

GBT-INCLUSION CULTURE: IMPACT ON ECONOMIC GROWTH OF THE USA, CHINA AND POLAND

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Vinska O. Yo., Tokar V. V. LGBT-Inclusion Culture: Impact on Economic Growth of the USA, China and Poland

The article investigates the relationship of social values, especially tolerance, and economic progress on the basis of multidisciplinary approach. The authors propose a formula for calculating coefficient of the level of LGBT Inclusion and Diversity Culture Elasticity of GDP. The hypothesis about the impact of changes in national cultures in the direction of strengthening tolerance and inclusiveness on the volume of GDP at fixed prices is tested. The elasticity analysis is conducted for three countries, namely the United States, China and Poland, chosen in view of the availability of statistical data and the leading role of these countries at the global and regional levels in matters of socio-economic transformations affecting the formation of the institutional landscape and development models. The article evaluates the relative changes in the level of tolerance in the studied countries as a whole and in the context of socio-economic parameters, including age, type of employment, educational level and social status. As a result of the calculations there confirmed the positive LGBT Inclusion and Diversity Culture Elasticity of GDP that speaks in favor of stimulating tolerance in these countries to make effective use of human capital and accelerate economic growth.

Keywords: culture of tolerance, LGBT, economic development, human capital, inclusive economy, GDP elasticity.

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Вінська О. Й., Токар В. В. ЛГБТ-інклюзивна культура: вплив на економічне зростання в США, КНР та Польщі

У статті на основі мультидисциплінарного підходу досліджено взаємозв'язок соціальних цінностей, перш за все толерантності, та економічного прогресу. Авторами запропоновано формулу для розрахунку коефіцієнта еластичності ВВП за рівнем ЛГБТ-інклюзивності культури. Протестовано гіпотезу щодо впливу змін у національних культурах у напрямку посилення толерантності та інклюзивності на обсяг ВВП у фіксованих цінах. Аналіз еластичності здійснено для трьох країн, а саме: США, КНР та Польщі, які було обрано з урахуванням доступності статистичних даних та лідерської ролі цих держав на глобальному й регіональних рівнях у соціально-економічних трансформаціях, що впливають на формування інституційних ландшафтів і моделей розвитку. У статті оцінено відносні зміни в рівні толерантності в досліджуваних країнах у цілому та в розрізі соціально-економічних параметрів, зокрема віку, виду зайнятості, освітнього рівня та соціального статусу. У результаті проведених розрахунків підтверджено позитивну еластичність ВВП Польщі та КНР за рівнем ЛГБТ-інклюзивності культури, що свідчить на користь стимулювання толерантності в цих країнах для ефективного використання людського капіталу та пришвидшення економічного зростання.

Ключові слова: толерантна культура, ЛГБТ, економічний розвиток, людський капітал, інклюзивна економіка, еластичність ВВП.

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Винская О. И., Токар В. В. ЛГБТ-инклюзивная культура: влияние на экономический рост в США, КНР и Польша

В статье на основании мультидисциплинарного подхода исследована взаимосвязь социальных ценностей, прежде всего толерантности, и экономического прогресса. Авторами предложена формула для расчёта коэффициента эластичности ВВП по уровню ЛГБТ-инклюзивности культуры. Протестирована гипотеза о влиянии изменений в национальных культурах в направлении усиления толерантности и инклюзивности на объём ВВП в фиксированных ценах. Анализ эластичности проведён для трёх стран, а именно: США, КНР и Польши, выбранных с учётом доступности статистических данных и лидирующей роли этих государств на глобальном и региональных уровнях в вопросах социально-экономических трансформаций, влияющих на формирование институциональных ландшафтов и моделей развития. В статье оценены относительные изменения в уровне толерантности в исследуемых странах в целом и в разрезе социально-экономических параметров, в том числе возраста, вида занятости, образовательного уровня и социального статуса. В результате проведённых расчётов подтверждена позитивная эластичность ВВП Польши и КНР по уровню ЛГБТ-инклюзивности культуры, что свидетельствует в пользу стимулирования толерантности в этих странах с целью эффективного использования человеческого капитала и ускорения экономического роста.

Ключевые слова: толерантная культура, ЛГБТ, экономическое развитие, человеческий капитал, инклюзивная экономика, эластичность ВВП.

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The modern post-industrial era of economic development is characterized by the phenomenon when natural resources lose their primary importance in the wealth of nations and labor force becomes a major driver of

economic growth. Thus, for countries to be competitive and successful their governments should aim at unlocking the full intellectual and creative potential of available labor as well as attract the best minds from all over the world.

The rapid growth in robotics and automation forces out unqualified labor force and brings in the demand for intellectual and innovative employees. Thus, the majority of new job places will be emerging in the creative industries that demand self-expression, broad-mind attitude, new ideas and various freedoms, including personal freedoms, e.g. the ability to choose a partner without experiencing pressure, condemnation, intimidation or exclusion.

Therefore, building an inclusive society, which accepts and tolerates minorities, e. g. LGBT (lesbian, gay, bisexuals and transgender people), could make a country more attractive for living and working, and guarantee that labor allocation within its border is efficient – nobody is rejected to work in certain sectors of economy on the basis of race, religion, gender, age or sexual preferences.

The globalization age and structural shift to post-industrial development of states bring a discussion on the main drivers of economic growth. Years of soaring prices for natural resources, especially energy, made many countries rich but the current downward trend is making them face a severe truth that growth based on minerals is not sustainable. We consider human capital to be the only factor of economic prosperity, which never dwindles. It is important to notice that the United Nations organization [12] suggests that human creativity and innovation have become the genuine wealth of nations in the 21st century, as it generates growth and employment.

