



The **E15** Initiative

STRENGTHENING THE GLOBAL TRADE AND INVESTMENT SYSTEM  
FOR SUSTAINABLE DEVELOPMENT



**Trade, Finance & Development:  
Overview of Challenges and Opportunities**

Jean-Louis Arcand

February 2016

E15 Expert Group on  
Trade, Finance and Development

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**Think Piece**

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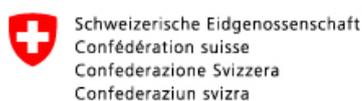
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# ABSTRACT

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Although there is an extremely robust positive correlation between various measures of trade and financial development on the one hand, and economic growth, on the other, the evidence concerning the direction of causation between economic growth, development, and other variables is not clear. Moreover, there is increasing evidence (as witnessed by the 2008 Global Financial Crisis) that countries can have financial sectors that are "too large." This paper reviews recent work, including by the author, on the relationship between geography, institutions, trade, and finance and economic growth and development. It argues that high levels of financial depth, measured by credit as a fraction of GDP, is associated with less, rather than more, economic growth.

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# LIST OF ABBREVIATIONS AND ACRONYMS

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GDP	Gross domestic product
MDGs	Millennium Development Goals
ODA	Official development assistance
PPPs	Public-private partnerships
SDGs	Sustainable Development Goals
SMEs	Small- and medium-sized enterprises
TFP	Total factor productivity
US	United States

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# INTRODUCTION: A CONCEPTUAL FRAMEWORK

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Sustainable development is the Holy Grail of the international community, and the potential roles played by trade and finance lie at the heart of the search effort. The extremely robust positive correlation between various measures of trade and financial development on the one hand, and economic growth, on the other, is the bread and butter of thriving sub-disciplines within economics (international trade and the finance and growth literature, respectively). Evidence concerning the direction of the causal relationships is, however, less than compelling. For example, there is increasing evidence (and the 2008 crisis may be a manifestation of this) that countries can have financial sectors that are "too large." As such, one needs to be extremely cautious in formulating policy recommendations that rest on putative causal relationships that have not been rigorously established. Moreover, the link between trade and finance on the one hand, and various measures of development (as opposed to a narrow focus on economic growth), on the other, has attracted much less attention. To some extent, this is because of the proliferation of measures of development: it suffices to think of the vast array of Millennium Development Goals (MDGs) or Sustainable Development Goals (SDGs). An implicit assumption is that economic growth will necessarily translate into improvements in these indicators: this is not, of course, the case. In addition, it is already difficult to establish the causal determinants of economic growth: doing so for a plethora of other development indicators increases the challenge by several orders of magnitude.

## GEOGRAPHY AND INSTITUTIONS

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During the past twenty years, our understanding of the determinants of economic growth has been profoundly shaped by a vast corpus of cross-country empirical literature. This work was initially driven by the construction of internationally comparable measures both of economic growth and development (such as the Penn World Tables or the World Bank's World Development Indicators) and of country characteristics. Though it is something of an oversimplification, this literature has given rise to two

broadly defined schools of thought concerning the key fetters to economic development and growth.

On the one hand, the "geography" school, often associated with Jeffrey Sachs, holds that a country's development performance is to a large extent determined by its geographical location. For example, it is argued that a country's level of gross domestic product (GDP) per capita is, *ceteris paribus*, an increasing function of its distance to the equator; similarly, landlocked countries are believed to have both a lower level and a lower rate of growth GDP per capita. There are many causal pathways that can explain geographically driven income and growth effects, including the higher burden of disease under subtropical climates or the infrastructure needed to overcome geographic isolation from world markets for landlocked countries. In a traditional growth accounting framework, both of these examples underscore the fact that geographical fetters to development affect total factor productivity (TFP), the overall efficiency with which factors of production, such as labour and capital (both human and physical), are transformed into output; the productivity of single factors of production (such as labour); and the amounts of the factors themselves that are used.

