

# Chapter 2

## The Influence of Governmental Policies and Global Competition in the Diversification of Higher Education in Taiwan



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**Abstract** Diversity has been identified as one of the factors promoting the development of higher education system. The internal forces and external environments shape the horizontal and vertical diversity of the higher education system of each nation. The example of Taiwan is used to investigate the effects of government policies and global competition on diversity and diversification in the higher education system. In order to better understand the patterns of diversification of higher education in Taiwan, this chapter applies new institutional theory to form an analytical framework, considering institutions embedded in an open social environment, by which their structures and practices could be shaped and changed. In addition, two macro environmental perspectives were adopted to examine the changes involved in the diversification of higher education system, including governmental policies and global environment. A total of 164 higher educational institutes (HEIs) in Taiwan were investigated to determine the extent and dynamics of diversification of the higher education system. Results revealed that the local environmental factor of governmental policies changed the level of diversification, but the external pressure from global competition drove HEIs to pursue higher ranking and enhanced vertical stratification. During the diversification process, the Taiwanese government reduced control and empowered the HEIs to have more autonomy in administration and finance, and favored market-oriented changes. However, these changes were unable to lead to marketization. Challenges emerge in self-financing, market-led management, and reduction in state provision. Furthermore, the governance and diversification of higher education in Taiwan are unable to be fully explained by the triangle coordination of Clark (The higher education system. University of California Press, Los Angeles, CA, 1983). Public opinion as a fourth force is of increasing importance in the process.

**Keywords** Diversity and diversification · Higher education institutions · Global competition · Vertical and horizontal difference

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## 2.1 Introduction

Diversity of higher education systems has been identified as one of the factors promoting higher education development (Teichler, 2008). A considerable amount of higher education diversity is vital in increasing student choices and fostering the level of participation (Birnbaum, 1983; Huisman, Meek, & Wood, 2007; Van Vught, 2007). Increasing diversity has become an important policy issue in higher education (Zha, 2009). However, the extent and dynamics of diversity of higher education systems depend on many variables. Internal forces and external environments shape the diversity of the higher education systems of each nation. The internal forces come from an institutional level, and external environments include both national and global level (Marginson, 2016a; Teichler, 2017). The example of Taiwan is used to investigate the effects of government policies and global competitions on the diversity and diversification of in the higher education system.

Higher education in Taiwan has been recognized globally for its quantity and quality. It has expanded rapidly in the past decade—the gross tertiary enrollment rate was 50% in 1999, and reached 85.3% in 2007, which is higher than most Asian countries (Ministry of Education [MOE], 2019a). Regardless of rapid expansion, higher education in Taiwan remains of high quality. A total of eight universities in Taiwan were ranked among the top 400 worldwide, and 12 universities ranked in the top 100 in Asia, according to the QS World Universities Ranking 2020 (QS, 2020). Internal forces and external environments have competitively shaped the higher education system in Taiwan, which has grown from an elite to a universal system. As a diversified system is necessary to meet the needs of market and specification of social development (Marginson, 2017a; Trow, 1973), many changes in government administration and fiscal policies have been introduced to the higher education system in Taiwan. These national environment factors influence the diversification of higher education. In addition, as globalization is a trend in higher education, the external environment affects the diversity process, especially global competition.

This chapter uses higher education system in Taiwan for case study and focuses on investigating on the features characterizing the expansion and diversity of higher education system, as well as explore how the governmental policies and global competitions influenced the diversification of higher education system.

## 2.2 Diversity and Diversification of Higher Education Systems

The concepts of diversity, diversification, and differentiation have been discussed extensively in the higher education literature, while the definitions and approaches are slightly different in the various studies. The following paragraphs clarify the

conceptual definitions of these terms and review the different approaches to diversity of higher education in the literature.

### ***2.2.1 Concepts and Notions***

Diversity of higher education is a concept indicating the variety of higher education institutions (HEIs) within a higher education system (Teichler, 2015, 2017; van Vught, 2008). Furthermore, Teichler (1996) distinguishes between vertical and horizontal diversity of higher education systems. Horizontal diversity refers to the way HEIs are grouped according to their types, or functions. It may also relate to mission, governance, or internal organizational culture. Vertical differentiation refers to the number of levels in a system. HEIs are stratified according to their quality, reputation, or performance. Marginson (2017a) links diversity to horizontal variety in higher education, and stratification to vertical variety. In this chapter, we use the terms diversity and stratification.

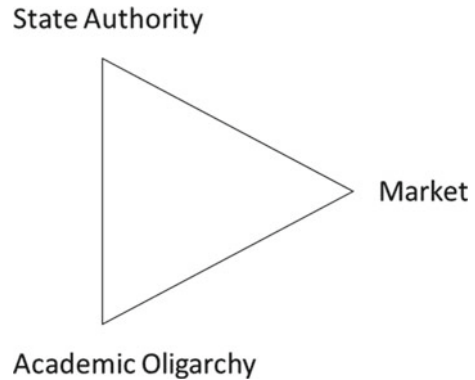
Diversification refers to a process by which new and different entities emerge. It increases the diversity within a system (Huisman, 1995; Vaira, 2009), and refers to a dynamic process, while diversity refers to a static status (van Vught, 2008). Conversely, differentiation refers to a process by which the entities of the system become more complex. It emphasizes the relationship between environment and the entities within it. Differentiation indicates an increase of structural and functional complexity of HEIs, rather than the emergence of new entities (Dakka, 2015; Vaira, 2009, p. 137).

