Can Liberal and Hierarchical Economies Implement the German Model of Vocational Training?

Working Paper

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Introduction

The German "dual model" of vocational training is credited with creating a prosperous, highly skilled working class and low youth unemployment. Governments around the world have attempted to achieve these admirable outcomes by duplicating the dual model system. The literature indicates that the system does work in coordinated market economies similar to Germany's.

However, countries such as Britain and France that lack industry-wide coordination among firms and labor have not been able to successfully implement the system. Rent-seeking and free riding behavior predominates, as firms happily accept state-funded education for their workers, yet do not fulfill their side of the dual arrangement by investing their own resources into worker training.

This is consistent with Hall and Soskice's Varieties of Capitalism theory. Firms in uncoordinated economies fear that investment in employee training will be wasted, as other firms will "poach" trained workers with the enticement of a higher salary. Therefore the state investments in public vocational training are not an effective incentive for firms to increase training. In fact, it may even be a disincentive, as the state-funded training replaces the already-limited training that firms pay for.

Thus there appears to be two variants of the dual model in practice. In coordinated economies there is a successful public-private partnership with impressive results. In non-coordinated economies the system is lopsided, where the state attempts to make a German-level investment
In vocational education but firms do not match that with German-level investments in worker training.

In this paper I examine the effects of these two models as they intersect with a third model of capitalism, the Hierarchical Market Economy (HME) as described by Ben Ross Schneider. Multinational corporations play a large role in the economies of HMEs, and I argue that in certain industries, particularly those which require skilled labor such as automobile assembly, multinationals bring their variety of capitalism with them when they go overseas. Rather than an "atomized" labor force in a perpetual trap of very low skills and wages, automotive workers in Mexico need to be relatively high-skilled.

How firms get those skilled workers in Mexico depends on their home variety of capitalism. German multinationals have created an overseas microcosm of the coordinated market economy, with dual model of training that involves intensive apprenticeships in partnership with Mexican technical high schools, monitored by the German-Mexican Chamber of Commerce. American companies have a much more limited system of in-house training. Instead they work closely with the technical school system so that they can gain trained workers at public expense. School curriculum tailored to the needs of particular multinational manufacturers is reportedly even a part of the package of incentives that local officials in Mexico use to attract foreign investment.

Lack of Coordination

Liberal and hierarchical market economies lack a number of factors that underlie the dual model of worker training in a coordinated market economy. They lack industrywide coordination of labor and industry to facilitate implementation of the programs. Perhaps more importantly, individual firms do not have the incentive to invest their resources in a typical German-style
three-year apprenticeship program, during which time a young person would be attending classes part-time while simultaneously being given on-the-job training at a firm. A time investment such as that is too long for a firm which needs to meet short-term demands for profitability for shareholders, and in a liberal job market there is nothing preventing the newly trained worker from seeking employment at a different firm.

Assuming that an individual rational firm in an LME does not have an incentive for intensive investment in worker training, then several conclusions follow:

1. As a group, firms will have no incentive to self-organize to create industrywide training programs
2. Efforts by the state to encourage industries to pay for their own training programs will be met with indifference and/or resistance, exemplified in the French case.
3. State subsidies for training programs may entice firms to participate, but only insofar as the subsidized training meets their immediate goals and does not entail additional investment on their part, as seen in the British case

Can Non-Coordinated Economies Adopt Dual Model Training?

In absence of industrial self-coordination, the state by default becomes the coordinator of industrial policies. Businesses will influence policy, but coordinating policies will be enacted - and paid for - by the state.

Culpepper notes that a nation's variety of capitalism is not its destiny, that policymakers should not assume that their VoC is a prescription for what policies will or not work. His chapter, however, does not inspire much confidence in that statement. Of his two case studies, he deems the French attempt to adopt the West German training model a failure.
Culpepper examines an attempt by the French government to move French industry towards the German dual model of skills training. The effort failed, simply put, because France is not a CME. Key elements of the difference include:

- A flexibly Fordist production model. The public education system provides workers with general skills, and then on-the-job skills are taught only so that the worker can fulfill a specific role on the assembly line. French firms have no incentive to invest in high-skill workers.
- Weak unions. The flexibility in the labor market allows large firms to use the Fordist model.
- Absence of employer coordination. French firms had no history of self-regulation, and little real incentive to self-regulate apprenticeship programs.

