

Has globalization triggered collective impact of national intelligence on economic growth?



Nik Ahmad Sufian Burhan ^{a,*}, Abdul Halim Sidek ^{b,c}, Yohan Kurniawan ^a, Mohd Rosli Mohamad ^d

^a Department of Human Sciences, Centre for Language Studies and Generic Development, Universiti Malaysia Kelantan, 16100 Kota Bharu, Malaysia

^b Legal and Governance Division, Universiti Malaysia Kelantan, 16100 Kota Bharu, Malaysia

^c Politics, Security and International Affairs Cluster, National Council of Professors (Majlis Profesor Negara, MPN), Prime Minister's Department, 62200 Putrajaya, Malaysia

^d Office of the Dean, Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, 16100 Kota Bharu, Malaysia

ARTICLE INFO

Article history:

Received 28 April 2014

Received in revised form 3 November 2014

Accepted 3 November 2014

Available online 14 November 2014

Keywords:

National IQ

Collective IQ

Economic growth

Globalization

Positive assortative matching

ABSTRACT

Previous studies found that the impact of intelligence (IQ) on productivity is larger at a country level than at an individual level. Labor works in clusters at the country level, and therefore, the effect of individual skill complementarities collectively magnifies per capita income at the national level, which is consistent with the O-ring theory of economic development. The main feature of the O-ring theory is positive assortative matching, in which individuals can augment productivity per capita when they team up with other individuals with equivalent levels of skills. We investigated whether global integration would intensify this impact owing to global interconnectivity of skills and intellectual ideas. By extending the O-ring theory, we examined the role of economic globalization (i.e., actual flows and restrictions), social globalization (i.e., personal contact, information flows, and cultural proximity), and political globalization in moderating the impact of national IQ on the economic growth of more than 110 countries during 1970–2010. The results of our hierarchical multiple regressions suggest that IQ rather than economic, political, or social globalization has the strongest impact on economic growth. Moreover, moderation analysis revealed that globalization has reduced the impact of national IQ on economic growth at the cross-country level. We suggest that within the context of globalization, friction was present in the matching market and cognitive skill-sorting inefficiencies, which reduced the collective impact of IQ on economic growth.

© 2014 Elsevier Inc. All rights reserved.

1. Introduction

Previous studies have been concerned with the direct impact on economic growth of national average intelligence (IQ), that is, cognitive ability and skills. The studies have concluded that countries with higher IQs generate higher productivity than countries with lower IQs (e.g., Burhan, Mohamad, Kurniawan, & Sidek, 2014a; Jones & Schneider,

2006; Lynn & Vanhanen, 2002, 2006, 2012; Meisenberg, 2012; Rindermann, 2012; Rindermann & Thompson, 2011; Weede & Kämpf, 2002). As the IQ–productivity relationship is robust, some other recent studies have established that it is possible to increase per capita national income by raising the impact of IQ on productivity through the O-ring effect of skill complementarities. Accordingly, with diverse levels of IQ distributed within a country, when individual laborers with equivalent levels of cognitive skills work in groups, they are inclined to cooperate through positive assortative matching, resulting in magnified per capita productivity (Jones, 2011a,b, 2013; Kremer, 1993). For this reason, the impact of IQ on productivity is larger at the cross-country level than at the individual level (e.g., Hanushek & Kimko, 2000; Jones & Schneider, 2010).

* Corresponding author. Tel.: +60 194601530.

E-mail addresses: nikahmadsufian@yahoo.com (N.A.S. Burhan), abdulhalim@umk.edu.my (A.H. Sidek), yohan@umk.edu.my (Y. Kurniawan), mrosli@umk.edu.my (M.R. Mohamad).

Assortative matching occurs naturally in humans.¹ Arcand and Fafchamps (2012) found positive assortative matching in social attributes, such as proximity between ethnicity and wealth among affiliates in community-based organizations at the cross-country level. Positive assortative matching implies that the probability of success between two partners is positively correlated (Gavrilova, 2014). The idea of assortative matching in productivity was proposed by Shapley and Shubik (1971) and Becker (1973), in which firms are inclined to match the highest ability of individuals to the most sophisticated and highest paying ventures (Abowd, Kramarz, & Margolis, 1999). Becker (1973) and Pencavel (1998) focused on marriage markets and established that in a household production, it is optimum to pair men and women with similar traits. In a labor market within an industry, such positive assortative matching corresponds to matching highly skilled agents with firms that employ the most sophisticated technology (Albrecht & Vroman, 2002). In addition, with numerous types of agents, the market performs a sorting function, where agents have manifold chances to pair with their complementary peers (Damiano, Li, & Suen, 2005). In academia, for example, co-authorships are organized by teaming up with a partner who is comparatively good at publishing articles, hence, producing a trend of positive assortative matching (Gavrilova, 2014). This is consistent with Bagues and Perez-Villadoniga (2012), who showed that in a natural experiment, recruiters favor candidates who are equivalent to their own assortment of skills to work together as a team. Since the assortative matching occurs only through cognitive ability, in the labor market, a worker lacking social skills but possessing excellent cognitive ability may nonetheless have a high wage (McCann, Shi, Siow, & Wolthoff, 2012). At a global level, the O-ring effect of assortative matching of skills has taken place among firms of different countries. For example, Davidson, Matusz, and Shevchenko (2008), Davidson, Heyman, Matusz, Sjöholm, and Zhu (2012; 2014), and Helpman, Itskhoki, and Redding (2010) found that robust empirical evidence that increased openness to international trade improves the positive assortative matching of skills in productivity, especially in industries with a greater comparative advantage. This shows that globalization may enhance the effectiveness of positive assortative matching practices in the labor market.