### ***2.2.2 The Extent and Dynamics of Diversity***

Various approaches have been applied to discuss the extent and dynamics of diversity and diversification. These studies can be distinguished according to the question of whether the diversification process is driven by internal forces, external environments, or a combination of the two (van Vught, 2007). First, an institutional level perspective was proposed by Parson and Platt (1973). They suggested that there was an internal drive toward increasing the levels of diversity, and used the data of the USA's higher education system to support their arguments. As the massification of higher education takes place, new knowledge and new functions of higher education emerge. The HEIs become more diverse to fulfill social needs, which increases the differentiation and diversity of the higher education system.

National level perspective for analyzing diversity of higher education was proposed by Clark (1983). He presents a triangle of coordination model for the actual integrating mechanism of academic organization. The coordination is based on a mixture of state authority, academic oligarchy, and the market (Fig. 2.1). Based on the triangle model, the phenomena of differentiation and diversification of higher

**Fig. 2.1** The triangle of coordination (*Source* Clark, 1983, p. 143)



education can be interpreted. Clark points out that the complexity of higher education systems is the outcome of three forces: the variety of student population, the growth of the labor market, and the emergence of new disciplines (Clark, 1983, p. 215). As the knowledge becomes complicated, the fragmentation of academic institutions increases, and the differentiation and diversity of higher education system is enhanced.

Global perspective has been proposed for analysis under the trend of globalization of higher education (Marginson, 2006, 2016b; Mok, 2002). HEIs are facing national competition as well as global competition. Marginson (2006) points out that “higher education is a complex combination operating at the same time locally, nationally, and globally” (Marginson, 2006, p. 1). At national level, history, policy, and financial support shape the diversity of higher education system (Teichler, 2008). The HEIs are differentiated horizontally by institutional mission, and type. A national higher education system is more diverse if more institutional types are included, or if there is a greater difference in kind between institutional types (Wang & Zha, 2015). In addition, market competition tends to enhance diversity of higher education. As the growth of student participation increases, a wider range of choices of programs emerges to fulfill student needs. The diversity of HEIs increases in response to diverse student needs and labor markets. The government has to step back and allow the market to play a dominant role (Marginson, 2017b). At global level, HEIs have to face global market needs, global student flows, and global competition. Two factors—emergence of the worldwide market and the rapid development of cross-border education—have fostered HEIs to expand their systems to become more diverse. Global competition is enhanced by global ranking, which is closely related to research capacity and results in global stratification in higher education (Marginson, 2016b; Mok, 2002).

A different angle, ecology perspective, was proposed to understand the dynamics of whole organizations in the higher education systems (Dacin, Goodstein, & Scott, 2002; Oplatka & Hemsley-Brown, 2010; van Vught, 2007; Zha, 2009). This approach draws on new institutional theory (DiMaggio & Powell, 1983), which considers higher education systems as a network of individuals. In order to survive, HEIs

require sufficient resources from the environment. Environments consist of the social, political, and economic surroundings. HEIs also compete with each other to secure sufficient resources (van Vught, 2007). As the level of dependence increases, the balancing operations of HEIs can be observed when they response to environmental changes. Zha (2009) took Chinese universities as an example. The HEIs there added new programs in order to attract more students and acquire more financial support; however, when the funding was limited, the HEIs could only change the curriculum to attract students.

### 2.3 Analytical Framework

In order to better understand the patterns of diversification of higher education in Taiwan, this chapter applies new institutional theory to form an analytical framework, including three theoretical perspectives: the population ecology perspective, the resource dependency perspective, and the institutional isomorphism perspective. Unlike institutional theory, the new institutional theory considers that institutions are embedded in an open social environment, by which their structures and practices can be shaped and changed (Campbell, 2004; DiMaggio & Powell, 1983; Hannan & Freeman, 1989; Manning, 2017; Zha, 2009).

This framework considers HEIs as individual organizations that form a network by interaction with each other. The HEIs adopt their structures because of the environmental changes in order to have sufficient resources. Furthermore, the institutions mimic each other and therefore come to resemble each other. In this chapter, the expansion and related characteristics of higher education in Taiwan are described. Two macro environmental perspectives were adopted to examine the changes brought about by diversification of the higher education system, including governmental policies and global environment.

Furthermore, Clark's triangle of coordination is applied for analysis in this chapter. In this model, the coordination of academic organizations is based on a mixture of state authority, academic oligarchy, and the market (Clark, 1983, p. 143). However, the academic oligarchy has had a declining influence in the expansion process of higher education (Marginson & Considine, 2000; Zha, 2009). This chapter therefore focuses on the other two dimensions, government and market, and utilizes the new institutional theory to examine the influence of two factors from macro environment—government policies and global competition—on diversification of the higher education system, and then discusses the market-oriented changes.