Culpepper's successful case is the East German adoption of West German apprenticeship policies, a case that he portrays as being a particularly difficult transition due to the scale of the policy changes involved. Yet conversely one could look at the path dependency literature and view the transition in East German business practices to have been easier because East Germany was in the midst of a critical juncture in its history (Prado Trebilcock). East German business practices were largely abandoned and replaced with West German labor laws, employer associations, unions, federal government agencies, etc. Rather than a case of a non-CME successfully adopting a coordinated-style policy, it was a case of a CME simply swallowing a non-CME whole. The coordinated policy was a success in East Germany because Eastern Germany became a CME.
The adoption of the German model elsewhere in the former Eastern bloc had the similar advantage of revolutionary change in their economies which enabled them to adopt radically different policies (CITE). But for countries such as Mexico, France, Britain, and the United States, such grand transformations in their economies are unlikely in the absence of radical political change.

The British experience in adoption of a worker training program appears to be faltering for similar theoretical reasons as the French program. As a full LME, Britain uses Fordist production, does not have industry-wide negotiations between firms and unions, and does not have intensive industry-wide coordination among employers.

The German Dual Model involves state support for off-site training classes to complement apprentice on-site training paid for by firms. In its attempts to create its own Dual Model, however, the efforts appear to be rather one-sided. Firms are happy to accept the subsidized training for their employees, but they are not investing any more of their own resources in training. Nor are they changing the flexible Fordist employment relationship, which is the main driver of a semi-skilled workforce.

In 2013 there were 500,000 apprenticeships in England, 300,000 at level 2, equivalent to the GCSE exam taken at 16. Another 200,000 are level 3, equivalent to completion of secondary school at 18. The number of level 4 apprenticeships, which would be the equivalent of post-secondary education, is fewer than 2,000 (Economist 2014).

Firms, therefore, are taking advantage of subsidized training programs for their lowest-skilled employees, without making the commitments to high-skill apprenticeship programs. In fact, the push for greater apprenticeships that has doubled their number since 2010 has coincided in a
drop of 2.4 billion pounds in private-sector training expenditures, leading to the appearance that
government is merely taking on the training expenses that used to be paid by firms.

Critics of the British system note that its flexibility allows it to be exploited by employers who
merely want their low-wage employees to pick up a few skills at taxpayer expense. There are
calls to restrict the program to workers and firms who follow the true apprentice model, a three-
year program of coordinated work and study that leads directly to a skilled occupation.

The difficulty therein will lie in convincing firms in an LME to support such a system. The
current system benefits employers who appreciate that their workers can choose from an "a la
carte" menu of specific low-level skill training classes, paid for by the state with no expense or
obligation from firms. Removing that subsidy will only come at a political cost.

The second difficulty will be in creating support for a rigorous apprenticeship program when
there is little desire for it on the part of firms. Firms in an LME don't benefit from apprentices in
the same way that CME firms do, so they have little incentive to lobby for such a program. The
impetus for a program could come from organized labor, and from elected officials who see
apprenticeships as a way to reduce youth unemployment and ultimately to fight poverty and
income inequality.

Thus for most British firms, a program designed exclusively for intensive post-secondary
apprenticeship programs would be imposed upon them, making it even less likely that they
would participate. Apprenticeship programs would need to be heavily subsidized by the state,
given the low value that LME firms place on worker training. But the basic calculation would
remain, that LME firms have no hold on their workers, so their estimated return on investment
for training is virtually nil.
Thus, to contradict Culpepper, it appears to be unwise to attempt to implement a CME policy in a non-coordinated economy. Attempts to incentivize LME firms to invest more in training may be doomed to failure. The basic return on investment for worker training is low, so firms cannot be induced to spend extra on training. Whatever the state spends to train a firm's employees may simply induce the firm to spend less than what it already was spending.

The model for worker training in LMEs is for workers to acquire general skills through their own education, and then bring those skills to the open job market. Since workers cannot be guaranteed employment in any particular firm or industry, the benefit of those general skills is that they allow them to find employment in whichever firms or industries happen to be hiring. The cost, however, is that having a broad set of general skills means that the worker is not especially productive as using any specific skill. Being able to find work in various industries, the worker may collect a mismatched set of skills at different firms throughout a career, without ever gaining a specific set of productive skills that would make them productive enough to earn a decent wage.

This is the trap that policymakers look to prevent through establishing the German Dual Model of apprenticeship training. However, if that model cannot work in an LME, what can?

*Education in General Skills is the Standard Model in non-CMEs.*

Unlike in a CME, companies in LMEs and HMEs have reason to fear that highly skilled workers would leave for other companies. Any investment they make in training workers, therefore, is at risk of walking out the door. A CME can invest in training for its workers knowing that they are unlikely to get a better salary elsewhere.
LMEs and HMEs, therefore, want trained workers but they do not want to pay for the training. The workers can pay for the training themselves or the government can pay for the training. The community college model in the United States is an example of this. In California a community college education costs approximately $5,000 per year, with 80% of the costs paid by the state and 20% paid by student tuition. in programs such as Welding Technology or Computer-Integrated Machining Technology(CCCCO 2014).

So, if companies won't pay for training, and working-class individuals can't pay for the technical training needed for highly skilled working-class jobs, the state by default needs to pay for it. Although some might balk at what appears to be a state subsidy to industry, there are several arguments in favor of such spending:

1. State subsidies of public university education is largely enjoyed by middle and upper class students, and in many cases benefits students who could afford private school. Public spending on vocational training, however, is much more likely to benefit low-income students who otherwise could not afford post-secondary education.

2. The practical argument is that there simply is no other way to do it. If an LME, or an HME, or a Mediterranean economy wants to increase the skill levels, productivity and wages of its workers, then the state will simply have to pay for that training.

The problem, however, is one of targeting the skill education. As is noted in the VoC literature, the productivity return is much lower from general skills education. For example, with four years of training, a worker can become a highly paid expert in the narrow field of arc welding, or get a bachelor's degree in the humanities which could be applied for lower wages in a wide variety of fields.
The targeting of public vocational education, therefore, is a two-directional process. First, industry needs to let the public schools know what courses will give workers the skills that industry needs. Second, potential vocational students in these programs need to be confident that the skills they learn will be useful to them throughout their careers, in a perpetually uncertain job market.

Figure 1: Ideal skills for publicly funded vocational training

Thus public funding for vocational training will be utilized if it meets both conditions, of skills that are portable enough to be worth a worker's time to learn, and will be industry-specific enough to enhance productivity and meet the needs of firms for skilled workers.
Under ideal conditions, such a system would be sufficient to compensate for the shortcomings of vocational training in LMEs. Workers would be able to become highly skilled at public expense, and firms would have a ready supply of skilled labor without having to worry about the "training leads to poaching" problem. Perhaps such a system might not be able to reach the peak productivity and incremental innovation of the German model, but a properly targeted educational system with sufficient funding could certainly increase worker skills.

Following the VoC theory, worker and firm preferences could determine which courses would be both specific enough for employers, and portable enough for workers. Employers could work with the public vocational schools to offer training in the skills that they need. Trainees then would choose the programs that best suit their needs. Any courses that trainees deemed as too narrowly focused for the uncertainties of the job market would simply have low enrollment and be dropped from the program over time.

**The United States - a Liberal Approach to Training**

To some degree, this is exactly what happens in the United States. Cooking schools, auto mechanic schools, electrician schools, and community colleges offer technical degrees in industry-specific training courses. These programs (the reputable ones, at least) have coursework that is constantly refined to meet the needs of local industry, and are publicly funded either directly or through subsidized student loans.

When viewed from this perspective, then, the distinction begins to blur between LMEs which (according to theory) train workers only in general skills, and CMEs which train workers in industry-specific skills.
The Mexican Case

As a Hierarchical Market Economy, Mexico's economy is directed by two forces: large, family owned conglomerates and multinational corporations (MNCs). Apart from a handful of industries such as food processing and cement production, the manufacturing sector in Mexico is dominated by MNCs.

According to HME theory, multinationals in Latin America have even less of an obligation to their workers than firms do in liberal economies. Labor is "atomized," with unions virtually nonexistent in the private sector. Mexican workers enjoy significant legal protections, such as generous severance pay, but many manufacturers (domestic and MNC) find their way around the laws by employing a large proportion workforce through temporary agencies. This makes for the ultimate in a flexible labor force: production lines can be opened or closed on a day's notice without needing to pay idle workers or severance.

In addition, the presence of a vast labor pool in the informal sector (some 60% of Mexican workers) means that firms can always find someone willing to work in an unskilled position for the minimum wage of 67 pesos (US$5.15) per day. This is a tremendous downward pressure on wages for all low-skilled workers, which according to HME theory is to the MNC's advantage, as cheap labor is generally the primary reason that they operate in Mexico.

Incentives for Training HME Workers

Economic development, poverty, inequality

Although dependency as a whole may have been largely discredited, there is a growing sense among Mexican policymakers that a purely hands-off neoliberal economic policy towards multinationals may not be fulfilling its promise of economic development. In particular, foreign
investment attracted purely by the low cost of Mexico's low-skill labor is of limited use in national economic development, as it simply creates incentives for provision of more low-skill labor. The only way for Mexican citizens to rise out of poverty will be through the creation of higher paid jobs, which will require more highly skilled workers in industries that are higher up the value chain.

**Attracting and retaining foreign investment**

Mexico occupies a difficult position in the global economy, along with countries such as Brazil, Turkey and Thailand, as one of the manufacturing centers which have a moderate level of technological development comparable to China's, but without China's advantage in lower wages and enormous internal market. As such, competition for FDI is intense, and Mexico's ability to provide labor that is both skilled and relatively cheap is key to attracting and maintaining it.

To begin with, Mexico can look to one industry that already has been a success in moving up from the position of low-wage assembly work: the automotive industry.

Mexico is the world's eighth-largest automaker, producing three million cars per year, more than Britain and France combined. 40% of cars in the United States were at least partially made in Mexico. Many major Asian, American and European manufacturers operate facilities there that are as modern as their plants back home, plants that need skilled labor. Auto assembly workers make an estimated US$10 per hour, approximately eight times the minimum wage.

Interestingly, it is in this industry where three different varieties of capitalism - the American, the German, and the Japanese - interact with Mexico's hierarchical market economy. Although much of the multinational investment in the Mexican auto industry predates NAFTA, free trade with
the United States has been the impetus for a boom in production. Mexican auto production has tripled in the twenty years since NAFTA was first implemented.

For North American manufacturers, Mexico offers the ability to utilize lower foreign labor costs at plants that are relatively close to Detroit. For Asian and European manufacturers, Mexico offers low wages and a manufacturing base inside NAFTA. This gives them free trade and low transport cost access to the U.S. market, and to the smaller but significant Mexican auto market.

**Liberal Model in Mexico: Utilize Publicly Educated Workers**

In industrializing states such as Guanajuato, four hours north of Mexico City, foreign investors find two advantages. First, there is a longstanding history of manufacturing in the region, which has long been the center of the shoemaking and leatherworking industry in Mexico. Secondly, the local regulatory apparatus is in their favor. State and local government is solidly in the hands of the pro-business National Action Party (PAN), and Guanajuato is the home state of Vicente Fox, former Coca-Cola executive, and the PAN's first President of Mexico (2000-2006).

These two factors have led to a strong state push for technical education. Of the eleven publicly funded "media superior" schools (for 15-19 year olds) in Leon, nine of them are technical schools and only two are for general education/college prep.

Local and foreign companies are deeply involved in the education at public vocational schools in a variety of ways:

- Executives and floor managers at local firms are regularly consulted about school curriculum
- Firms donate used equipment to the schools for use in training

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1 Interview with Miguel Aguilar, assistant director of the Technical University of Tijuana, August 6 2013
Coordinated Model in Mexico

In stark contradiction to HME theory predictions that firms would not invest in training their workers in Mexico, German firms appear to be implementing Dual Model training programs throughout Mexico.

In Puebla, two hours east of Mexico City, the Volkswagen plant has been the anchor of the German auto industry in Mexico since 1964. Currently nearly 15,000 people are employed at the site. Volkswagen trains Mexican employees using German standards on-site, and sends its top employees for further training in Germany.

Other German companies such as Siemens and Bertelsmann participate in full apprenticeship programs in partnership with the Mexican government CONALEP system of secondary technical education. The program was temporarily discontinued after the economic downturn of the early 2000s, but currently enrolls 1200 trainees.

This raises numerous important questions. How is it that German companies find it useful to use CME training methods in defiance of the logic of the "atomized" low-skill HME workforce? In Mexico's extremely flexible labor market, why aren't German companies afraid that other firms will poach their trainees?

This question is not one that can be answered by reading government reports and company brochures, and will require deeper investigation that I will undertake this summer with in-person site visits and interviews. But it is possible to build upon VoC theory to generate a number of hypotheses as to why German companies contradict HME theory:
H1: German companies are simply the best employers in Mexico. German companies are known for allowing workers at their foreign operations to enjoy generous German-level benefits for vacation time, maternity leave, etc. that often far exceed what is typical in the local country. Coupled with high wages, Mexican workers who train with a German company may conclude that their best career option is to remain within the company.

H2: CME Employer Microcosm: CAMEXA, the German-Mexican Chamber of Commerce, is a central actor in the apprenticeship program. As the German multinationals in Mexico are all tied into their employer associations back in Germany, it is quite possible that they have established industry-wide wage standards in Mexico among themselves, in parallel to the wage standards in Germany (albeit at a much lower wage level). This would prevent the risk of one German company in Mexico poaching from another one.

H3: Loyalty and job security: For a Mexican manufacturing worker, presumably from the lower middle class, the ability to make $80 per day in legitimate, stable employment, without having to emigrate to the United States, is a rare opportunity. Having passed through a three-year apprenticeship with a German company, the worker may simply feel grateful for their job and remain loyal to the company, without being tempted by offers of slightly higher wages elsewhere. Assuming that German companies in Mexico have the same CME ability to keep their workers employed through downturns rather than firing them, then the firm can make a credible claim that a worker has the best chance of a stable career by sticking with them. Why leave an excellent German job for a higher-paying American one, if the American company might end up laying you off in the next recession?
H4: Non-Fordist manufacturing techniques. The German high-skill assembly model requires workers to be able to self-manage and master various aspects of the assembly process. If they use the same types of assembly lines in Mexico as in Germany, they would need similarly high-skill workers.

H4: Pressure from German unions: German unions are justifiably concerned that overseas operations of German multinationals may erode their position in the home country. If German companies are allowed to operate with lower wages, lower benefits, and lower working standards abroad, then that will increase their leverage to lower them in Germany as well. So whether or not CME-style training programs actually work in Mexico, German companies may be forced to use them anyway as part of their industry-wide agreements with labor unions back home.

**Conclusion**

The desire by many of the world's governments to duplicate the success of the German model is a laudable goal, but the issue of "poaching" has proved insurmountable for non-coordinated economies. This leaves states with the option of facing the realization that increasing vocational training will only come at taxpayer expense. Mexico's heavy investment in public vocational training indicates that Mexican officials consider educational training in manufacturing skills to be money well spent.

The German experience in Mexico runs counter to theory. Why don't German firms in Mexico simply do as American firms do, and let the government pay for a minimal level of vocational training? It may be due to their manufacturing techniques, their negotiated deals with labor unions back home in Germany, or the fact that the relatively high-paid workers in Mexico aren't likely to chase slightly higher salaries elsewhere.
Whatever the German cause, the automobile industry as a whole is an example of that runs counter to assumptions about the role of multinationals and the perpetually low-skill and low-wage workforce in hierarchical economies. The principle of a "race to the bottom" of multinationals seeking the lowest possible wages only applies to unskilled labor.

Unskilled labor in places like Bangladesh can't produce high-quality manufactured goods such as automobiles, but Mexico, Thailand, Turkey, Brazil and of course, China have the capabilities for modern manufacturing. It could perhaps be called a "race to the middle," as developing countries attempt to move up to producing first-rate, first-world quality products and multinationals seek such high-skill labor at lower prices.
References

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