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Abstract

Along the path of economic development, advancement of some groups naturally generates economic disparity in a society. The concurrent presence of winners and losers invariably gives rise to the psychological economic question of how the losers perceive, and respond to, the benefits of development. The 'tunnel effect' proposed by Hirschman (1973) provides valuable insights for understanding the changing tolerance for economic inequality among the losers in the process of economic growth. This paper critically discusses this proposition, reviews the related literature, and provides possible extensions.

Key Words: Income Inequality; Tunnel Effect; Development

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1. Introduction

The process of economic development creates both winners and losers. In a seminal paper published in 1973, Hirschman discusses, in the early stage of development, the tendency of income inequality among the different classes, sectors, and regions rise, and why society continues to tolerate inequality (Hirschman, 1973). Even though Hirschman's paper has not received much attention in recent years, it provides valuable insights for the contemporary debate on increasing inequality both in and among countries as a result of the ongoing process of economic globalization. The purpose of the current paper is to summarize the key insights of his paper and to suggest some extensions about Hirschman's tunnel effect.

The key proposition of Hirschman's paper is that people become tolerant of income inequality provided they anticipate that the income gap will fall later, and otherwise will no longer stand for such inequality. Hirschman uses the analogy of a traffic jam in a two-lane tunnel to explain how people respond to inequality. Suppose, in a traffic jam, people are stuck in the left-lane and realize that no one cannot move for a while. Soon, they see that a car in the right lane start to move gradually. Although they cannot move now, they feel better off because of the positive attitude towards future movement in the right lane. This initial gratification is known as the 'tunnel effect'. However, at the end, if it is only the cars in the right lane that can move, people in the right lane feel discontent. They start being frustrated and think that it is

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unfair, and they want to do something to correct this injustice. Applying this illustration to an unequal society, it can lead to a social movement or protest. The government may need to use its coercive powers to restrict participation of social movement in such case and cease this social upheaval.

Hirschman describes several factors affecting the tunnel effect. He states that the tunnel effect will be strong if the group that does not advance (e.g., the group in the left-lane) can empathize with (i.e., understand the situation well of) the group that advances. Thus, two groups (people in the left-lane cars and right-lane cars) must not be divided by impassable barriers. In this case, class matters. If several different classes get involved in the same growth process, the tunnel effect will still operate despite uneven economic growth. In a segmented society, economic advance for one particular ethnic or language group, or one member of a particular religion, is not likely to bring the tunnel effect to those who are left behind. Stagnant people will be convinced at the beginning that this growth is unfair, and some groups of people will exploit them. They expect to get worse off, since the beginning, in terms of relative income. Consequently, a high degree of coercion in order to control political instability is relatively high in this case, compared to that in a fairly unitary society. In a homogeneous society where resources are owned domestically, tolerance for income inequality tends to be large because there is no language, ethnic, or other systematic barrier that can keep people experiencing stagnant growth from understanding the situation of better-off people. However, Hirschman suggests that this leads to a difficult result: “The greater the tolerance, the greater is the scope for the reversal that comes once the tunnel effect wears off” if inequality does not fall in time.

Lastly, Hirschman comments that in a society without the experience of sustained growth, when one group advances while another group remains constant, there are two possible

results. If available resources have not increased, group A will suffer as group B rises. If some windfall gains have expanded the total resources, group A will get a more equal share of this windfall soon. Thus, the results of the utility among people also depend on how resources grow and are distributed.

2. The literature of the tunnel effect

In this section, the literature related to Hirschman's tunnel effect is provided. Studies range widely from economics to psychology. The literature is divided into two categories: cross-country and country-specific studies.

Using cross-country data, several studies suggest that people are less satisfied when income inequality is high (Easterlin 1995; Alesina et al. 2004; Graham & Felton 2006; Verme 2011; Ferrer-i-Carbonell & Ramos 2014; Oishi & Kesebir 2015). Powdthavee et al. (2017) use top income share as an alternative to the traditional measure of income inequality, the Gini index, and find consistent results with previous studies. Thus, these studies show that the supposedly positive attitude towards rising income inequality, as mentioned by Hirschman (1973), may not exist. However, some studies suggest that high-income inequality is positively associated with life satisfaction (Rozer & Kraaykamp 2013; Cheung 2016). Nevertheless, it should be noted that the tunnel effect is not specially mentioned in these studies.

