Policy design and Path Dependence:
Why do Mexican policies produce unusual results?

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And I was horrified at the thought
that things conceived in error
are just as real as things conceived
with good reason and of necessity.

Milan Kundera, The Joke

This paper seeks to clarify an apparent paradox regarding higher education policies in Mexico. By 2013, Mexican universities remained doing poorly in any international comparison. At the same time, government officials boasted about the progress made, thanks to the successful implementation of policies since the 1980s. As such, Mexican policies seem to produce outcomes that are different than those in other countries.

Explaining this contradiction is the purpose of our paper. We will look back at the past 25 years and analyze why certain policy decisions were made. This analysis of the past will serve as the backbone for our forecast of probable future scenarios.

Our analysis will be different from most others: research on Mexican policies has been mainly descriptive, narrating the implementation of different initiatives. Some research has been slightly more analytical, comparing the results or unexpected side-effects of policies to the initially proclaimed goals. On the whole, however, these studies fail to

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explain why, compared to other countries, Mexican policies are different and produce
dissimilar results.

In our analysis, we will look at a central construct in organizational theory, called
“path dependency”. In organizational research, path dependency describes the mechanisms
that link the past with the future. In our analysis, we seek to explain under which
circumstances path dependency occurs, what the role of several actors is, and when it leads
to inefficiencies or the persistence of problems policies sought to change.

We will especially explore the existence of third-degree path dependence. While in
the first and second-degree stages mistakes can be made, these are mostly due to
incomplete information and do not produce inefficiencies. However, “third-degree path
dependence requires not only that the intertemporal effects propagate error, but also that the
error was avoidable” (Liebowitz & Margolis, 1995).

We will explore the empirical existence and the consequences of third-degree path
dependency by comparing developments in the Mexican public university sector (subject to
public policies) with developments in the private sector (not subject to public policies), and
with changes in other countries. Our conjecture is that third-degree path dependency does
exist in Mexican higher education policies. Its presence, however, is not based on
“historical reasons”, but rather originates from particular (erroneous) visions held by central
actors of how public universities should be reformed. The resulting policy regime explains
the permanence of inefficiencies and errors, which benefits certain interest groups, but also
limits the options for future reforms.

**Different ways to analyse policies**

Policies are considered as courses of action put in place by the government in order to solve
a specific problem. In theory, policies are formulated when a problem reaches the agenda of
policy makers and some kind of action has to be taken. Once an issue is defined as a
problem, the situation is analyzed and a solution is proposed. The next step in the process is
implementation: the policy has to be put in practice. This means that lower levels in the
governmental hierarchy need to take actions, in order to modify the behaviour or the
situation of the final target group of the policy. Finally, after a certain span of time, the
outcomes of the policy have to be evaluated, and decisions have to be made about the
continuation, cancelation or modification of the policy. From there on the policy circle starts anew.

This model has received many criticisms for being far too simple and for presupposing strictly rational decision making. Following the sequence of the different stages, the first one of policy design turns out to be far more complicated in practice: policy makers have only partial information regarding the problem and its possible solutions, have limited resources, have to act under stress, which leads to bounded rationality (Kingdon, 1984; Powell & DiMaggio). Under such circumstances tend to turn to policies or strategies that proved to be effective in the past, or to borrow policies from other countries (Robertson & Waltman, 1992). As a result, a policy may turn out to be not the optimal solution, but rather the best possible.

The second stage of implementation also has been object of many studies, that describe numerous factors that influence the process and that can lead to that the original intentions of the policy can be modified or distorted (Ripley, 1985; Cerych & Sabatier, 1986) (Ripley, R. (1985) Policy Analysis in Political Science, Chicago (IL): Nelson-Hall; Cerych, L. and P. Sabatier, 1986, Great Expectations and Mixed Performance: The Implementation of Higher Education Reforms in Europe, Stoke-on-Trent: Trentham Books). However, research on implementation has mainly highlighted the factors that impede correct implementation, such as the degree of change, the complexity of the policy, or the lack of clear procedures or instructions. Several empirical studies have put in doubt these suppositions. As Kogan (2005) points out, there have been proposals for gradual change that have not prospered, and radical proposals that have, contradicting forecasts.

The stage of results or outcomes is even more complicated to analyze. One obstacle is to define the point in time when reforms produce real and measurable change. Most policies proclaim change in the long term; others declare goals that are difficult to verify (improving quality). Another factor to take into account is the depth of change: some reforms can be superficial, others profound.

An additional complication is to assert in how far changes are due to policies. From the perspective of policy makers, positive changes tend to be considered the result of their policies, while negative outcomes are ascribed to a lack of policies or to resistance to change on behalf of the institutions. However, institutions not subject to policies tend to
change as well, and there is an increasing literature on forces of the market provoking changes. This however poses new challenges for analysis, as market forces itself are shaped by the state.

Path dependency
In order to analyze Mexican policies, we will use the notion of path dependency. There are different definitions of PD, but in organizational research the term is used to describe how the past shapes decisions and their outcomes. Decisions, from this perspective, are taking place in a context of already existing rules and regulations (formal and informal) that shapes the behaviour of actors. According to North (year), organizations (as a group of actors united around common goals) are defined by institutions (the rules of the game). Once these rules become institutionalized they create path dependency. As a result, organizations become resistant to change.

Research on reform in higher education has used the concept of PD in order to explain why similar public policies produce different outcomes. Comparative studies (de Boer et al, 2007, Hood et al, 2004) have pointed out that, even though several governments have formulated apparently similar policies and goals, in practice in each specific context differences persist due to different PD that persist within each system. For example, De Boer et al. (2007) describe how changes in five countries are shaped by the historical context of each system of higher education and by the specific relation between higher education and the state or other stakeholders, creating several PD.

However, this focus on PD offers only limited elements to the analysis, as it primarily explains resistance to change. From this perspective, policies that seek to reform are confronted, in the stage of implementation, by resistance from organizations actors that are acting under already existing and institutionalized rules, and as a result changes tend to be gradual. This however aggregates little to the traditional focus of policy implementation as formulated by Lindblom (1959) or Cerych & Sabatier (1996) (The ‘Science’ of Muddling Through, de Lindblom, C. E., Public Administration Review, No. 19, 1959).

Mostly absent in these analysis are the policies itself. Policies are seen as actions from the government or from the outside to alter the rules in place within the organizations. While this provided an adequate description in the 1980s, when governments started to
formulate innovative policies, it should be considered that after three decades most policies have become institutionalized, i.e. they have become new path dependencies. In doing so, they have stopped to challenge the traditional rules of the game, and in many cases they have become the rules of the game.

According to Margolis y Liebowitz (1995) there are several degrees of Path Dependency:

- First degree PD. A minimal form of path dependence is present whenever there is an element of persistence or durability in a decision. Once a decision has been taken, actors tend not to change their decision in the light of minor changes in their surroundings.

- Second degree PD. Since information is always imperfect, and individuals fail to predict the future perfectly, it is likely that *ex ante* efficient decisions may not turn out to be efficient in retrospect. Here the inferiority of a chosen path is unknowable at the time a choice is made, but we later recognize that some alternative path would have yielded greater wealth. In such a situation there is a dependence on past conditions that leads to outcomes that are regrettable and costly to change.

- Third degree Path Dependency. Decisions made in the beginning were not the best alternative from the outset, and introduced inefficiencies that could have been avoided (“remedial inefficiencies”). Perpetuation of the policy leads to ever greater inefficiencies, but policy becomes hard to change because of vested interests.

As Liebowitz & Margolis observe:

“The three types of path dependence make progressively stronger claims. First-degree path dependence is a simple assertion of an intertemporal relationship, with no implied error of prediction or claim of inefficiency. Second-degree path dependence stipulates that intertemporal effects together with imperfect prediction result in actions that are regrettable, though not inefficient. Third-degree path dependence requires not only that the intertemporal effects propagate error, but also that the error was avoidable.” (Liebowitz & Margolis, 1995) (Liebowitz, S. J. and Margolis, S. E. (1995) “Path dependence, lock-in and history”, *Journal of Law, Economics, and Organization* 11: 205-226.)
So, from this perspective, policies should be analyses not only from the perspective of their institutionalization or path dependency, but also regard the degree of path dependency. As such, it opens the possibility to typify policies as mistaken from the outset, successfully implemented and perpetuated, but leading to increasing inefficiencies and the propagation of errors.