¹ Positive assortative matching theory is comparable with “assortative mating” in population genetics, that is, non-random mating patterns in which individuals with similar characteristics (genotypes and/or phenotypes) tend to mate among each another more frequently than one would expect with random mating (disassortative mating), thereby raising the proportion of the same traits (homozygotes) (Raven, Johnson, Mason, Losos, & Singer, 2011, pp. 401–402). Assortative mating strengthens the mating bond to increase fertility and raises genetic relatedness, which assists communication and altruism, thereby increasing the total fitness of a family unit to ensure stability in predictable environments (Wolf & Figueredo, 2011). Assortative mating in human beings includes such factors as physical traits, education, intelligence, religious beliefs, socioeconomic status, and political ideology (Bouchard & McGue, 1981; Escorial & Martín-Buro, 2012; Huber & Fieder, 2011; Kail & Cavanaugh, 2013, pp. 294; Wilson, 2000, pp. 80). A recent study on the US census data by Greenwood, Guner, Kocharkov, and Santos (2014) found a rise in assortative mating in which the percentage of university graduates who married each other increased from 25% in 1960 to 48% in 2005. This produced a divergence between highly educated and less educated groups, thus, magnifying the Gini coefficient of household income inequality from .34 to .43 (Greenwood et al., 2014). We suggest that this magnification effect is because of the O-ring effect of education on income.

Almost all previous works assumed that firms within an industry are identical and labor markets are competitive; thus, they were concerned with sorting labor at the cross-sectoral level in order for sorting to be effective (Davidson et al., 2012). By extending the O-ring effect, our study analyzes the role of globalization in moderating the impact of IQ on productivity at the cross-country level. We question whether globalization has magnified the impact of national IQ on economic growth in previous decades. Through globalization in particular, national societies may encounter larger frameworks for economic freedom and be exposed to a more prolific network of complementary choices of ideas and skills. Through knowledge sharing across borders (Brown, Lauder, & Ashton, 2008), countries that open up their economic, social, and political frontiers will allow these complementary agents with similar levels of cognitive skills to collaborate through positive assortative matching, thus, enhancing collective IQ. Therefore, the O-ring theory should predict that globalization fosters collaboration between not only two high IQ agents, but also two low IQ agents. This is consistent with Albrecht and Vroman (2002) and Acemoglu (1999), that skill-biased technological change raises the productivity gap between high skill and low skill labor, thus amplifying the degree of positive assortative matching. In addition, a more globalized country would be exposed to positive externalities, with economic growth and innovation being dependent on knowledge spillover among agents (Lucas, 1988; Romer, 1986). This occurs between two countries when agents with sufficient levels of absorptive capacity of knowledge (e.g., cognitive ability) learn from agents with more experience (Audretsch & Feldman, 2004; Caloghirou, Kastelli, & Tsakanikas, 2004; Carlino, 2001; Cohen & Levinthal, 1989, 1990; Lagerström & Andersson, 2003; Stuetzer, Obschonka, Brixy, Sternberg, & Cantner, 2014; Zahra & George, 2002). This may occur not only as a result of face-to-face interaction between laborers but also through cultural activities and social networking, whereby economic and geographic clusters integrate social capital and link it to economic prosperity (Porter, 1998, pp. 227; Porter, 2000; Staber, 2007). Therefore, by extending the O-ring effect, we examine whether globalization has produced a collective impact of IQ on economic growth rates at a cross-country level (see Fig. 1), where economic growth centers on the interconnectivity of skills and intellectual ideas (Glaeser, 1996).

2. Globalization, IQ, and the O-ring theory of economic development

Hanushek and Kimko (2000) and Jones and Schneider (2010) revealed that cognitive ability is important more for groups than for individuals: a small difference in levels of cognitive ability causes a small difference between individuals' wages within a country but is related to a large and permanent

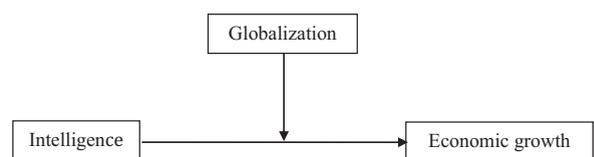


Fig. 1. The possible role of globalization in moderating the impact of national IQ on economic growth rates.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات