



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

INTERNATIONAL JOURNAL
OF CURRENT RESEARCH

International Journal of Current Research
Vol. 16, Issue, 01, pp.26817-26821, January, 2024
DOI: <https://doi.org/10.24941/ijcr.46484.01.2024>

RESEARCH ARTICLE

LINKAGES BETWEEN ANTITRUST AND ECONOMIC GROWTH

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ARTICLE INFO

Article History:

Received 25th October, 2023
Received in revised form
27th November, 2023
Accepted 15th December, 2023
Published online 19th January, 2024

Key words:

Antitrust, Economic Growth, Trade
Openness, Inflation, Investment

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Citation: Tay-Cheng Ma. 2024. "Linkages between Antitrust and Economic Growth". *International Journal of Current Research*, 16, (01), 26817-26821.

ABSTRACT

This article investigates the relationships between antitrust and economic growth from a comparative view of various linkages including investment, inflation and trade openness. It argues that investment motivated by efficiency-seeking should be the main channel through which antitrust may affect growth, although this effect might be weak. This means that antitrust policy should focus on correcting microeconomic conducts that result in a misallocation of resources and a reduction in efficiency.

INTRODUCTION

Many researchers have undertaken the task of analyzing the effect of antitrust law on economic growth in recent years. As yet, however, there is still no consensus on this issue in the literature.¹ In practical sense, growth-determining factors (e.g., investment, trade, and inflation) are often interdependent with antitrust as well as growth, simultaneously influencing and being influenced by both. Therefore, this article attempts to specify explicitly different channels through which antitrust can influence economic growth so as to help understand the essence of the antitrust as well as its link to growth. Based on this, this article proceeds by selecting some channel variables that both determine growth and are influenced by antitrust. For instance, it is argued that antitrust may promote investment by supporting allocative efficiency with market-based pricing, rather than monopoly pricing, and hence can generate sustainable economic growth.² Therefore, there are reasons to believe *a priori* that antitrust can promote growth through the channel of promoting investment. This approach starts with the specification describing the impacts of antitrust enforcement on several growth determining variables (i.e., channel variables): investment, trade openness, price distortions, and inflation.³

This allows one to pinpoint whether and how antitrust influences growth through each of the possible channels. Then, we argue that investment motivated by efficiency seeking-incentives is the main channel through which antitrust can affect growth.

Channels between Antitrust and Growth: This section selects channel variables that both determine growth and are affected by antitrust policy. These variables are mainly chosen based on the cross-country study of Barro (1991 and 1996) that provides a list of variables commonly used in explaining growth.⁴ Here, antitrust is designed to promote market competition and correlates with these channel variables to some degree. However, on the other hand, antitrust is merely a component of competition policy that is not much more than an auxiliary element to ensure capitalism and a market economy (see, e.g., OECD, 2003). Compared to fiscal and monetary policies, it is unrealistic to expect that antitrust enforcement can have a very significant impact on growth determinants determined by these policies, such as money supply, exchange rate and government expenditure.⁵ Besides, it is also unlikely that antitrust can significantly influence some fundamental growth factors, such as human capital and political freedom. Therefore, it seems sensible to limit the number of channels that antitrust can influence so as to be more relevant to actual situations. Based on this consideration, we thus choose investment, trade openness, and inflation as the possible linkages between antitrust and growth.

¹ See, e.g., Wood and Anderson (1993), Dutz and Hayri (2000), Crandall and Winston (2003), Krakowski (2005), Nicholson (2008), Borrell and Jimenez (2008), Borrell and Tolosa (2008), Clougherty (2010), and Buccirosi *et al.* (2013).

² See, e.g., CPB Report. 1997. Netherlands Bureau for Economic Policy Analysis. repub.eur.nl/pub/10919/HowCompetitive_1997CPB.pdf

³ Based on these variables, one can specify the corresponding system equations describing the effect of antitrust policy on these channels. It is through these channels that antitrust can influence economic growth.

⁴ These variables include investment in human and physical capital, monetary policy, inflation, government expenditures, political stability, the economic system (socialist or free enterprise), the political system (democracy or autocracy), trade, market distortions, and a set of geographical variables.