On the other hand, the "institutional" school of thought, often associated with the work of Daron Acemoglu and his collaborators, has emphasised the importance of a country's institutional environment, where institutions are understood in their economic (and not political) sense in terms of social structures, such as the rule of law or the protection of property rights that allow economic activity to develop. As with geography, institutional factors can affect the productivity of single factors, TFP, and factor use.

One of the most important empirical regularities established by the institutional school is that there is a causal relationship linking national economic institutions (as usually measured by protection against expropriation risk) to income per capita. Moreover, a second important empirical regularity is that geography affects per capita income through its impact on institutions: once economic institutions are appropriately taken into account, geography arguably no longer has an independent impact on income levels.

A simple diagram, based on empirical results similar to those of one of the most influential recent papers in economics (Acemoglu, Johnson, and Robinson, 2001) will render this mechanism more explicit: geography affects economic institutions, but has no direct effect on growth; economic institutions, in turn, determine economic growth. The effect of geography on economic growth is therefore mediated through national economic institutions. There is a final arrow linking economic growth to development in a broader sense.

Where do trade and finance fit into this picture? In order to organize our thoughts, let us divide the impact of trade and finance on economic growth (leaving development *per se* out of the picture for the time being) into two components.

First, there are direct effects: trade and finance, through well-established mechanisms, may enhance growth performance. Though the causal evidence at the macro level is often weak (the finance and growth or aid effectiveness literatures are cases in point), there is a corpus of microeconomic evidence that points to productivity enhancing causal effects of trade and finance. These effects are added in the following picture.

Second, there are indirect effects, which operate through either geography or economic institutions. “Geographic” effects of trade and finance include trading arrangements (such as preferences), which effectively compensate for geographical disadvantages, or financing options — such as official development assistance (ODA) or public-private partnerships (PPPs) devoted to infrastructure projects — which overturn geographic fetters, such as being landlocked. “Institutional” effects of trade and finance have been explored less. While, to take but two examples, the corruption-enhancing effects of ODA have been well documented, as has the positive impact of openness on many national bureaucracies, there are undoubtedly many other mechanisms that could, and should, be explored.

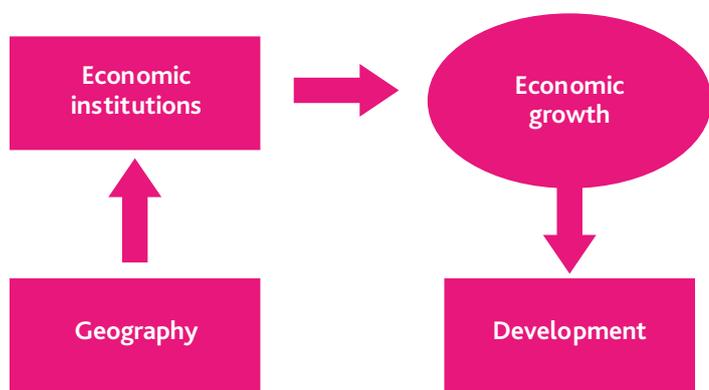


FIGURE 1:

Relationship between geography, institutions, economic growth, and development

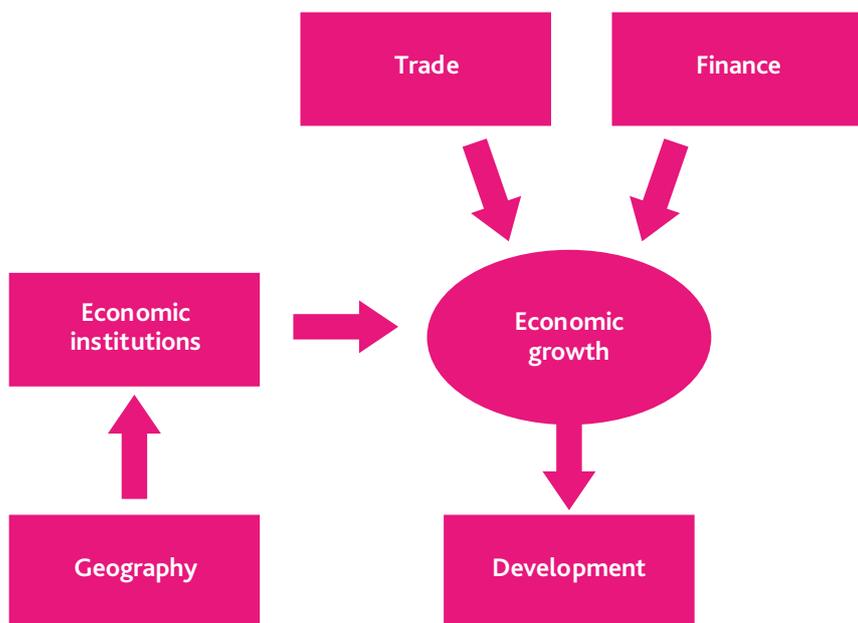


FIGURE 2:

Effects of trade and finance on economic growth and development

## GROWTH VERSUS DEVELOPMENT

Finally, there remains the vexing question of the link of all of this (as noted at the outset) with broader measures of sustainable development. Here (and I am willing to be corrected on this), the existing literature is not of much help. In an effort to wrestle a broader development indicator into the above conceptual straightjacket, I appended, as a very rough thought exercise, a third equation to the Acemoglu,

Johnson, and Robinson (2001) empirical framework. The scalar measure of development that I added was the classic child anthropometrics indicator of stunting (the proportion of children in a country whose height is one standard deviation below where it should be if they were in good health).

I chose this synthetic indicator for two reasons. First, because half a century of empirical evidence has taught us that it is determined by four factors: income (and therefore economic growth); access to clean water and basic healthcare; maternal

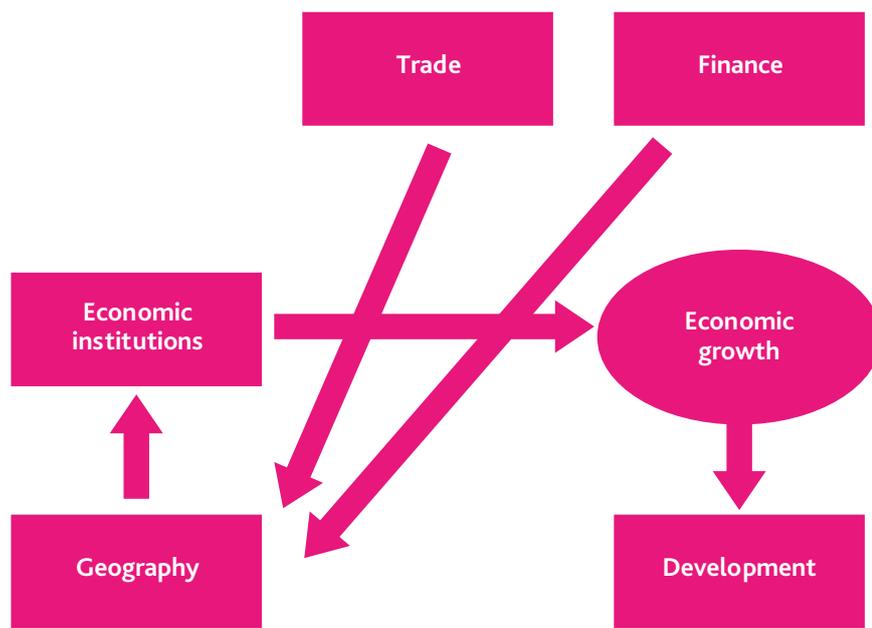
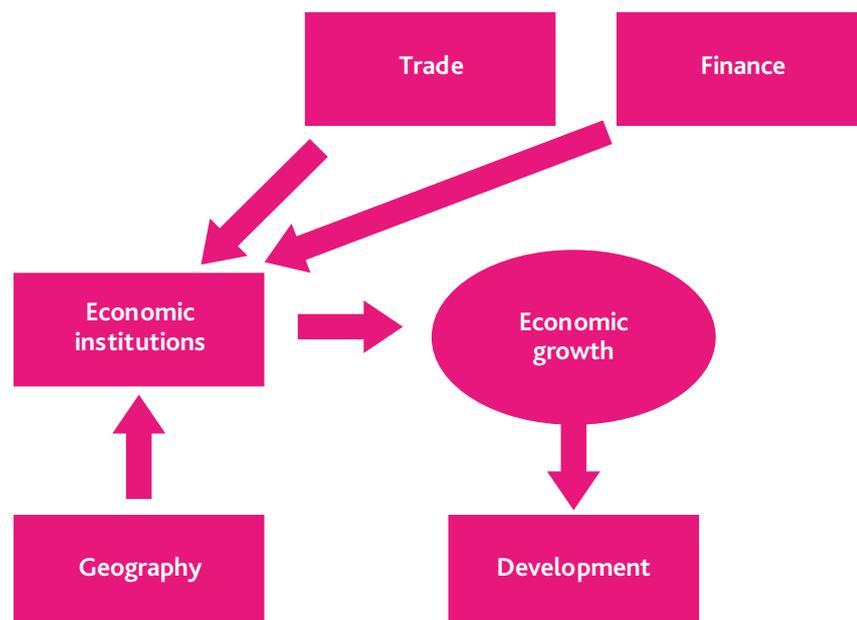


FIGURE 3:

Effects of trade and finance on geography, institutions, economic growth, and development



education and female empowerment. Second, this indicator is culturally neutral: in different societies, economic and social success may be measured by a bewildering number of indicators, ranging from income, to land ownership, to livestock; but the bottom line is that all inhabitants of this planet care about the welfare of their children, which also adds an intertemporal perspective to things. A remarkable empirical regularity emerges: while income per capita is (unsurprisingly) a statistically significant determinant of stunting (more precisely, a 1 percent increase in per capita GDP is associated with a 5 percent fall in the prevalence of stunting), neither geography nor institutions appear to play a role. While this regularity is merely suggestive, it does offer the hope that the above conceptual framework may be of some use in pinpointing the roles that can be played by trade and finance in enhancing development in general, and not merely economic growth.

## OUTSTANDING ISSUES TO BE EXPLORED ON 13-14 APRIL

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This extremely simplified conceptual framework leads us to a series of outstanding questions that we will be addressing on Monday and Tuesday:

- What types of financial development are appropriate for emerging and developing countries? In the next section, I make a first attempt to provide a partial answer to this question. I suspect that Jane Drake-Brockman's contribution on services trade (and in particular financial services trade) will allow us to significantly flesh out what I have already written and to add substantial insights from the small- and medium-sized enterprises (SMEs) perspective that are totally lacking from my own presentation (which is largely confined to the cross-country macro perspective). Pol Antràs will also share his insights on trade finance, which should allow us to round-out this section of the report.
- What do recent (and not so recent) experiences in terms of reforming specific international trade and finance institutions have to teach us? And how can these lessons be harnessed to enhance the direct and indirect effects of trade and finance highlighted earlier. The perspective of the private sector in terms of getting institutions to work for them will be particularly important on this issue to avoid simply revisiting current international policy debates. I expect that Katrin Kuhlmann will provide us with some stimulating and provocative ideas on this, as will the private sector representatives who will be joining us on Monday afternoon. Similarly, Kimberley Elliott will provide us with a reality check from the perspective of the United States (US) on what can be done in terms of market access for developing countries, while Frans Lammersen and Christophe Bellmann will bring us up to speed, and provide a judicious dose of real world experience, on the topic of aid for trade.

- Should ODA be seen as a source of finance for developing countries or should we eschew this well-trodden (and some would say disappointing) path and see it as an instrument of insurance for vulnerable poor countries? Is there any way of separating its productivity-enhancing effects (such as the financing of infrastructure) from its deleterious impact on incentives? We will hopefully get strong (and provocative) answers to these questions from both Patrick Guillaumont and Debapriya Bhattacharya.
- With the huge glut of capital in developed countries (particularly in the form of pension funds) that has not found bankable projects in developing countries, should the international community be doing more to bring the supply and demand of capital together, particularly for physical infrastructure in developing or emerging countries? How? Twenty years on, Robert E. Lucas's rhetorical question of "why doesn't capital flow from rich to poor countries?" remains just as true as ever, and the emergence of new actors, such as China, has complicated the picture even further. As of yet, we have not identified a think piece author for this topic, and it might be worthwhile identifying a potential victim (that we might wish to include in the group as well).

In terms of the concrete proposals that we come up with, I would like to insist that we distinguish carefully between options that real-world policymakers will be able to provide and those that they will be willing to implement: one can take a horse to water, but one cannot necessarily make him drink.

In what follows, I have taken a first stab at outlining an answer to the first question: what types of financial development are good for developing and emerging countries? One of my goals is that, during the meeting of 13-14 April, we come up with policy prescriptions (I hope that some exist!) designed to enhance the likelihood that financial development will take a form that is indeed conducive to growth and development.

However, my overarching goal is that we map out how the various think pieces fit into the overall picture, so that we move toward a coherent policy document for July.

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# FINANCE, GROWTH AND DEVELOPMENT

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## DIRECT POSITIVE EFFECTS OF FINANCE ON GROWTH AND DEVELOPMENT

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Levine (2005) provides an extensive survey of the theoretical literature that describes how the services provided by the financial sector can contribute to economic growth by: (i) producing *ex-ante* information about investment opportunities; (ii) improving *ex-post* monitoring of investment and exerting corporate governance; (iii) facilitating risk management and diversification; (iv) mobilizing and pooling savings; and (v) easing the exchange of goods and services. Of course, there are international complications associated with each of these functions, which provides a potential link with trade, and trade finance in particular. Note that, in terms of the conceptual framework spelled out above, this essentially corresponds to a direct effect of financial development on total factor productivity.

The idea that a well-working financial system plays an essential role in promoting economic growth and development dates back to Bagehot (1873) and Schumpeter (1911). Empirical evidence on the relationship between finance and growth is more recent. Goldsmith (1969) was the first to show the presence of a positive correlation between the size of the financial system and long-run economic growth. He argued that this positive relationship was driven by financial intermediation, improving the efficiency rather than increasing the volume of investment. However, Goldsmith made no attempt to establish whether there was a causal link going from financial depth to economic growth.

In the early 1990s, economists started working toward identifying a causal link going from finance to growth. King and Levine (1993) were the first to show that financial depth is a predictor of economic growth, and Levine and Zervos (1998) showed that stock market liquidity (but not the size of the stock market) predicts GDP growth. More evidence in this direction came from Levine, Loayza, and Beck (2000) and Beck, Levine, and Loayza (2000) who used different types of econometric techniques to identify the presence of a causal relationship going from finance to growth. Rajan and Zingales (1998) provided additional evidence for a causal link going from financial to economic development by showing that industrial sectors that, for technological reasons, are more dependent on external finance grow relatively more in countries with a larger financial sector. While the causality issue has not been fully resolved, Levine, one of the best-known scholars to have worked on this issue, is clear (2005,

p. 867): "While subject to ample qualifications (...) the preponderance of evidence suggests that both financial intermediaries and markets matter for growth even when controlling for potential simultaneity bias."

There seems to be a contradiction between the empirical literature that finds a positive effect of financial depth on economic development and the literature that has shown that credit growth is a predictor of banking and currency crises (Kaminsky and Reinhart, 1999 are an early example, while Schularick and Taylor, 2012 is a more recent effort in this direction). However, the fact that a large financial sector may increase volatility does not necessarily mean that large financial systems are bad. It is possible, as noted by Romain Rancière and his co-authors, that countries with large financial sectors pay a price in terms of volatility but are rewarded in terms of higher growth.

## IS THERE AN OPTIMAL SIZE FINANCIAL SECTOR?

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Recent work by me and my co-authors strongly suggests that high levels of financial depth, measured by credit as a fraction of GDP, is associated with less economic growth. Credit to the private sector was first used as a measure of financial depth by King and Levine (1993). It has now become one of the most commonly used measures of financial depth, because the amount of credit allocated to the private sector is likely to be positively associated with the five financial functions alluded to earlier.

The first possible reason financial depth may result in lower rates of economic growth relates to theories that focus on the evolving role of banks and security markets in the process of economic development. There is a vast body of theoretical work suggesting that decentralised markets have a comparative advantage in designing customised products that can finance high-risk long-term projects with limited collateral and that banks, instead, are better suited to provide low-cost standardised products that can finance lower-risk projects. In advanced economies, entrepreneurs are more likely to need a rich set of risk management tools, and vehicles for raising capital and securities markets become more important for reducing market frictions associated with complex and risky projects that require non-standard financial arrangements.

While the empirical evidence suggests that, other things being equal, countries with bank-based financial systems are comparable in terms of economic growth with countries with market-based financial systems, a number of authors have shown that, as countries become richer, their domestic financial systems tend to become more market-based. Moreover, it would appear that the positive correlation between economic growth and bank credit is decreasing in the level of economic development (measured by GDP

per capita) and that the (positive) correlation between different measures of the importance of security markets and economic growth is increasing in the level of economic development. Such findings are consistent with theories suggesting that the services provided by banks become less important when economies become richer.

If the optimal structure of the financial system evolves with the level of economic development, it may be that certain countries have too much credit and not enough financial services provided by different components of the financial system. In this case, the problem would be one of the "wrong" type of finance. Theories that highlight the evolving role of banks and security markets would also be consistent with the finding that as countries become richer, credit to the private sector is no longer an important positive factor in explaining economic growth.

An alternative set of explanations relates to risk-taking and volatility. Classic work by Minsky (1974) and Kindleberger (1978) emphasised the relationship between finance and macroeconomic volatility. Both of these authors wrote extensively about financial instability and financial manias. More recently, in a paper that seemed controversial then, and looks prophetic now, Rajan (2005) discussed the dangers of financial development, suggesting that the presence of a large and complicated financial system had increased the probability of a "catastrophic meltdown." Easterly, Islam, and Stiglitz (2000) empirically show that there is a convex and non-monotonic relationship between financial depth and the volatility of output growth. Their point estimates suggest that output volatility starts increasing when credit to the private sector reaches 100 percent of GDP. In my own work with Ugo Panizza and Enrico Berkes, we find a similar threshold: in our case, financial depth starts to have a significantly negative effect on growth (and not on the volatility of growth) at just this threshold.

A large financial sector may also lead to a suboptimal allocation of talents. Tobin (1984), for instance, suggested that the social returns of the financial sector are lower than its private returns and worried about the fact that a large financial sector may "steal" talents from the productive sectors of the economy and, therefore, be inefficient from society's point of view. Kneer (2013), Philippon, and Reshef (2013), and Cecchetti and Kharroubi (2015) provide evidence that is consistent with this view. Since finance is now a traded sector, it may make sense for certain countries (or cities) to specialise in providing financial services to the rest of the world. If this were the case, there would not be any misallocation but just some form of optimal international division of labour. Authors, such as Beck, have explored the "financial centre view" based on the idea that large financial sectors arise as export sectors in response to specific comparative advantages and find that, while intermediation activities have a positive effect on growth, an expansion of the financial sector along other dimensions increases volatility without benefitting long-run growth. This provides a nice link to the trade portion of this theme.

The way finance impacts economic growth also may depend on whether lending is used to finance investment in productive assets or to feed speculative bubbles. It is thus possible that the potentially negative effect of financial depth on economic growth is driven by excessive household (especially mortgage) lending. Evidence on this exists: again, Thorsten Beck and his co-authors have shown that enterprise credit is positively associated with economic growth but that there is no correlation between growth and household credit.

Finally, decreasing returns to financial depth may be linked to the increasing importance of credit transfer and repackaging versus credit origination. In the discussions that followed the recent crisis it has been argued that derivative instruments and the "originate and distribute" model, which by providing hedging opportunities and allocating risk to those better equipped to take it were meant to increase the resilience of the banking system, actually reduced credit quality and increased financial fragility. According to several authors, complex financial products may increase financial fragility without contributing to economic growth. For instance, Coval et al. (2009) describe the role of complex structured products in the US financial crisis, and Gennaioli et al. (2010) develop a theory in which the presence of some neglected tail risk coupled with financial innovation can increase financial fragility even in the absence of leverage.



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