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Discussion

Which Variety of Measure and Test are Best to Assess the 'Varieties of Capitalism' Framework?

Two Suggestions for Paunescu and Schneider

By Matthew Allen

Abstract

The recent article by Paunescu and Schneider (2004) is to be warmly welcomed as one of the first systematic appraisals of the 'Varieties of Capitalism' (VoC) framework. This short article offers two suggestions for further tests of the VoC paradigm that they may carry out in the future. First, any measure of comparative advantage used should be based on export data alone, the primary reason being that the conceptual and empirical work conducted so far in the VoC framework places greater emphasis on export data than on net export data (the measure used by Paunescu and Schneider). Second, future studies should test VoC arguments based on the concept of necessity, which underlies many of the arguments espoused within the VoC paradigm. The conventional statistical techniques used by Paunescu and Schneider, however, conflate sufficiency and necessity.

1. Introduction

Despite attracting a great deal of attention, the 'Varieties of Capitalism' (VoC) framework has, to date, undergone relatively little systematic examination at the national economic level. For an unpublished exception, see Hall and Gingerich (2001). Paunescu and Schneider's (2004) article is, therefore, to be warmly welcomed. Their work drew on a range of data to examine the implications of the VoC approach at the national level. This short paper would, however, like to make two suggestions that might improve Paunescu and Schneider's work. The first concerns the measure of comparative advantage that should be used to assess the VoC framework; the second raises issues of which statistical techniques and associated research design should be used to assess the relationships between institutions and outcomes. The statistical method chosen by Paunescu and Schneider to assess this relationship conflates sufficiency and necessity, whereas many of the arguments within the VoC

approach rely not on sufficiency, but on necessity. Thus, an alternative technique should be chosen.

2. Which Measure of Comparative Advantage should be used?

It can be argued that, in order to assess the arguments espoused, *inter alia,* by Hall and Soskice (2001b), a measure of comparative advantage should be used that focuses on exports and not on net export data (exports minus imports). The measure used by Paunescu and Schneider (2004) utilizes the latter. The main reason for favouring this kind of measure stems from the presentation of data designed to bolster the claims put forward within the VoC approach. For instance, the presentation of arguments within the VoC paradigm on comparative advantage and patent data strongly suggest that exponents of the VoC framework would expect a dichotomous relationship in export data for the two main groups of countries identified within the VoC framework.

For example, adducing data from Michael Porter (1990), Soskice (1999) noted that, in 1985, Germany had 46 'internationally competitive' industries in the 'machine industry' sectors of the economy (at the five-digit level of the SITC classification). Although Soskice's definition of 'internationally competitive' was unsatisfactory, as it concentrated on comparing export success between different sectors *within* the same country, what is more important at this stage in the argument is that he juxtaposed German *export* success against the UK's poorer record. In the 'machine industry' sectors of the economy, Soskice (1999, 113) noted that the UK had 18 industries that were internationally competitive. In Hall and Soskice (2001b), US and German patent data were compared; once again, this strongly suggests that they expect to see a dichotomous pattern between the US and Germany in the area of patent strengths and weaknesses as they represent different varieties of capitalism. A corollary of their arguments, given the fact that their edited volume is on comparative advantage (a concept usually applied to traded goods and services, and not patent data), is that they would expect to see this dichotomous pattern 'carried forward' to export data. Hall and Soskice (2001b, 38) were presumably thinking of export success (failure) when they wrote about 'cross-national patterns of specialization'.

For these reasons, it is better to use a measure of comparative advantage that focuses on export success, as this is a fairer means of assessing the arguments propounded by the VoC approach. One such measure is revealed comparative advantage (RCA), which is based on Balassa's (1965) work. Sector j's RCA is calculated for Germany, for example, as follows:

$$\text{RCA} = \frac{(\text{German exports in Sector j} / \text{Total German Exports})}{(\text{OECD Exports in Sector j} / \text{Total OECD Exports})}$$

The numerator in the above term represents the ratio of exports from a given sector divided by the country's total exports; this ratio is then compared to the ratio for the same sector for the OECD as a whole. If the RCA equals 1 for a particular sector, that sector's share of the country's exports is the same as the 'average' for the OECD. When the RCA is greater than 1, the country under consideration has a revealed comparative advantage in that sector. When the RCA is less than 1, the country has a revealed comparative disadvantage in that sector.

Since it takes the 'tradability' of different goods into account, RCA is a more appropriate measure than the one used by Soskice (1999) and Paunescu and Schneider (2004). That is to say, with the measure used by Paunescu and Schneider (2004), many countries may have a 'competitive advantage' in certain goods, because those goods can be, and are, traded more than others; hence, the measure used by Paunescu and Schneider might reflect properties of the goods in question and not the country.