⁵ This point will be discussed later in this article.

Investment: The growth literature emphasizes that investment is the main engine of economic growth. In particular, the endogenous growth model indicates that the externality associated with investment in physical capital consists of building up a stock of human capital.⁶ For example, when a factory acquires a new machine, engineers must understand its performance, usage, and other potential applications. In doing so, investment certainly helps engineers to broaden their knowledge, and hence improves human resources. This feature makes capital investment (especially equipment investment) a crucial source of economic growth. Empirically, this argument has also found support from numerous studies. For instance, Jorgenson *et al.* (1987) and Wolff (1996), among others, evidently show that new technologies are embodied in new machines such that all innovations are incorporated in the investment in physical capital. Besides, by using extreme-bounds analysis, Levine and Renelt (1992) also show that investment is the only scheme in which innovations are implemented. If no new investment is made, then productivity or GDP per capita does not increase at all. This relationship constitutes the heart of the capital-embodiment theory, as pointed out by Hercowitz (1998).

However, regarding the effect of antitrust on investment, the current body of literature is inconclusive. On the positive side, it is argued that antitrust law seeks to preserve competition by supporting allocative efficiency with market-based pricing, rather than monopoly pricing, thereby encouraging greater investment in a more efficient market. For instance, Eaton and Grossman (1986) indicate that antitrust is the first-best policy to correct market failures and to improve efficiency, while industrial or trade policy is at best the second-best solution.⁷ More importantly, with regard to the themes of this article, “antitrust laws can encourage efficient investment by protecting firms from strategic, inefficient advantage-taking by others (Hovencamp, 1985, p. 213).” At this point, an active antitrust policy can ensure a competitive marketplace to encourage the incentive to increase innovation investment. Empirically, this argument is supported by the survey results of Baker (2007), in which he finds that firms have incentives to restrict competition on ways to reduce outputs that would suppress capital investment and would undermine each firm’s individual incentive to innovate. For instance, he uses the collusive agreement among the leading U.S. automobile manufacturers to explain that the “Big Three” automakers have only a limited incentive to implement innovative investment relative to that of their fringe rivals. Since investment is the main channel through which production efficiency and innovations are implemented,⁸ this argument thus points to a positive link between antitrust and investment based on efficiency-seeking. However, on the negative side, Bittlingmayer (2001) finds a negative effect of antitrust on investment behavior and industry structure. He employs antitrust case filings as the measure of regulatory uncertainty to explain the variations in industry investment due to public policy. His findings indicate that the low level of investment between the 1950s and 1960s in the U.S. was caused, at least partly, by the aggressive antitrust enforcement.⁹ Besides, Rodriguez and Coate (1996) and Crandall and Winston (2003) also argue that antitrust can serve to protect competition and encourage investment only if it is appropriately enforced without creating any uncertainty for firms to invest in new

ideas. Nevertheless, they find that antitrust law is rarely appropriately applied (especially in the LDCs). For instance, Rodriguez and Coate (1996) provide concrete evidence to support the argument of Bittlingmayer (2001) that unilateral competitive actions, such as predatory pricing and vertical agreements, may serve to enhance market competition in certain circumstances, although these actions may also hinder procompetitive conduct. Since it is difficult for firms to distinguish good business practices from bad ones in advance, the antitrust enforcement thus increases the uncertainty faced by firms which in turn would wipe out or reduce the incentives for investment and innovation. In particular, merger control policies generally use excess profits to justify attacking mergers in affected industries. This will inherently bias the law enforcement toward the successful firms which typically earn high returns. Therefore, Rodriguez and Coate (1996) conclude that antitrust regulations would reduce the returns to risk-taking and innovation, and hence may adversely affect the long-run investment.