According to Liebowitz & Margolis (1995), third degree Path Dependency is exceptional in the business world, where the perpetuation of errors sooner or later leads to bankruptcy. In the case of higher education the case is less clear, as publicly funded universities may thrive by adopting public policies, however erroneous, because they will receive additional funding.

Our analysis in this paper will describe that third degree path dependency exists in Mexican Higher Education, and will look at the implications for the future.

**Path dependency in Mexican policies**

There are several examples of third degree dependency in Mexican policies. For example, López-Zárate (Year) has pointed out that the model of strategic planning introduced by the federal government by 2000 has lead to an increasing bureaucracy, with increasing costs and inefficiencies, and all leading to the allocation of a small amount of the budget. Furthermore, as López-Zárate observes, strategic planning was introduced in Mexico when it already was abandoned in other countries for being considered erroneous.

But in this paper we will analyze another case, that of the regulation of academic work. In this area, several policies have emerged over time. In 1984, the federal government created the National System of Researchers (SNI in Spanish), in order to avoid that, as result of the financial crisis, high ranked researchers would leave for better jobs abroad. The program consists in the creation of a central governmental agency, linked to the National Council for Science and Technology, which evaluates the productivity of individual researchers. Depending on the results of the evaluation, the researcher receives monthly payments that are considered as stipends, not as salary. The policy was launched as a temporary program in order to mitigate the crisis, but continues till today.
In the 1990s, additional schemes arose. First, the federal government introduced a special fund to award merit pay or incentives to academics based on their productivity. This program is operated by the public universities but under federal guidelines, en consists in a complex tabulator where points are assigned to various activities (publications, teaching loads, degrees obtained, conferences attended, etc.). Professors have to submit proof of their activities once every two years, and, according to the points obtained in their evaluation, they receive additional funds, that, once again are considered stipends, not salary.

Second, in 1996 the federal government introduced the Program for the Improvement of the Professoriate (PROMEP). Initially, this program provided mainly financial support to professors for postgraduate studies, with the goal of increasing the number of full-time academics with a PhD. Later on however, the program introduced the PROMEP Profile, a sort of ideal professor who dedicates himself or herself “with equilibrium” to four functions: teaching, mentoring, research and management (PROMEP, year). In order to qualify for the PROMEP Profile, a professor needs to have a postgraduate degree and to submit proof of his activities to the Undersecretary of Higher Education. Once admitted they receive a one-time payment to improve their working conditions. Additionally, these Profiles are supposed to work together in Academic Bodies, groups of professors working together around common lines of research and a part of an educational program. In order to qualify as an Academic Body, the group has to submit proof of its existence to the Sub-secretary, which judges its degree of consolidation.

After around 2000 the several policies started increasingly to interact: being a member of the SNI and to have a PROMEP Profile generates extra points in the program that awards additional payments in each university. In several universities, access to research funding has become dependent on having the PROMEP Profile and belonging to a recognized Academic Body. Decisions about tenure have also become more dependent on compliance with the Profile and being a member of the SNI.

**Signals of third degree path dependency**

While in the 1990s these policies seemed to have limited effects and participation was optional, after 2000 they increasingly became mandatory for full-time faculty who wanted
to obtain additional funding. But from an organizational point of view, they also became institutionalized. At the governmental level, special offices were created to operate the SNI and the PROMEP programs. As the number of candidates and members grows, so do the paperwork and the complications for evaluation: at the start of the SNI, in 1984, the system registered 1,369 members, but by 2013, the number reached 19,659 (Atlas de la Ciencia en México, 2013). In the PROMEP case, full time academics registered rose from 22,907 in 2002 to 31,542 in 2011, while the number of academics with the PROMEP Profile changed from 6,660 in 2002 to 16,054 in 2011. In 2002, 2,789 Academic Bodies were registered, of which 19% were judged as consolidated (SEP, 2011). In the case of the merit pay program, about half of full-time academics participate, around 15,000 individuals.

