



M-form hierarchy with poorly-diversified divisions: A case of Khrushchev's reform in Soviet Russia[☆]

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ABSTRACT

We test the premise of the theoretical literature that M-form political hierarchies are effective in creating yardstick competition between regional divisions only when those divisions have sufficiently diversified or similar industrial composition. The reason for this is that the competition among poorly diversified inter-related divisions creates incentives for regional leaders to pursue policies that inhibit industrial growth in neighboring regions in order to make their own region look better from the point of view of the center. We use a unique episode in Soviet history, when a traditional Soviet unitary-form (U-form) hierarchy was replaced by a multidivisional-form (M-form) organization, namely, Khrushchev's *Sovnarkhoz* reform. First, we demonstrate that during this reform regional leaders were subjected to relative performance evaluation, which created incentives to generate industrial growth. Second, we show that these career concerns resulted in higher growth in regions with sufficiently diversified and, therefore, self-contained economies, and lower growth in highly specialized regions.

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1. Introduction

Career concerns are an important determinant of performance of any political hierarchy. They, in turn, depend on the organizational form of the hierarchy. Starting with [Chandler \(1962\)](#) and [Williamson \(1975\)](#), an extensive theoretical literature considers incentive aspects of M-form (multidivisional form) and U-form (unitary form) hierarchies. The form describes the way of organizing a hierarchy into divisions: the classical M-form hierarchy is comprised of a collection of territorial divisions implementing the same tasks, whereas the U-form hierarchy is organized along functional lines and consists of a number of departments implementing complementary tasks on the same territory. [Maskin et al. \(2000\)](#) show that U-form and M-form

hierarchies differ in the quality of incentive schemes that can be given to division managers. In particular, M-form permits a more effective relative-performance evaluation compared to U-form. Under the assumption that the territorial divisions of the M-form are comparable and self-contained – i.e., division heads can pursue policies that affect performance only of their own division and not of the other divisions – relative-performance evaluation creates yardstick competition (e.g., [Holmstrom, 1999](#) and [Shleifer, 1985](#)) that encourages good performance ([Maskin et al., 2000](#)). In contrast, if territorial divisions are inter-related and the policies pursued in one division can affect performance of another, high-powered career concerns created by relative-performance evaluation result in negative inter-divisional externalities and can be detrimental to performance of the hierarchy (e.g., [Cai and Treisman, 2004](#) and [Xu, forthcoming](#)).¹ This is because division heads have incentives to pursue policies that hurt growth in neighboring divisions in order to make their own division look better from the point of view of the center. The aim of this paper is to test this empirically using the unique episode of a drastic reorganization reform conducted by Nikita Khrushchev in the Soviet Union, namely *Sovnarkhoz* reform, which dismantled the traditional U-form

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¹ See also [Musgrave \(1969\)](#) and [Oates \(1972\)](#) in the context of fiscal federalism.

organization of Soviet industry and organized it along the lines of M-form multi-regional hierarchy.

So far, the literature made a comparison between the Soviet and Chinese economies, in which the Soviet economy was considered as an example of a U-form hierarchy with political and economic orders directed via highly-specialized sectoral ministries, while the Chinese economy was viewed as an example of an M-form as it is comprised of relatively self-sufficient provinces (e.g., Qian and Xu, 1993; Maskin et al., 2000; Qian et al., 2006, Xu, forthcoming). The literature highlighted a tradeoff between superior incentives schemes, better provided by the M-form hierarchy, and economies of scale (arguably) better utilized by the U-form. As Xu (forthcoming) points out, however, an important pre-condition for the success of the Chinese M-form hierarchy is that “Chinese regions [...] have historically been and remain relatively self-sufficient in that each region contains multiple economic sectors” (Xu, forthcoming). Xu argues further that China is a very special case, as “regional specialization in Russia, or more generally in the CIS and Central-Eastern European countries, is much higher than that in China” (Xu, forthcoming). In this paper, we empirically examine the functioning of an M-form (compared to a U-form) under the condition of poorly-diversified regions. Using regional-level panel data for Soviet Russia, the largest republic in the USSR, we first demonstrate that Khrushchev’s *Sovnarkhoz* reform, indeed, introduced a system of evaluation of relative performance in regional industrial growth as a way to provide career concerns to the regional leaders of Soviet Russia, and that such system was largely absent both before the reform and after its reversal. Second, we test the hypothesis that yardstick competition created by M-form is efficient only when divisions are self-contained by showing that the reform had differential impact on regional performance depending on the level of diversification of regional economies. In particular, we find that the reform had a positive effect on the industrial growth only in regions with sufficiently diversified economies, whereas it had a negative impact on the industrial growth of highly specialized regions. As a result, the average effect of the *Sovnarkhoz* reform was not significantly different from zero. In addition, we provide some evidence that horizontal social networks of regional leaders (measured by common experience in the higher party school) can partly mitigate negative inter-regional externalities created by the M-form hierarchy with poorly diversified regions.