Inflation: Inflation constitutes another channel linking antitrust to growth. The growth literature has extensively documented that economic growth is enhanced by lower inflation.¹⁰ For instance, Barro (1996) indicates that an increase by 10 percentage points in the inflation rate could reduce a country’s growth rate by 0.3-0.4 percentage points. Thus, the main issue of the disputes regarding this channel lies in the other side of the story: whether or not the antitrust law could be directly geared to preventing inflation while having less of an effect in terms of inhibiting growth. According to the U.S. Congress Joint Economic Committee’s “*Staff Report on Employment, Growth and Price Levels* (Eckstein Report, hereafter)”,¹¹ compared to the restrictive application of monetary and fiscal policies which might cause a decline in economic growth, antitrust can halt the increase in prices while keeping the economy from slipping back into recession.¹² This is because it is difficult to deal with the downward inflexibilities and structural inflation. The use of aggregative monetary and fiscal controls will sometimes result in lowered output and employment with only small effects on the level of prices. However, very few (if any) economists nowadays believes that antitrust and inflation have anything to do with each other. This topic comes up only when lawyers and/or politicians who don’t understand economics start talking about inflation and antitrust. In fact, it is well known that the Chicago School’s antitrust paradigm stands in sharp contrast to the previous emphasis on the call for a more interventionist standard (Lambert and Wright, 2008). As indicated by Bork (1978), antitrust should be limited only to ensuring market competition and improving economic efficiency. Meese (2012) goes even further and articulates that a wiser approach to antitrust would be to limit policies to what it does well – protecting the efficiency from suffering from collusion, and mergers from becoming a monopoly – and leave the issue of inflation to more macroeconomic policies.

Trade Openness: There have been two different theories developed to investigate the effect of domestic antitrust on international trade. The first view claims that trade and antitrust are autonomous and independent bodies of policies that ply their separate courses with little interaction (So and Yeung, 2007). Thus, antitrust has limited effects on trade expansion. The second view is the mainstream view in the literature and emphasizes that antitrust policy can contribute to lowering trade barriers.

⁶ This idea can be traced back to Arrow (1962) who suggests that the innovation associated with capital investment is the main factor that promotes the learning by doing and the accumulation of the stock of knowledge. He further shows that the best indicator for the stock of knowledge is the accumulated investment.

⁷ They show that, if the world markets are segmented, trade policy could then serve as a second-best substitute for antitrust policy only to the extent that marginal cost is not constant, so that the quantities supplied by an oligopolist to the various markets are interdependent.

⁸ See De Long and Summers (1991).

⁹ Shleifer and Vishny (1991) also argue that the strict antitrust enforcement in the 1960s made most “horizontal acquisitions” infeasible and so forced firms to increasingly make acquisitions to diversify. Therefore, antitrust was, at least in part, responsible for the diversification wave over that time. They further indicate that the damage to resource allocation from such diversification is much greater than the benefits created, and hence “it is better to have a few monopolies than a lot of conglomerates (Shleifer and Vishny, 1991; p. 58).”

¹⁰ See the review paper of Briault (1995)

¹¹ See Hoover (1960) for the discussion of the report. This report was prepared for consideration by the Joint Economic Committee, Congress of the United States, Dec. 24, 1959. It is commonly referred to as the *Eckstein Report* after its technical director, Professor Otto Eckstein of Harvard University.

¹² The Eckstein Report (1959) proposed that, under the existence of the market power of big business, the attempt to control price the level through the implementation of monetary policy is rendered ineffective, except at a prohibitive cost in terms of unemployment and growth sacrificed. “It is clear that the use of aggregative monetary and fiscal controls will result primarily in lowered output and employment with only small effects on the level of wages or prices. (Eckstein report, p. 117)” This argument thus asserts that antitrust policy would be the first-best solution to deal with the downward price inflexibilities and interdependencies of structural inflation without inhibiting growth.

This is because only eliminating governmentally-imposed barriers to market access is not enough to ensure an open international trading regime. Some private barriers to markets, such as cartels or collective boycotts that control essential conduits for international trade, can be just as effective in blocking market entry as governmental barriers have been. Therefore, the concerns for both public and private barriers to market access are equally important. As indicated by Wood (1995), while deregulation and lower trade barriers come into play, it is also important to have a strong competition policy in place so that the newly-freed markets will not succumb to monopolization, cartelization, or other anti-competitive strategies.¹³ Based on this, Geradin (2004) thus argues that antitrust is important to ensure free trade in the international sphere. Thus, the main question here is whether or not trade openness can spur growth as discussed in what follows.