For instance, as Paunescu and Schneider (2004) do not compare one country's net export success (failure) to that of other countries, they have no way of knowing whether or not they are merely assessing the ease with which that product can be exported. It is possible, for example, that one particular product has an above-average export record in one country, which for Paunescu and Schneider would be evidence of trade specialization. If this product has an above-average export record in many other countries, all these countries would, on Paunescu and Schneider's measure, be specialized in the trade of this commodity. Yet the concept of 'comparative advantage' surely requires a measure that *compares* export success (failure) *between* countries and not just within them.

Such a comparison would lead to a more appropriate measure of *relative* export success. For illustration's sake, suppose that many countries export cars, and that they make up between 5 and 20 per cent of their net exports. If we then assume that the 'average' commodity makes a contribution of 2 per cent to net exports in each of those individual countries, all of those countries would, on Paunescu and Schneider's measure, be specialized in cars. However, if cars make up, on 'average', 10 per cent of exports from all OECD countries, only those individual countries in which cars comprise more than 10 per cent of exports will have a *revealed comparative advantage.* Therefore, in order to assess the VoC framework in the most appropriate way possible, we need a measure that *compares* export success or failure across different countries. This is especially true given the theoretical and empirical emphasis within the VoC paradigm on export success between different countries.

3. How should the arguments espoused within the Varieties of Capitalism Framework be assessed?

The main criticism that could be lodged against Paunescu and Schneider's work relates to their choice of statistical techniques used to assess the relationship between institutional frameworks and export success. In short, they employ an OLS regression to analyse combined time series data in a cross-sectional way. The use of a regression technique to assess the validity of Hall and Soskice's arguments overlooks, however, an important aspect of many of the arguments in Hall and Soskice's work. For instance, in many of their arguments, Hall and Soskice rely implicitly on the concept of *necessity* and not on the concept of *sufficiency.* This means that many conventional statistical techniques, such as regression analysis, are unsuitable for assessing such arguments, as these conventional techniques conflate the analysis of necessity and sufficiency (Ragin, 2000, 96).

3.1 The concept of 'necessity', and how it applies to the 'Varieties of Capitalism' approach

A *necessary* cause has been defined by Ragin (2000, 91) as one that 'must be present for the outcome in question to occur'. Its presence does not, however, 'automatically' lead to the outcome. If a factor, in Ragin's words (2000, 92), 'always [produces] the outcome in question', it is viewed as a *sufficient* cause. (See also Ragin (1994, 1997) and, for arguments similar to those of Ragin, Braumoeller and Goertz (2002) and Dion (1998). See Boyer (2004) for an application of the analytical method proposed by Ragin.) In many, but by no means all, of their arguments, Hall and Soskice (2001b) either explicitly or implicitly argue that, in order to overcome the relational problems associated with a strategy of diversified quality production, which they associate with success in medium-tech industries (such as automobiles, machines, etc.), it is *necessary* to have an institutional framework similar to those found in coordinated market economies, such as Germany and Sweden. That is to say, Hall and Soskice do not argue that institutions will always lead to diversified quality production strategies, or in other words, that a certain institutional framework will always lead to success in medium-tech industries. For a more in-depth look at the assumptions underpinning the VoC approach, see Allen (2004).

For instance, Soskice (1999, emphasis added) has argued that 'efficiency [when pursuing a strategy of diversified quality production] *requires* a more consensus-based approach to decision making.' Or, to put it another way, in order for companies that are pursuing a strategy of diversified quality production to achieve efficiency, it is necessary for them to have a consensus-based

approach to decision making. He does not argue that a consensus-based approach to decision making is *sufficient* to lead to efficiency. In a similar vein, Soskice (1999, emphasis in the original) has also spoken of the 'need', or necessity, for companies to have '*skilled employees* with industry-technology skills as well as company-specific product knowledge skills' in order to pursue successfully a product strategy of diversified quality production.

What does this mean for the statistical methods that should be used to assess many of the arguments within the VoC framework? Many statistical techniques, including those used by Paunescu and Schneider (2004), confuse the concepts of *sufficiency* and *necessity*. Such techniques are not designed to test arguments based on necessity alone. In order to do this, one needs an analytical technique that only considers cases in which the outcome under consideration is present. In contrast, arguments based on sufficiency should be assessed using cases in which the suspected causes are both absent and present. This difference in analytical approach is illustrated in Tables 1 and 2: the first shows relevant and irrelevant cases for an assessment of arguments based on necessity, and the second shows the relevant cases for conventional statistical techniques.

Table 1

Relevant and Irrelevant Cases for an Assessment of Arguments based on Necessity

		Suspected Cause	
		Absent	Present
Outcome under Examination (Cases Chosen when this Variable is Present)	Present	Cell 1 (Relevant)	Cell 2 (Relevant)
	Absent	Cell3 (Irrelevant)	Cell 4 (Irrelevant)

Table 2

Relevant Cases used in Conventional Statistical Techniques

		Suspected Cause	
		Absent	Present
Outcome under Examination	Present	Cell 1 (Relevant – counts against)	Cell 2 (Relevant – counts in favour)
	Absent	Cell3 (Relevant – counts in favour)	Cell 4 (Relevant – counts against)

Note: This is the basic approach that is used in many conventional statistical techniques.

In effect, many statistical techniques typically used in conventional statistical research, including regression analyses (Ragin, 2000, 96), compare two populations or samples, one of which has the suspected causal factor, while the other does not. These two groups are then compared to determine whether or not there is a statistically significant difference in outcomes between them. Put simply, 'cases in the cells where the cause and the effect are present or where the cause and the effect are absent count in favour of the inference of a causal relationship, while cases in the two other cells count against it' (Ragin, 2000, 96).

By using a conventional statistical technique to assess the VoC framework, Paunescu and Schneider (2004) underplay the importance of the concept of necessity to those arguments. In consequence, a standard is set for the VoC approach that is too high to pass. The statistical technique used by Paunescu and Schneider assumes that Hall and Soskice, *inter alia,* expect all companies within, for example, a co-ordinated market economy such as Germany to be successful exporters in medium-tech industries. However, as shown above, these are not the expectations of the VoC framework. The VoC approach argues that national institutional settings *can foster* success in certain markets, but it does not expect them to *guarantee* success. In effect, what Paunescu and Schneider do is compare the success and failure rates between liberal market economies and co-ordinated market economies in medium-tech markets. This assumes that it is sufficient for a company to be based in a co-ordinated market economy to bring about its success in these markets, while companies in liberal market economies will find it impossible to succeed.

The fact that many of the arguments in the VoC approach are based on the concept of necessity has consequences for the type of techniques that should be used to assess the VoC approach. Ideally, in the *first* stage of the analysis, cases – in this instance companies – should be chosen according to their success in international medium-tech markets. These successful companies should then be examined to see whether or not they are characterized, for example, by 'a more consensus-based approach to decision making' (Soskice 1999) or by '*skilled employees* with industry-technology skills as well as company-specific product knowledge skills' (Soskice 1999, emphasis in the original). If the former is true, the arguments espoused within the VoC paradigm will be validated; if, however, it is possible for companies to be successful in these medium-tech markets either without a consensus-based decision-making style or without skilled employees with both industry-specific skills and company-specific knowledge, then these arguments must be called into question. In the second stage of the analysis, the relationship, if any, between the national economic institutional setting and consensus-based decision-making should be examined in a similar fashion. In short, in order to have a consensus-based decision-making style, is it *necessary* for companies to be based in a co-ordinated market economy?

Such an analysis would represent the ideal way of testing the arguments propounded by the VoC approach. It would, necessarily, have to compare different companies across different countries, and is likely to be a very arduous task. Thus, it is likely to be beyond the means of just two researchers. The analytical approach adopted by Paunescu and Schneider should not, therefore, be criticized too strongly. This is especially true given that their endeavours to fill an important lacuna in the literature went beyond the use of this particular statistical technique. For instance, they applied a series of well-designed tests to the VoC approach that included the examination of movements of countries between, *inter alia,* the two main categories within the VoC framework.

4. Conclusion

Using the recent article by Paunescu and Schneider as its starting point, this paper has sought to make two suggestions for future tests of the VoC paradigm. First, it has made the case for using revealed comparative advantage as the measure of export success between different countries. This measure, unlike the one used by Paunescu and Schneider (2004), takes the 'tradability' of different goods and services into consideration. It also enables success or failure to be compared between different countries. This is an important aspect of the measure as the main thrust of the VoC approach is to account for the differing degrees of success in certain product markets between different countries.

Second, it has sought to make the case for testing the VoC approach using analytical techniques rather than conventional statistical ones, given that many of its arguments are based on the concept of necessity. Conventional statistical techniques conflate the concepts of necessity and sufficiency, and are, therefore, unsuited to testing the VoC approach. The use of the comparative advantage measures and analytical techniques designed to assess arguments based on necessity may help to improve the otherwise exemplary work of Paunescu and Schneider, which has made a significant contribution to the literature.

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