Overall, our main contribution is in providing empirical support for the theoretical notion of the limitations of the M-form yardstick competition, as it is beneficial for the performance of the hierarchy only when territorial divisions are self-contained. Our results also highlight the importance of the regional-level industrial structure of the respective economies for the Soviet–Chinese comparison. Xu (forthcoming) argued that the M-form organization in China caused faster rates of economic growth than the Soviet U-form economy. However, just as Xu (forthcoming) argues, our results show that this comparison is driven by the underlying differences in the level of diversification and self-sufficiency of the regions.

Our paper is also related to the empirical literature on career concerns in hierarchies. The first step in our analysis is similar to the analyses in Li and Zhou (2005), Chen et al. (2005), and Gang (2007), who show that the main criterion of promotion and demotion of provincial government officials in China have been the provincial growth performance relative to the average performance and to performance under the predecessor. We reproduce their findings on the importance of the relative-performance evaluation of regional divisions in M-form hierarchies in application to the Soviet case; and, using the over-time variation in the organizational form of Soviet economy, we also demonstrate that the relative-performance evaluation was absent from the U-form Soviet hierarchy.

Sovietologists began studying the determinants of the career concerns of Soviet regional leaders in the 1960s and 1970s.² This early literature formulated two theories of career advancement: the “patron-client model,” in which personal connections to the central leadership determine bureaucrats’ vertical mobility, (Brzezinski and Huntington, 1964 and Armstrong, 1959) and the “rational-technical model,” in which the main reason for promotions was performance (Hough, 1969). We find empirical support for both theories as both the personal connections to the center and industrial performance, albeit only in the *Sovnarkhoz* reform period, were important determinants of regional party leaders’ career concerns in Soviet Russia.

Finally, our paper contributes to the empirical literature on the outcomes of regional decentralization (e.g., Fisman and Gatti, 2002; Jin et al., 2005; Enikolopov and Zhuravskaya, 2007; Fan et al., 2009, and Guriev et al., 2010). This literature largely focuses on the effect of fiscal federalism because of the difficulties with measurement of the non-fiscal elements of decentralization. The *Sovnarkhoz* reform presents a binary measure of regional non-fiscal decentralization.

The paper proceeds as follows. The next section provides stylized facts on the Soviet political hierarchy and a historical overview of the *Sovnarkhoz* reform. In Section 3, we formulate our hypotheses. Section 4 describes the data. In Section 5, we present our findings. Section 6 concludes.

2. Soviet hierarchy and the *Sovnarkhoz* reform: a historical background

The Soviet Union throughout its existence was a very centralized state with a strict top-down hierarchy of authority and a single center of decision-making, the Central Committee of the Communist Party. Under the *Nomenklatura* system, introduced in 1923, party and state officials at each level of the hierarchy were appointed by higher-level officials (Levin, 1997).

The territory of the Soviet Union consisted of fifteen republics divided into smaller territorial administrative units, known as “regions.” Russia was the largest republic in the Union; it consisted of about eighty regions. The top regional executive in each region was the regional party leader, called “the first party secretary.” Regional governors, who were the heads of regional government, were subordinated to the first party secretaries (just as in modern China). Soviet regional leaders were always responsible for the agriculture of the regions. In contrast, as we describe below, regional leaders were only put in charge of the regional industrial sector during Khrushchev’s *Sovnarkhoz* reform. Historical documents published in Denisov et al. (2004) and Khlevnuk et al. (2009) demonstrate that the center carefully monitored regional leaders throughout the history of the Soviet Union (details are provided in the Appendix B).

Since the beginning of five-year plans in 1928, Soviet industry was organized along production branch lines. Specialized ministries and departments managed all enterprises in its corresponding branch of industry across all regions; one ministry was responsible for one production branch. Thus, the organization of Soviet industry is a classic example of a U-form hierarchy.

2.1. The M-form episode: *Sovnarkhoz* reform

Stalin’s death in March 1953 triggered a power struggle for the leadership of the country, which eventually resulted in Nikita Khrushchev assuming full power in 1957–1958 and conducting a major organizational reform of the economic and political hierarchy, the so-called *Sovnarkhoz* reform (Ballis, 1961; Swearer, 1959). In the Appendix B we provide a detailed account of this power struggle around the reform.

² See, for instance, Armstrong (1959), Blackwell (1972), Blackwell and Hulbary (1973), Brzezinski and Huntington (1964), Frank (1971), Hodnett (1965), Hough (1969), Kaplan (1983), McAuley (1974), Oliver (1973), Stewart et al. (1972).

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