The tunnel effect is specially studied in the context of Russia and China as emerging economies. As Russia transformed its economy from a communist system to a free market in the 1990s, it provides an exciting setting for Hirschman's hypothesis because inequality in Russia has increased dramatically after economic reform. Ravallion & Lokshin (2000) use a

household survey in 1996 that includes both socio-economic data and subjective questions on perceptions of welfare to analyze the desire of redistribution in Russia. The key question is, “Do you agree or disagree that the government must restrict the income of the rich?” The results reveal that almost 50 per cent of people who expect welfare to rise in the next 12 months support redistribution while 84.5 per cent of people who expect welfare to fall want the government to restrict incomes of the rich. On average, 72.3 per cent of the respondents are in favor of restricting incomes of the rich. Thus, the result of Ravallion & Lokshin (2000) is consistent with Hirschman’s idea that attitude towards redistribution relies on how people think about their future. Another relevant study conducted in by Senik (2004) who uses the Russian longitudinal monitoring survey between 1994 and 2000. Reference income is constructed to test empirically against life satisfaction. The results find a positive effect of reference income on personal satisfaction. Also, it is suggested that the Gini index is not statistically correlated with life satisfaction. This means inequality indices are not likely to affect people. It is concluded that people may be optimistic about their opportunity to be better off from development processes and this leads them to be neutral to inequality. In 2008, Senik conducts cross-country analysis using individual-level data from several countries to examine how subjective well-being relies on own income and reference income. It is found that there is a negative relationship between reference income and individual subjective well-being in old European countries (i.e., Western European countries) while the relationship is positive in post-transition economies (e.g., Eastern European countries).

Among developing countries, the study of inequality in China is growing rapidly. Several studies found a positive relationship between the Gini coefficient and happiness (Knight et al. 2009; Jiang et al. 2012). Cheung (2016) tests the link between inequality and happiness using a large sample of 30,255 Chinese respondents. It is found that higher inequality

is associated with higher life satisfaction in rural areas but not in urban areas. Hope for higher income due to policies to urbanize rural areas may help people tolerate income inequality. This result is consistent with Whyte & Im (2014) who use the China national survey in 2004 and 2009 to examine people's attitude towards income inequality. Their fundamental questions are, "Did the continued rise in income gaps and the impact within China of the global financial crisis lead to rising popular anger about the unfairness of current inequality patterns in 2009?" and, "Did the social contours of attitudes toward current inequalities shift over the five years between surveys?" They find that the 2009 respondents are significantly more likely to view current inequality as fair, despite the increases in the income gap in this period. They also suggests that the 2009 respondents do not feel anger against the rich and successful, but they express a stronger desire for a government-provided social safety net. Another example from Wang et al. (2015) investigate an inverted U-shaped association between Gini coefficient and individual happiness. They find that a lower level of income inequality is beneficial to individual happiness while excessive income inequality yields the opposite effect.

However, an economic model used to analyze inequality is criticized by Cramer (2003) because there are two opposite results of the relationship between inequality and conflict using a closed dataset. It is stated that an arbitrary selection of assumptions and the capability of supporting an argument depending on model specification give uncertainty in the effect of inequality on conflict. This can generate a misunderstanding about income inequality. Data is seen to be another obvious problem among researchers in the study of inequality using an empirical methodology. It is noted that it is not only availability and consistency of data but also quality and coverage of data that researchers should be aware of in studying income inequality (Fields 1994; Fearon & Laitin 2003; Cramer 2004; Szekely & Hilgert 2007).

3. Discussion

The tunnel effect proposed by Hirschman illustrates how people understand and respond to income inequality along the path of development. The characteristics of society that make his arguments valid have been discussed in specific contexts, but not discussed broadly. However, I find that his seminal contribution can be extended in a number of ways in order to broaden our understanding of societal tolerance to inequality in the process of economic development.

Firstly, there are only two groups of people engaged in Hirschman's explanation: people who are apparently better off and those whose situations are stagnant. However, it is possible to extend the analysis to three groups of people. These three groups are characterized by how they are exposed to development. The first group is the winner when the country experiences high growth rates. People in this group can realize higher incomes. There can be several examples of this case. If they are seeking jobs, they will get employed soon. If they are employed, they will be promoted to a better-ranked position. If they are a producer, even in a large or small firm, they may receive a huge order from foreign consumer meaning that they are happier. Positive things are possible. With increased income, they are obviously better off. In essence, they feel that they are a vital part of this rigorous economy. The second group is made up of people who are worse off during the phase of development. They are known as the losers. Examples of this are the firm realizing that it is no longer competitive in the market due to an inflow of relatively cheap imported product, and employers are laid off, or at least job positions are closed for a while. A fall in their output is unavoidable, which in the end affects the suppliers. A vicious cycle begins. It can also be the case that people in this group are

negatively affected by environmental degradation due to the construction of industrial sites releasing pollution into the air, water, and soil. This is a negative externality for which local people bear a burdensome cost. These people then feel that they are left behind. The last group is people who see themselves unaffected. They do not even know how impressive the country's economic performance is because they are too busy with their tough daily life. They may question the high growth rate of the economy from news exaggerated by the Minister of Finance in the newspaper. They may indirectly benefit from a lower price for the commodity, but it is not noticeably cheaper. Their lifestyle and practice are not significantly changed.