This chapter used document and literature analysis to collect documents related to the research purposes and to identify themes for interpretation. According to Bowen, document analysis is “a systemic procedure of reviewing and evaluating documents” that allows for the data to be “examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge” (Bowen, 2009, p. 27). The major data

sources were investigated to collect data for analysis in this chapter, including historical documents of higher education development in Taiwan, governmental documents, higher education acts in Taiwan, government policy papers and scholarly publications, and the internet-based data of the MOE in Taiwan. From the documents and literature, the extent and dynamics of diversification of 164 universities and colleges in Taiwan were investigated.

## **2.4 Higher Education System in Taiwan**

### ***2.4.1 Fast Expansion from an Elite to a Universal System***

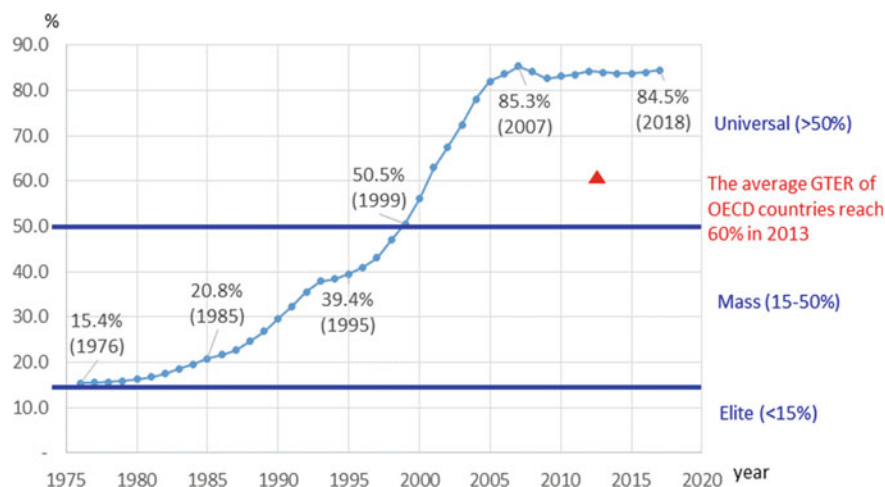
Trow (1973) identified a broad pattern of higher education development that applies to every advanced society. According to Trow's classification, a tertiary enrollment rate of less than 15% is an elite system; between 15 and 50% is a mass system; while greater than 50% is a universal system. In an elite system, only a small group of people can attend universities and colleges, while in a mass system, more people attend. If the enrollment rate exceeds 50% and reaches universal access level, different HEIs emerge to serve different student needs (Teichler, 2008; Trow, 2007).

The higher education system in Taiwan has expanded rapidly over the last three decades. The gross tertiary enrollment rate (GTER) was 15.4% in 1976 and reached 50.5% in 1999, changing from a mass to a universal system. Notably, the GTER reaches 85.3% in 2007, which is higher than the enrollment rates of most Asian countries (MOE, 2019a). Furthermore, the GTER of Taiwan is essentially higher than the average GTER of Organisation for Economic Co-operation and Development (OECD) countries. According to the OECD statistics (OECD, 2020), the average GTER of OECD countries reach 60% in 2013. Most countries have reached the stage of universal access. However, the GTER of Taiwan in 2013 reached 84%, which is much higher than the average GTER of OECD countries (Fig. 2.2).

This expansion influenced the diversity of higher education in Taiwan. The elite systems are highly homogeneous. As the enrollment rate exceeded 50% and reached universal access level, a trend toward differentiation emerged within the higher education system to serve different student needs.

### ***2.4.2 Binary System to Fulfill Student Needs***

The Taiwanese higher education system is a binary system, classified into academic universities and vocational colleges. The differentiation is based on research focus or training focus. The academic universities usually have a strong research focus, while the technological and vocational institutions aim to train students with specific skills. Two government offices are responsible for different-track of programs, including



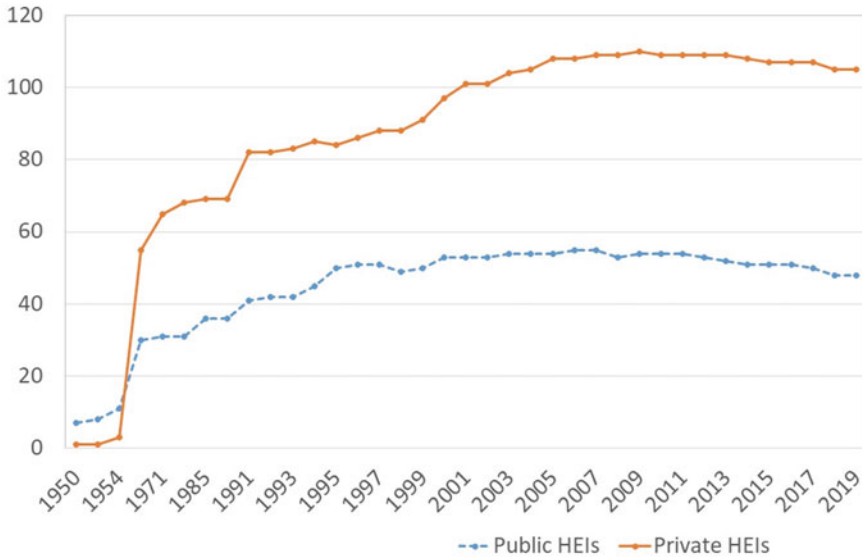
**Fig. 2.2** The gross tertiary enrollment ratio in Taiwan, 1976–2018 (Source Ministry of Education, 2019a; OECD, 2020)

