle-Income Countries that Implemented Labor Demand and Job Matching Policies

Type of policy	Percent of countries
Direct job creation and employment incentives	80
Credit facilities, assess to credit	65
Lower non-wage labor costs, other taxes	58
Public employment services	53
Special measures for small and medium enterprises	49
Subsidies for job creation	44

Note: The sample of low- and middle-income economies includes 55 countries. 58 percent of the country sample introduced training for the unemployed.
Source: Figures 10 and 14, ILO and World Bank (2012).

Table 2 Allocation of Expenditures, Labor Demand and Job Matching Policies: Low- and Middle-Income Countries

Labor demand policies	Budget Allocation within policy category (percent)
Direct job creation and employment incentives	66.95
Subsidies to employers maintaining existing jobs	14.54
Credit facilities, access to credit	12.97
special measures for small and medium enterprises	3.04
Programs that improve job matching skills	Budget Allocation within policy category (percent)
Public employment services	43
Training for unemployed	31
Training for employed	20

Note: The sample of low- and middle-income economies includes 55 countries. Subsidies to employers maintaining jobs include wage subsidies.
Source: Figures 11 and 15, ILO and World Bank (2012).

The general argument on public policy by Tirole (2015) can be applied I this case. Based on the theory of industrial organization, she emphasizes that policy makers have to understand the firm's business model and their incentives and firm's strategy. While regulators aims are to protect consumers in a fair, reasonable, non-discriminatory (FRAND) way, its effectiveness depends on the market power, efficiency, and intervention methods. There are information asymmetry between firms and regulators. Firms' information superiority create adverse selection and moral hazard. Effective policy should be based on sound economic analysis and reason, and instead of general policy, public policy is better when it is implemented case by case "rule of reason" (vs "per se") and specificity of each regulations. For economic growth and employment, Chari and Henry (2014) suggest long-term and continual improvement with discipline. Discipline is a sustained commitment to a pragmatic growth strategy executed with a combination of temperance, vigilance, and flexibility that values the long-term prosperity of all over the short-term enrichment of any single group. They suggest that developing countries' second-stage reforms are required in key areas (e.g., infrastructure and labor markets) to maintain their high rates of catch-up growth.

7. Conclusion

Employment and growth are closely linked with globalization of financial markets, trade and technology

diffusion. While globalization of both financial markets and output goods increases countries economic well-being, the effect on the country is not uniform but differential on industries, types of jobs and occupations, and firms. At the same time, global shocks, real and financial, have either positive or negative implications to the countries, and the volatility of economy activities. Financial crisis of 2008 highlights the real effect of financial crisis, and the employment of young workers. The approach of the problems of employment by considering the network of connected issues and problems is a comprehensive approach for the particular issues.

One of the key issues in dealing with (un)employment is to consider it as a production of human capital. Unlike other factors of production, the production of human capital takes a generation, from early childhood development of cognitive skills to the on-the-job training, and continues after employment. As such, it requires long-term planning from both households (workers) and policy makers. For public policy makers, it needs long-term plan-education, fertility, retirement, early childhood development and schooling, and continues human capital acquisitions. I suggest courtiers implement long term plan like repeated 5-year plans that are separately managed from political changes. At the same time, human capital production and acquisition needs to be initiated by workers themselves, by giving them ownership of human capital. Public policies providing an environment to give right incentives to households in producing and acquiring human capital with discipline and a sense of ownership are the basis of any sensible measures.

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