Thus, when development exists, the ways people see inequality vary based on the position they are in at that time. Firstly, people in the first group do not realize the difficulty that other, unprivileged people experience. They do not care much about the big difference between their position and other poorer people's position. As they do not emphasize with other people, their tolerance for inequality remains unchanged. However, it may be possible that they know what current inequality is and feel sympathetic towards people whose lives are made worse off by any kinds of development. For people in the second group, it is not likely that people facing desparate situations can be still optimistic at the early stages of development. Life has changed already. They are expected to have a high degree of tolerance not for income inequality but for the terrible situation. Lastly, people in the third group are most likely explained by the Hirschman's notion. They see other people being better off while they still pursue their own definition of happiness. The degree of tolerance of the third group is supposed to be less substantial compared to the second group. Thus, in addition to Hirschman's path of tolerance, the magnitude of tolerance depends on how people, directly and indirectly, are affected by development.

Additionally, Hirschman sees rising inequality as a result of development and argues further that people can tolerate this disparity of income as long as they still believe that this disparity will vanish sometime in the future. This means that Hirschman thinks that people are fully aware of inequality. However, it is questionable to conclude that this disparity is so influential or apparent that people take it seriously, and it causes them to take an action. Even though material prosperity is likely to be the common notion under capitalism; however, people have different sets of goals. Some people might want to be millionaires while some might just want to go travelling and be healthy. In essence, some groups of people are not obsessed with income all the time. Imagine that we are in the same tunnel and getting stuck in the same traffic jam. However, our destinations are different. Some of us might want to go to the shopping mall while other of use want to go to church. The place where one would like to go may not be important for other people. It is true that we take the movement of each other as an indication of development or progress, but it is limited merely to this tunnel. Thus, the essence is whether a person can move after realizing that other people have already moved and advanced. Nevertheless, the actual gap between two people may not be always the case. This is another channel for how inequality affects people. If the poor see the rich get richer by any means, the poor can have several feelings such as compassion, envy, and disappointment, but they might not care about the gap between themselves and the rich.

Another extension relates to previous experiences of economic development. People have different perspectives on a country's development path. This attitude can affect the duration of tolerance for income inequality. There are two cases to be considered. In the first case, if an expectation has been reached for previous stages of development, they will be more tolerant of this current development. They can stay positive about the disparity, because they know that sooner or later they will be better off. The second case is that if people were

disappointed before as they gained nothing from the last stage of development, the duration of tolerance for this current development will be short-lived and will quickly decay. The reason behind this argument is straightforward. People adapt and navigate themselves from their experiences. Thus, we should take previous development projects into account.

A further issue is how a satisfied person holding a positive hope turns into an indignant person. Hirschman believes that a nonrealization of expectation will result in trouble at some point. This means that people no longer empathize with another group. In this case, time matters – not a specific event. However, it is possible that another sign of development can lessen tolerance. For example, while a mother is waiting for good news from her son about job application after seeing aunt's daughter get a high-paid job, the son of her close friend luckily wins the lottery. With this two-fold occurrence, it is likely that the mother envies more and asks why all fortunes go to other people. The plot thickens when there is still no certain and positive sign from her son. She starts blaming injustice in society as the reason it takes so long for her son to get a job. Thus, another argument is that time is not the only thing that matters. It is difficult to predict when people become frustrated about their luck, but it is not too difficult to predict if luck goes to other people repeatedly. When people expect something to happen, they are happy to wait for a specified period but not forever. Whenever they know that the next chance goes to the same people, tolerance can decline.

The last point is the problem arising from several empirical studies investigating whether an increase in income inequality, positively or negatively, is associated with either life satisfaction or happiness. However, the variables used in their model specifications should be assumed to take place along with the development process. Otherwise, it will not be a precise translation of Hirschman's tunnel effect because, in Hirschman's explanation, inequality rises

merely due to economic growth. However, in fact, inequality can rise due to misallocation of resources without growth. People can tolerate an uneven benefit across a country until the end of development with the condition that they will share this luck as well. However, a reduction in inequality can happen without economic development, for example, through a progressive tax without well-designed social welfare. This will reduce inequality but the poor, who are waiting for their improvement in well-being, will realize that they get nothing and will start being disappointed and frustrated.

4. Conclusion

Income inequality is a contemporary and interdisciplinary issue. It can be viewed and analyzed using different perspectives and tools. This paper has summarized Hirschman's idea regarding changing tolerance for inequality and has suggested some extensions. Based on Hirschman's explanation, inequality is viewed as a result of development, especially in the early stage of economic development. Even though people can tolerate this disparity at the beginning, the magnitude and duration of such endurances are different among a different kind of society. Several studies empirically examine and find Hirschman's conclusions in many ways, especially there being a causal relationship between inequality and life satisfaction. Still, there is a broad research avenue on how people perceive and respond to income inequality during the path of development. A natural experiment can be another methodology to assess this idea. Further, in developing countries, a set of subjective questions should be included in national household socio-economic surveys so that we can see and determine the pattern of different perceptions towards income disparity among sex, education, income, and other household characteristics. As the world today has dramatically changed from 45 years ago, the day that

Hirschman proposed the tunnel effect, we need a new lens to view how people understand this challenging issue.

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