the Department of Higher Education (MOE, 2019b, 2019c), and the Department of Technological and Vocational Education (MOE, 2019d). Adopting different regulations and guidelines, the government is able to assure the educational quality of each track and protect student rights.

To foster economic development and respond to the needs of the market, the Taiwanese government approved the establishment of more HEIs, especially private HEIs. In the 1950s, there were seven public HEIs and a single private one (MOE, 2019b). However, there were 153 HEIs in Taiwan as of 2019, compared to 105 in 1986 (Fig. 2.3). There were only three private HEIs in 1954 (21%), 55 in 1968 (65%), 110 in 2009 (67%), and 105 in 2019 (69%) (MOE, 2019e). Notably, the ratio of the number of public and private HEIs stayed at approximately 1:2 from 1971 to 2019, in spite of the number of private HEIs increasing dramatically during 1990–2010 (Fig. 2.3).

## 2.5 Macro Environmental Influence on Diversity

As an increasing concern about the impact of New Public Management reforms on public services, many changes of governmental management and financial governance have been introduced in the HEIs of Taiwan. These could be seen as local environment factors, influencing the diversification of higher education. Global competition is another environmental factor that might affect the diversity process.



**Fig. 2.3** The number of public and private HEIs, 1950–2019 (Source Ministry of Education, 2019e)

### 2.5.1 Changing Governmental Administration Policies

Governmental administration policies have changed over the decades. The MOE has supervised the operation of both public and private HEIs, ranging from student enrollment, faculty hiring, and curriculum arrangement, to fiscal decisions and administrative appointments since 1949. Under the impact of New Public Management, the government reformed the administration of higher education in 1987 (Gai, 2004). The HEIs were allowed to take decisions concerning finance and personnel, and university autonomy was also increased.

The expansion of higher education arises as a result of increased differentiation. The Taiwanese government has resolved to increase the diversity of the higher education system by implementing relevant policies and incentives since 1994. The MOE of Taiwan adopted deregulation and incentives to increase the diversification; however, sometimes their policies have inhibited diversification. The following examples demonstrate how the government adopted an incentive-led administration policy and a changing quality assurance, and demonstrate their influence on diversification of higher education in Taiwan.

**Adopting an Incentive-Led Administration Policy.** HEIs were encouraged by the MOE to identify and develop their characteristics under various incentive projects. In the 2000s, two major incentive projects were implemented to promote the diversification and stratification of the higher education system. The first major incentive project, the Aim for the Top University Project, was a policy introduced by the MOE and implemented from 2006 to 2015. The project aimed to enhance the



quality of research and to pursue top global universities. Its total budget was NT\$ 50 billion. Designated research-intensified universities and research centers received the funding in three stages. In the first stage, a total of 11 universities received funding in the period from 2006 to 2007. The second stage expanded funding to 15 universities, in the period from 2008 to 2010. In the third stage, 12 universities and 34 research centers received financial support, in the period from 2011 to 2015. The Aims for the Top University Project encouraged vertical stratification of universities.

The second major incentive project, the Higher Education Sprout Project, is scheduled to run from 2018 to 2023. Its total budget is up to US\$2.9 billion US dollars, and the aim is to encourage HEIs with different mission to pursue development. The MOE adopted a two-track approach, classifying HEIs in one of two categories. The first track aims to improve university quality comprehensively and promote the diversified development of higher education. The second track focuses on reinforcing the international competitiveness of Taiwanese universities in order for them to achieve world-class status. A total of 24 universities were sponsored for the second track development. As different goals were set for the different tracks, variation in the approach to diversification can be expected, including enhancement of horizontal diversification in the first track, and vertical stratification in the second track.

***Changing Quality Assurance Approaches.*** The expansion of higher education in Taiwan has increased the diversification of HEIs to fulfill the different student needs. In 1999, the enrollment rate of the Taiwanese higher education system reached 50.5%, and had thus become a mass system of higher education. The rapid growth of HEIs made the government face the challenge of higher education governance.

Before 2004, the Taiwanese higher education system was controlled by centralized government. In 2004, the University Act was revised, aiming at increasing social accountability and university autonomy. Based on the Act, the Regulations Governing the Evaluation of Universities was adopted in 2005, to make it a legal requirement for all HEIs to receive accreditation (Chin & Chen, 2012; Hou, Ince, Tsai, & Chiang, 2015; Mok & Chan, 2016). HEIs had to take responsibility for assuring their educational quality by identifying their mission and designing different programs and curriculums to fit their educational goals, and being evaluated for student learning outcomes by the accreditor, the Higher Education Evaluation and Accreditation Council of Taiwan (HEEACT). Through the accreditation process, the educational quality was assured.