However, as shown by Rodriguez and Rodrik (2001), the relationship between growth and openness is not so unequivocal and has now become a key issue in the development debate. In fact, their research has been attracting a growing interest from the economic literature. For instance, Winters (2004, p. F13) points out that the most important contribution in this area comes from Dani Rodrik. By an empirical evaluation, Rodriguez and Rodrik (2001) find that the argument that trade openness is definitely good for growth¹⁴ is more or less subject to estimation bias resulting from measurement errors, endogeneity, and a weak econometric model. Instead, they find out that the relationship between trade and growth is not so straightforward and can be divided into two aspects. Firstly, in static models with no market imperfections, trade openness can increase the level of real GDP, and this is the so-called level effects from a neoclassical perspective. Nevertheless, on the other hand, trade openness has no effect on the long-run (steady state) rate of growth of output.¹⁵ Secondly, in the endogenous growth model driven by externalities from non-diminishing returns to scale and learning-by-doing, the proposition is that trade openness can increase the global output growth rate. However, on the other hand, a subset of countries may experience a diminished growth rate, depending on individual country characteristics. For instance, Grossman and Helpman (1991) illustrate that some LDCs that are behind in technological development will be driven by trade to specialize in low value-added goods (e.g., primary commodities), and hence will experience a reduction in their steady state growth rates. On the other hand, the DCs can benefit from having a comparative advantage, which will push the economy's resources in the direction of activities that facilitate steady state growth through externalities from R&D and by upgrading product quality. Rodriguez and Rodrik (2001) therefore conclude that there is no coherent body of evidence that trade openness can generally increase the growth rate. Sometimes, it is trade restrictions and not openness that can promote GDP growth. Based on this, although antitrust can reduce trade barriers in the first stage, it may not ensure that countries with lower barriers to trade can experience faster economic progress in the long run. As a result, the effect of antitrust enforcement on economic growth might be quite weak.

Antitrust Is Not a Tool of Macroeconomic Stabilization: This article argues that investment driven by efficiency-seeking incentives should be the main channel that antitrust has an effect on growth. First, although antitrust may ensure free trade in the international sphere, however as previously discussed, most of antitrust literature does even not consider international trade as a candidate channel for antitrust to affect economic activities. In fact, there are only a few

¹³ For instance, Clougherty and Zhang (2004) argue that export-orientation favors strict domestic merger policy. Baker (2003) also suggests that international cooperation between antitrust agencies can effectively eliminate international cartels. He further indicates that the U.S. has undertaken a number of international cartel prosecutions in some markets, such as vitamins, lysine, graphite electrodes, and fine art auctions.

¹⁴ See, e.g., Dollar (1992), Sachs and Warner (1995), Edwards (1998) and Frankel and Romer (1999).

¹⁵ However, in the short run, there might still be some growth effects during the transition to the steady state.

studies that specifically address this issue (Hand, 2003, p. 131). Secondly, very few (if any) economists nowadays believes that antitrust and inflation have anything to do with each other. The fact that regulating monopoly can reduce micro-price of a commodity does not necessarily mean that antitrust can curb macro-price inflation. Inflation should be determined by macro-economic factors, such as money supply, exchange rates and aggregate demand. It is unrealistic to expect antitrust as a tool of macroeconomic stabilization. The literature that expands the goals of antitrust to serve as a multi-goal policy instrument may over exaggerate on the usefulness of antitrust. This is because the general price level is a reciprocal of the price of money measured in terms of bundles of goods, Marshall's brand of neoclassical economics thus emphasizes that macroeconomic absolute price is purely a monetary phenomenon (Patinkin, 1963; Friedman, 1969; Sargent, 1986). Therefore, the overall price inflation of all goods and services has everything to do with relatively more money chasing after fewer goods and services, but has nothing to do with the supply of and demand for "individual commodities", not to mention the market power exercised by monopoly providers. More importantly, the microeconomic relative price of a particular single commodity is determined by the supply and demand in its own market. The behaviors of consumers and producers are based on relative prices (or opportunity cost), but not on the choice of the particular unit of value, or numeraire. Therefore, the allocation of resources is governed by relative, and not absolute prices (Assarsson, 1984). Antitrust policy at best can only correct the distortions in relative prices caused by market power so as to ensue allocative efficiency in the individual market. It has nothing to do with the overall price inflation of all goods and services and hence should leave inflation regulation to monetary policy.

This can be further explained by the tradition of neoclassical thinking. If the abuses of monopoly power lead to the price of beef being higher than it would be in a competitive market, then consumers (producers) will eat (produce) too little beef and too much chicken. This distortion will impede economic efficiency and raise the price of beef (and even the price of chicken) relative to the prices of other goods and services. Under such a distortion, antitrust can correct market failures by regulating monopolistic firms to produce more output in the beef market, and hence can eliminate deadweight loss embodied in the problem of "too little beef".¹⁶

From a microeconomic logic, this type of regulation can free up real resources, that the non-beef (e.g., chicken) markets had previously employed in the next best use, for their first best use in the beef market. More importantly, it can correct the balance back in favor of competition, which in turn will push firms to take innovation seriously as a matter of death or survival and to focus efforts more on augmenting productivity as well as reducing unit cost. Efficiency and innovation thus become the dominant considerations in enforcing competition laws. On the other hand, since investment is the main channel through which production efficiency and innovation can have an effect on growth,¹⁷ this conclusion thus points to a positive link between antitrust and growth. That is, capital investment with embodied efficiency is the main channel through which antitrust can influence economic growth.

¹⁶ Well in line with the expectations of neoclassical monetary theories, one can further highlight that even though no antitrust occurs, monopoly pricing in individual markets will still not push the aggregate price up. This is because the aggregate price level is largely a monetary phenomenon determined by the money stock. If the real money balances or aggregate demand induced by the money does not change, then the beef price rises will not affect the aggregate price, since the demand for other goods will decrease and pull the prices of non-beef items down. In this way, the aggregate price level is exclusively determined by the money supply and is unrelated to any aspect of real behavior in the individual market, such as the rise in the relative price of beef caused by monopoly or collusion. Even if antitrust can pull the beef price down and even if it might free up consumer expenditure to focus on commodities other than beef, but the aggregate demand induced by money is still unchanged, then the effect of the lower beef price on the aggregate price will be offset by higher prices of non-beef products.

¹⁷ See De Long and Summers (1991) as well as the discussions on the embodied technological growth model in Section II.

Investment is the Main Channel That Antitrust Affects Growth:

The promotion of efficiency-seeking investment should be the main channel in which antitrust can influence growth. Antitrust should abandon any pretensions of being a tool for macroeconomic stabilization, and should focus solely on correcting microeconomic conduct that may result in a misallocation of resources and a reduction in efficiency. By guarding competition, antitrust can improve stationary efficiency (allocation effect) and dynamic efficiency (innovation effect) of investment which in turn promote economic growth. More importantly, from a dynamic perspective, antitrust can correct the balance back in favor of competition, which would push firms to take innovation investment seriously as a matter of death or survival and to focus efforts more on augmenting productivity as well as reducing unit cost. *Only in competitive marketplaces, firms can benefit from being innovative by dragging customers away from competing firms and increasing their own market shares. At the same time, non-innovative firms must fear that more innovative competitors drag their customers away by providing innovative products or services better suiting the preferences of customers. This 'double incentive' adds on the intrinsic motivation to innovate because of engineering curiosity and, thus, considerably increases the incentives to innovate compared to non-competitive 'market' places* (Budzinski, 2011, p. 5). Competition-driven innovation thus spurs investment that is geared towards achieving competitive advantage through timely release of innovative and value-added products in a volatile growing market. Since investment is the main factor to promote growth,¹⁸ this conclusion thus points to a positive link between antitrust and growth.

CONCLUSION

We argue that a positive effect of antitrust effectiveness on economic growth should be mainly through the channel of promoting investment. Antitrust enforcement should concern itself with encouraging efficient resource allocation rather than regulating inflation or promoting international trade. More importantly, this article suggests that antitrust influences investment and growth only through micro relative price regulation to correct resource misallocation within an individual market, but not through the correction of macro distortion.

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¹⁸ See De Long and Summers (1991) as well as the discussions on the embodied technological growth model in Section II.

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