If one considers that all these evaluations run their separate course, and have their own time span (SNI member are evaluated every 3 or 5 years, but have to submit an annual report, PROMEP profiles have to submit evidence every 2 or 4 years, merit payment programs consider an evaluation every 2 years), it is evident that thousand of academics have to be evaluated every year. This implies that an increasing number of administrative personnel have to be hired by the federal government to coordinate evaluation procedures.

Within individual institutions, the same phenomenon occurs: special offices arose to organize evaluation procedures, to receive paperwork, and to add up points. Universities set out to introduce formal structures to evaluate professors and to send their papers to the federal government.

The institutionalization also takes place through an increasing amount of rules and regulations that have become imbedded within universities. Here an interesting phenomenon occurs: in most universities no clear regulations existed regarding the hiring, permanence, promotion and tenure for academics. In these cases, public policies have superseded existing rules or have filled the void. Nowadays, the federal Secretary for Higher Education, from its offices in Mexico City, evaluates academics to assess whether or not they comply with the ideal Profile. These evaluations have also become increasingly linked to strategic planning exercises, where universities present development projects in order to obtain additional funding, and in the accreditation of programs (Rubio-Oca, 2006). Thus, gradually a new type of professor was introduced: one that is full time, has a PhD,
and combines research and teaching on a regular basis (Urbano-Vidales, Aguilar-Sahagún y Rubio-Oca, 2006, p. X).

These policies have also institutionalized through “myth and ceremony” (Meyer & Rowan, 1977): year after year, universities pride themselves for registering the most Academic Bodies and PROMEP Profiles, or the number of members of the SNI. Government officials visit universities to hand out diplomas to those who comply with the new rules, diplomas that generate additional points for merit pay. Integrants of Academic Bodies come together for photo sessions, and for every meeting an official document is elaborated, signed by officials and the participants. A whole new culture of proof and accountability has emerged.

While it is clear that these policies have become institutionalized, there remains the question if this is a case of third degree path dependency. Several aspects point into that direction:

A first aspect concerns if this was the best available option. In the case of the SNI, one could argue that, in 1984, it might be considered as the best available option in times of crisis, as it was conceived as a sort of emergency plan. Even so, the Mexican government at the time introduced something unusual: a nationally coordinated reward scheme that compensates researchers for their effort in producing articles and papers. In the case of subsequent reward programs, it is more doubtful if this was the best available option: academics are evaluated by the government through complicated procedures, bypassing local rules. These policies also evade local decisions regarding hiring and promotion of academics, as well as salaries. Furthermore, these policies are completely different from those in other countries.

A second crucial question is whether the central assumption underlying these policies holds true. The central assumption for decades consists in that, by increasing the number of full-time faculty with a PhD, and by introducing reward systems based on the evaluation of their productivity, research and teaching will improve.

This assumption is highly doubtful, from different angles: as to research, this activity remains concentrated in a few public and private universities, and mainly in the Universidad National Autónoma de México (UNAM): by 2013, the UNAM alone accounted for roughly a third of all scientific articles produced by Mexican researchers and
indexed by the ISI Web of Knowledge. The second ranked Mexican university was the Instituto Tecnológico de Estudios Superiores de Monterrey (ITESM), a private institution (Odorika & Lloyd, 2013). Academics from both institutions do participate in the SNI, but do not partake in the PROMEP Profile and Academic Bodies.

Even so, these flagship institutions are doing poorly in international rankings: in 2011, the UNAM ranked 169 in the QS ranking, and the ITESM at 320. Other Mexican universities do not qualify among the first 200. Though one may criticize international rankings for their focus on specific activities, it should be considered that Mexican federal policies, starting with the SNI, always have sought to position Mexican universities among the best world-wide. Even so, Mexican universities are poorly positioned in international rankings, even below similar countries like Brazil, Chile and Argentina, and public universities are not doing better than private universities in the area of scientific production. If one considers publication in indexed journals, Mexico stands in the 34th position, even though it is the 8th economy in the world. So, after year of applying these policies, no changes have occurred.

This leaves the possibility that teaching might have had improved. Here data are limited and sketchy. However, several studies (Luna-Serrano & Arámburo-Vizcarra, 2013; Estévez-Nenninger, E. H., 2009; De Vries, et al., 2008) have found that full-time academics with a PhD, who are a member of the SNI and PROMEP and receive additional merit payments, are not better evaluated by their students than part-time teachers, who are excluded from all benefits and receive low wages. In any case, the ideal type of professor has a very limited impact on undergraduate education: part-time faculty still makes up for 70 percent of professors, and teach around 85% of undergraduate courses (De Vries, et al., 2008).

A third point is that inefficiencies have continued or have increased over time. Here, the yearly evaluations of academic productivity at the national and institutional level imply increasing administrative costs. Additionally, academics who comply with the rules of the different evaluations have to be paid additional stipends. On many occasions, full-time academics are able to double their income through additional stipends. In practice this means that a full-time academic, who teaches around four hours a week, receives over 50 thousand pesos per month, whereas a part-time academic, who teaches 18 hours per week,
receives only 3 thousand pesos a month. It also means that merit payments represent an ever increasing part of the budget of government agencies: the budget of CONACYT has remained at less than one percent of GNP, but the number of members of the SNI has risen from 1,369 to nearly 20 thousand. In this sense, the success of the different federal policies also predicts its future failure: while the government proudly announces that more and more academics comply with the new rules, it forgets to point out that the costs are rising as well.

Implications for the future

The policies regarding academic work thus seem to comply with the title of a song by Elvis Costello: “It was a fine idea at the time, now it’s a brilliant mistake”. The introduction of path dependency in this area has important implications.

A first is that these policies, although strongly criticised from the outset (de Vries & Alvarez, 2005), have introduced several perverse effects, but cannot be terminated. With nearly 20 thousand academics receiving additional income from the SNI, and nearly 16 thousand academics being recognized by PROMEP, drastically altering these policies would mean a major conflict. Apart from academics benefitting from these programs, there is also a huge bureaucracy dedicated to these programs. It is in this area where the apparent paradoxes arise: while Mexico might not do well in international comparisons, policy makers tend to point out that policies have been successful, since there are more and more academics in the SNI and with a PROMEP Profile.

A second implication, however, is that these policies seem to be unsustainable in the near future. Including more and more academics in the SNI, PROMEP and merit pay implies an increasing burden on the budget. As all policies assign stipends, not linked to salaries, problems begin to appear when academics come close to the age of retirement. For these highly ranked academics, retirement would mean the loss of at least half of their income, and most of them prefer to continue working. At the same time, this obstructs the hiring of new professors, who also face the problem of not complying; at the start of their career, with the requisites of the SNI and the PROMEP, and are thus condemned to very low salaries. In order to supply for the generational change, the system would need several millions of pesos. A central problem is that the policies of the last two decades have not
attended salaries and pension plans, and have mainly addressed, through merit pay, academics of an advanced age (the average age of academics in public universities is 58 years).

A third problem is that these policies, despite important investments, did not improve research and teaching. Mexico keeps lagging behind other countries when it comes to research productivity. Progression in teaching and learning is also doubtful. Mexico does not seem to better than other countries that did not introduce complicated evaluation programs, linked to stipends and rewards.

Thus, policies in Mexico seem to respond to third degree path dependency: the original policy decision was erroneous, or at least highly doubtful. However, these policies have become fully entrenched in both the federal and institutional bureaucracies, and the beneficiaries might criticize these policies, but will at the same time staunchly defend them.

In conclusion: at the beginning of the 1990s, the central question was if policies could change the system of higher education. By 2013, the central question seems to be if it is possible to change erroneous policies.

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