Two cycles of institutional accreditation and program accreditation have been completed between 2006 to 2017. The HEIs required to aligned the educational goals with curriculum, instructions and learning outcomes to show the educational effectiveness for accreditation (HEEACT, 2019). Considering resources and structures, the HEIs developed various educational goals and functions to fulfill student needs. Therefore, the accreditation process has enhanced the horizontal diversification of the higher education system. In 2017, the MOE announced the suspension of program accreditation to response to the fast changing environments, and encouraged the HEIs to build up their internal QA systems to self-monitor the educational quality of provided programs. Higher education governance in Taiwan gradually

shifted from external quality control (by the government) to internal quality control (by the HEI itself) (Chen & Hou, 2016).

### ***2.5.2 Changing Governmental Funding Policies***

During the fast expansion of higher education in Taiwan, governmental funding per student was reduced. The government reformed its funding policies based on public management and transformed the financial structures of HEIs from highly to less state-dependent organizations (Broucker & De Wit, 2015; Brunsson & Sahlin-Andersson, 2000). Three aspects of government reforms on financial policies that influenced diversity were explored.

***Implementing University Funding Systems in Public HEIs.*** Public HEIs in Taiwan have changed their financing structure since 1996. Before that, they received most of their funding from the government and submitted the annual balance to the government. In 1996, the National University Endowment Fund Establishment Act was issued, and a reform of the university budget system was carried out. Each public HEI had to establish its university funding system and diversify its financial resources. Instead of relying on the government for financial support, HEIs had to seek other resources, such as tuition fees, donations, business cooperation, and miscellaneous fees.

Referring to the annual budgetary of public and private HEIs in Taiwan, it reveals that the financial resources structure of public HEIs changed after the 1996 funding regulations. In 1997, government subsidies reached 61%. In 2004, this had been reduced to 51.9%, while tuition fees shifted to 21.0%, and self-fundraising and miscellaneous incomes represented 27.1% of funding. In 2008, government subsidies had decreased to 47.1%, tuition fees were 21.6%, and self-fundraising and miscellaneous incomes had increased to 31.3% (MOE, 2019f).

With more autonomy to allocate their university budget, HEIs have more autonomy in managing their personnel, general governance, and academic affairs. Furthermore, in order to manage the multiple financial resources, HEIs have built internal control systems for finance and quality management. The government has changed its financial governance role in higher education from control to supervision. For example, the MOE visited 54 HEIs to evaluate their university funding systems in 2008, with the aim of reviewing as well as assisting with the operation of the university funding system. This represents a move from a highly centralized administration of finance toward government-regulated management. As the public HEIs applied various strategies of raising and spending their educational budgets, the diversification of HEIs was enhanced.

***Funding Policies of Private HEIs.*** It is not only public HEIs that receive government funding in Taiwan, but private ones too. The government's financial support (excluding special budget) to private HEIs shifted from 10.1% in 2004 to 11.9% in 2006. The major financial sources were tuition and fees, representing 59.4% in 2004 and 58.0% in 2006; while self-fundraising and miscellaneous incomes stood

**Table 2.1** Tuition and fees on tertiary education per student relative to per capita GDP in Taiwan (Unit: %)

Academic year	General HEIs		Technological and professional HEIs	
	Public	Private	Public	Private
2006	11.04	20.20	8.99	17.45
2007	10.51	19.26	8.37	17.21
2008	10.70	20.04	8.83	17.94
2009	10.86	20.33	8.96	18.20
2010	10.03	18.77	8.27	16.81
2011	9.93	18.60	8.20	16.65
2012	9.71	18.17	8.01	16.27
2013	9.41	17.62	7.77	15.78
2014	8.54	15.98	7.08	14.30
2015	8.22	15.39	6.87	13.84
2016	8.05	15.07	6.75	13.57
2017	7.93	14.85	6.64	13.36
2018	7.79	14.58	6.54	13.12

Source Ministry of Education (2019g)

at 30.5% in 2004 and 30.1% in 2006 (Chang, 2010). After the government reduced its funding for higher education, public and private HEIs alike have to seek multiple financial resources to maintain standards in teaching, research, and service. However, the tuition and fees remained the major financial sources.

**Tuition Fees Policy.** Table 2.1 shows that the average tuition and fees of tertiary education per student decreased in the academic years from 2006 to 2018 as a percentage of the gross domestic product per person. The percentages of public general universities decreased from 11.04% in 2006 to 7.79% in 2018, and these of private general universities declined from 20.20% in 2006 to 14.58% in 2018 (MOE, 2019g). A similar trend was revealed in the technological and professional universities/colleges. Before 1999, the tuition fees of public and private HEIs were decided by the government. In 1999, the Tuition and Miscellaneous Fees Flexible Plan was announced by the MOE, and HEIs were allowed to customize the items and amounts of tuition and miscellaneous. In 2008, the government issued the regulation Measures for Tuition and Miscellaneous Fees Collection for Colleges and Universities, which allowed HEIs to collect tuition and miscellaneous fees from students; but they need to obtain the MOE's approval before announcement.

Table 2.2 shows the number of HEIs approved by the MOE to adjust tuition and fees in the academic years 2001–2018 (MOE, 2019h). In 2001, 26 HEIs adjusted their tuition and fees in the range of 1.2–8%. After the announcement of new regulations in 2008, a small number of HEIs got approval from the MOE to adjust their tuition fees with the range under 2.5%, which is lower than that of 2001–2008. From 2009 to

**Table 2.2** Number of HEIs approved by the MOE to adjust tuition and fees

Academic year	Number of HEIs with approval	Adjustment range
2001	26	1.2– 8%
2002	32	2.4–10%
2003	27	1–8%
2004	53	2.4–5%
2005	10	3–5%
2006	7	2.3%
2007	8	3%
2008	8	11.43–1.92%
2009	None	None
2010	None	None
2011	None	None
2012	None	None
2013	None	None
2014	8 (16 applied)	1.37–2.06%
2015	9 (23 applied)	1.89–2.50%
2016	2 (14 applied)	2.5%
2017	None (2 applied)	None
2018	2 (16 applied)	2%
2019	None (2 applied)	None

Source Ministry of Education (2019h)

2013, the government blocked the increase of tuition and fees due to the international economic crisis. In 2014, a total of 16 HEIs applied for raising tuition and fees, while only eight of them got approval from the MOE, with an increasing range of 1.37–2.06%. In 2018, 16 HEIs applied, but only two were approved by the MOE.

Although universities were empowered to decide their own tuition fees, few HEIs were able to raise the tuition fees they proposed to the MOE, due to pressure from the Anti-High-Tuition Alliance since 2006. Organized by students from HEIs, the alliance against governmental policy of tuition fees and argue that the government should not increase students' financial burden (Wang & Loncar, 2010). The protest against high tuition fees is continuing, which has a great impact on university finance and development since then. As tuition fees were the major source of finance, HEIs were increasingly relying on them, and insufficient funding has therefore become a pressing issue, especially for private HEIs. With reduced financial resources, the development of both public and private HEIs is limited. Without sufficient funding, the top HEIs in Taiwan are unable to compete with top global universities. Furthermore, as the major financial resources coming from tuition fees, the developments of the private HEIs are hindered. The effect of insufficient funding on HEIs emerges.

Both vertical stratification and horizontal diversification of higher education are gradually dedifferentiated

### 2.5.3 Global Competition and Stratification

**Global Rankings.** Global rankings have a major influence on the higher education system and governmental policies (Marginson, 2016a). Most global rankings measure research performance. The Times Higher Education World University Ranking (THE) applies indicators of research, teaching, knowledge transfer, and internationalization to compare the performance of research-intensive universities (THE, 2019). The Academic Ranking of World Universities (ARWU) simply focuses on academic or research performance (ARWU, 2019). Research is a key measurement in reaching world-class universities. Promoting research performance is of increasing importance in the competition between HEIs and between nations (Chan, 2015; Chan & Chan, 2015; Chang, Nyeu, & Chang, 2015; Lo, 2009; Marginson, 2016b; Shin & Harman, 2009 Vaira, 2004).

In Taiwan, the National Taiwan University ranked 120 in THE listings in 2020, and was ranked 151 out of 200 in ARWU in 2019. The National Tsing Hua University ranked 351 out of 400 in THE, and 501 out of 600 in ARWU. Notably, the National Taiwan University of Science and Technology (NTUST), a vocational college, is listed for its reputation as a research-intensified university in both THE and ARWU ranks (Table 2.3).

Ranking-fostered competition enhances stratification. The world-class universities draw fiscal and personnel resources, as well as attracting prospective students. Research performance shapes the stratification and pulls the vertical differences between the top and bottom universities.

**Table 2.3** Ranks of HEIs in Taiwan in THE and ARWU listings

University	THE ranks in 2020	ARWU ranks in 2019
National Taiwan University	120	151–200
National Tsing Hua University	351–400	501–600
Taipei Medical University	351–400	701–800
China Medical University, Taiwan	501–600	301–400
National Chiao Tung University	501–600	501–600
National Taiwan University of Science and Technology	501–600	901–1000
National Yang-Ming University	501–600	501–600
National Cheng Kung University	601–800	301–400

Source THE (2019), ARWU (2019)

### 2.5.4 *Influence of Global Rankings and Diversification*

Rankings influence the higher education system at governmental institutional level and policy level.

***Institutional Level: Academic Drift.*** Rankings alter institutional developmental strategies. In order to be highly ranked and become world-class universities, HEIs tend to fulfill the requirements of the ranking systems but ignore their own histories, missions, and characteristics. There is a tendency toward the academic drift of vocational institutions and the vocational drift of universities (Tight, 2015). This blurs the boundaries between universities and vocational institutions (Gellert, 1993; Harwood, 2010; Vaira, 2009).

Vocational institutions tend to offer courses with more theoretical and academic content, and incline toward graduate degree programs, especially doctorate degrees. Not only do they provide essential education and training to meet labor market needs but they also open theoretical courses and focus on academic research. For example, NTUST (also known as Taiwan Tech), founded in 1974, was the first vocation institution of its kind in the technical and vocational system of Taiwan. It seeks to emulate the research paradigm of universities. It opened its first doctorate degree program in 1982 and it was upgraded from vocational college to vocational university in 1997. The graduate student enrollment rate increased rapidly. In 2020, a total of 5,605 undergraduates and 4,902 postgraduate students are enrolled. With excellent academic performance, NTUST ranked 257 in the QS rankings in 2019, and 61 in the Asian university rankings of THE in 2020 (NTUST, 2019; THE, 2020).

In order to compete for students and limited resources, the universities tend to provide more vocational and professionalizing courses to increase the employability of graduates. By focusing on employability, universities can attract high-quality students and maintain competitiveness in the market. For example, the National Taiwan University was ranked the highest in Taiwan in the 2018 Global University Employability Ranking, which was ranked according to the opinions of human resources executives in terms of students' preparation for the workplace (QS, 2019).

As the academic drift and vocational drift goes on, the boundary between universities and vocational institutions is vanishing. The two types of HEI have become similar to each other, and the dedifferentiation of horizontal diversification has emerged.

***Governmental Policy Level: Alliance and Mergers.*** Rankings influenced the forces of change governmental policies. With an expectation of rising in top university rankings, the MOE in Taiwan adopted two grand incentives for HEIs to pursue excellence (as mentioned in the previous sections). Furthermore, in order to efficiently use resources to compete with global higher education, the government in Taiwan encouraged university alliance and mergers.

Alliances in higher education seek to increase the scale and scope of institutions, with the expectation of economic benefit and competitiveness of economic benefit and competitiveness (Lo, 2014; Patterson, 2000). A university alliance, comprising

three or more HEIs, forms a governance structure, shares common goals, and implements specific constraints on members. By sharing resources and workforces through integration, the HEIs are able to use their facilities to full capacity and achieve joint objectives.

Facing international competition, the Taiwanese HEIs form university alliance networks to cooperate with each other. A total of 12 university alliances have been established in Taiwan since 2008 (Wiki, 2019). Some of the alliances pool resources such as libraries and teaching resources, while some jointly coordinate budgeting to support research teams across campuses. Some of them form a strategy alliance, such as jointly recruiting students from overseas.

The first alliance, the University System of Taiwan (UST), was established in 2008, consisting of four research-oriented universities, namely National Central University, National Chiao Tung University, National Tsing Hua University, and National Yang-Ming University. These four have good reputations on different academic fields, but none of them are comprehensive universities. Complementing each other in academic disciplines and research strengths, and with a regional proximity, they form a university alliance, sharing teaching and research resources with the aim of becoming an outstanding international university. The four HEIs invited the best teachers from across campuses to offer a core curriculum and reconstruct undergraduate curriculums, including general education and basic science courses. Facilitating integration of research resources, faculties from the four universities jointly participated in the pursuit of academic excellence, and the four HEIs organized several research centers including the Brain Research Center and Center for Nano Science and Technology (UST, 2019).

The alliances were formed with the expectation of increasing economic benefits and competitiveness; however, by sharing common goals and implementing specific constraints on members, the alliances inhibit the diversification of HEIs.

## 2.6 Emergence of a New Dimension

Combining the observations set out in the previous sections with Clark's triangle frames for analysis, reveals that changing governmental policies and global competition have led to decentralization and marketization. Notably, a fourth force, public opinion, came to the fore and participated in the coordination frame, influencing the diversity of higher education in Taiwan.

### **2.6.1 Relevance Between Decentralization and Stratification**

The governmental administration policies of higher education changed over the last decade. The management mode shifted from government control to school-based management. In the decentralization process, the autonomy of universities increased, and they were empowered to make decisions regarding their own academic, management, and financial affairs.

However, the increase in university autonomy does not necessarily enhance diversification, for the one-size-fits-all governmental policies can hinder diversification. During the decentralization process, the government provided incentives for universities to apply for more funding for the pursuit of top global universities or teaching excellence. With the former aim requiring ample funding in research, facilities, and personnel, the government can only support few universities, with a limited budget. However, under pressure from public opinion, the government decided to change the focus of the second major incentives, and dramatically increased the numbers of universities receiving incentives. With limited financial resources and under a low tuition fees policy, the research-intensified universities face the challenges of achieving world-class status. The one-size-fits-all governmental policies are decreasing the vertical stratification of higher education in Taiwan.

### **2.6.2 Market-Oriented Changes**

The governance of the higher education system in Taiwan has changed from centralized to decentralized control. As noted in the previous sections, the universities have to search for additional financial resources to governmental funding, adjust their programs and curriculum to appeal to market needs, cooperate with industry and business companies to raise funds, and rent out buildings or facilities to make profits. It seemed that market forces had started to shape the higher education system. However, could the drive for decentralization lead to the marketization of higher education in Taiwan? The followings use three characteristics highly relevant to the process of marketization to analyze the higher education system in Taiwan: the self-financing principle, reduction in state provision, and market-led management principles (Mok & Lo, 2001; Oplatka & Hemsley-Brown, 2010).

**Challenges of Self-Financing: Imbalance of Financial Structure.** Self-financing is a critical indicator of the financial autonomy and marketization of higher education. Reduction of governmental funding and an increase of self-fundraising is important (Clark, 1998; MOK, 2002; Teixeira & Dill, 2011). As set out in the previous sections, public HEIs rely and depend on governmental funding, and private HEIs depend on tuition fees. The self-fundraising proportion is still low for both public and private HEIs. The imbalance in financial structure might inhibit the marketization of higher education in Taiwan. In response to the decline in governmental financial support, the HEIs in Taiwan need to generate more income by themselves through



diversified fiscal sources, such as cooperation with manufacturing or business to reduce resource dependence.

**Challenges of Market-led Management: University Exit Mechanism.** There were several market-oriented changes in university governance in recent years, as mentioned in the previous sections. HEIs in Taiwan can adjust and offer market-oriented programs and courses by allocating more financial resources, while cutting down on less market-competitive programs to increase the enrollment rate. In addition, more and more institutions in Taiwan establish cross-department degree programs in response to the employment market demand. They integrate the resources from several related departments to create a comprehensive professional course module to enhance the competitiveness of their students before entering the job market. For example, the National Chengchi University (NCCU), a research-oriented university in Taiwan, provided 4 cross-department programs in 2005, but the total number of the programs dramatically increases to 21, including 4 bachelor-level, 12 master-level, and 4 doctor-level cross-department degree programs and 1 cross-college degree program in 2020 (NCCU, 2020). This trend reflects how HEIs are transforming their programs to fulfill the needs of market and emphasize upon employability.

Although HEIs in Taiwan are now empowered to adjust the programs they provide, they are now facing a market imbalance between supply and demand. The demand for higher education is decreasing for the low birthrate and low enrollment rate, while the supply is unchanged for the total number of HEIs remains the same. With limited funding and low tuition fees, some of the HEIs are facing financial crisis. From 2007 to 2019, the MOE approved the termination of seven HEIs and the transformation of two HEIs. The exit mechanism of HEIs was not fully decided by the providers (HEIs) and the market—government intervention played an important role instead. The market-led management principle was not appropriately satisfied.

**Challenges of Reduction in State Provision: Ceiling of Tuition Fees.** The governmental governance modes of higher education have changed significantly since 1987. The MOE supervises university operation, including student admission, faculty hiring, budget decisions, and administration appointments. In response to the New Public Management reform of public services, the government gradually empowered universities with more administrative and financial independence.

However, although the government issued regulations allowing flexibility in tuition fees, the standard for collecting tuition and fees is regulated by the government. With the intervention of the government, HEIs were unable to adjust the tuition fees according to their products and services in the higher education market. As lots of a university's budget comes from tuition and fees, differentiation of products and services between universities is gradually reduced, leading to weak competitiveness.

### 2.6.3 *Public Opinions as a New Dimension*

In Clark's triangle of coordination (Clark, 1983), the state, the market, and the academic oligarchy act as the primary forces dominating coordination of higher education systems. This dynamic model gives insight into how these forces interact and influence the actions of institutions and individuals.

Clark's triangle is a systematic tool for analysis and is considered one of the most influential models in higher education. However, 36 years after Clark proposed this model, we found that it is unable to track the movement of public opinion, which is of increasing importance in recent democratic society. As we observed in the previous sections, governmental tuition fee policies in Taiwan are changing under pressure from public opinion, and movements such as the Anti-High-Tuition Alliance. Sometimes the revised policies contradict previous ones. Public opinion has become more involved in university coordination through its influence on governmental policies. It represents the emergence of a fourth force in university coordination.

## 2.7 Discussion

The expansion of higher education does not necessarily lead to the increase of diversification of higher education. This chapter examines the argument by applying new institutional theory to form an analytical framework, considering institutions embedded in an open social environment, by which their structures and practices could be shaped and changed.

Two macro environmental factors influenced the diversification and stratification of higher education in Taiwan. The local environmental factor from governmental policies changed the level of diversification, but the external factor from global competition drove HEIs to pursue higher ranking and enhanced vertical stratification. During the diversification process, the Taiwanese government reduced its control and empowered HEIs to have more autonomy in administration and finance, and favored market-oriented changes. However, these changes were unable to lead to marketization. Applying the principles of marketization to analyze higher education in Taiwan reveals that challenges exist in self-financing, market-led management, and reduction in state provision. Furthermore, Clark's triangle coordination cannot fully explain the governance and diversification of higher education in Taiwan. Public opinion as a fourth force is increasing its importance in the process.

The increasing complexity and uncertainty influences the diversification of higher education systems. Long-term observation and in-depth analysis of the dynamics of higher education diversification process are necessary in the future. This will help to understand possible future development of higher education systems.

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