Human creativity and innovation are interlinked, but it is necessary to highlight prerequisites and consequences. We agree with J. Howkins, who insists that innovation does not cause creativity. He defines creativity as prerequisite to innovation: “creativity can move to innovation; creativity can power innovation; creativity can result in innovation”. Creativity relies on the capability to challenge and disagree [11]. So, human creativity can be released only in a free society, while it remains restrained in totalitarian and intolerant countries. We would like to add that cultural values, being based on the religious tradition and often supported by the authorities, obstruct creativity of certain groups in the society, e.g. women and LGBT minorities.

In our previous articles [13–15] we examined the economic effect of female empowerment in the European Union. Our hypothesis was that gender-based cultural bias and entrenched stereotypes restraining access of women to education, healthcare, labor market and politics degrade their ambitions and retard economic development. The results of calculations have proved that the correlation between gender equality in the EU member-states and their economic growth for the last decade is essential and noticeable with Spearman's rank correlation coefficient reaching 0.599, determination coefficient equaling 0.358, and t-Student test showing that actual t-value exceeds the critical one. Integrating the same statistical methods we analyzed the links between gender equality and innovative competitiveness of the EU countries for the last decade and the correlation was essential and strong: Spearman's rank correlation coefficient reached 0.713, determination coefficient equaled 0.508, and t-Student test showed that the actual t-value exceeded the critical one. The abovementioned results provide hard evi-

dence that the tolerant and inclusive society, which guarantees and advocates female rights, contributes greatly to the creative atmosphere boosting innovations and facilitating economic growth.

The LGBT minorities are discriminated in both developed and emerging markets, they are not able to unlock their potential and use full creativity for spurring innovation and growth. It is worth mentioning that LGBT minorities face severe discrimination since their schooling time [8]. The research shows that school community fails to deliver full inclusion of LGBT students, which leads to disrespect, unequal opportunity and even threatens safety of those who openly expose their sexual identity. This hostile environment undermines the studying success of sexual minorities and prevents them from receiving an equal amount of knowledge and skills.

The study on the emerging economies and LGBT rights protection [1] proves that the latter is connected to the economic development because the inclusive approach guarantees that human capital is not wasted. It proves that LGBT discrimination culture and legislature affect the economy by lost labor time and productivity, underinvestment in human capital and its ineffective allocation. More inclusive societies in emerging economies demonstrate higher levels of GDP per capita and HDI.

The analysis of statistics on the territorial dispersion of gays in the USA [7] shows that their concentration is the highest in the most prosperous areas such as South West and Northern East, in states like California, Rhode Island, Massachusetts, New Hampshire, Vermont, Maine, which proves that it's not only favorable warm climate that attracts them, but also the wide-spread tolerance culture, which creates a more inclusive environment for them.

In spite of some cases of discrimination of LGBT at working places, high schools and universities, the above-mentioned group tends to have high levels of education and income. However, unfavorable environment may influence LGBT professional decisions and lead to inefficient allocation of labor force in the economy. Gays tend to be engaged in jobs where social perceptiveness and task independence is required, e.g. professions in psychology, teaching, human resources, and social service management [10]. That's why the TOP-15 occupations preferred by them are the following: psychologists; training and development specialists and managers; social and community service managers; technical writers; occupational therapists; massage therapists; urban and regional planners; producers and directors; postsecondary teachers; probation officers and correctional treatment specialists; morticians, undertakers, and funeral directors; physical therapists and exercise physiologists; computer and information systems managers; lawyers, judges, magistrates, and other judicial workers as well as web developers.

R. Florida's research [4] shows that diversity stimulates economic growth, as he sees three core factors that spur the economic development and make the certain US regions competitive and prosperous, namely 3Ts – technology, talent, tolerance. While IT sphere is seen as an inclusive sector of economy for the LGBT in the USA, American pub-

lic sector is seen as a discriminative one [3]. Considering that it is a wide sector for employment, it undermines the financial base of LGBT severely and makes them vulnerable economically, as well as adds to the inefficient use of taxpayer money. It also brings higher recruitment costs for the government of the US as potential employees are estimated in the spheres not relevant to the job. Emotional damage for LGBT is very deep too, because it denies the core American public sector value of fairness.

LGBT inclusive treatment can lead to certain changes in their economic decisions. At the moment homosexual couples tend to save more, which is explained by their precautionary motives [9]. Low fertility rates affect their consumption patterns, housing and job preference and the amount of working hours [2]. In a more LGBT-friendly societies and tolerance culture their economic decisions could follow a traditional path, which could help to minimize economic inefficiencies.

The *aim* of the article is to determine the interplay between the social values and economic growth by developing LGBT Inclusion and Diversity Culture Elasticity of GDP (LGBTIDCEoGDP) formula.

The interplay between LGBT Inclusion and Diversity Culture and national economic development is analyzed on the basis of the results of World Value Survey (WVS) performed in 2005–2009 and 2010–2014 and official statistics of GDP according to the World Bank. The actual question wording of WVS was as follows: “On this list are various groups of people. Could you please mention any that you would not like to have as neighbors?: Homosexuals”. The percentage of “not mentioned” were taken into account for the further research. The features of the dataset make it especially suitable for the elasticity analysis.

The LGBT Inclusion and Diversity Culture Elasticity of GDP measures the rate of response of a national GDP due to a “not mentioned” (LGBT Inclusion and Diversity) answer change. The formula for the LGBT Inclusion and Diversity Culture (IDC) Elasticity of GDP (LGBTIDCEoGDP) is:

$$LGBTCEoGDP = \frac{\% \text{ Change in GDP}}{\% \text{ Change in LGBTIDC}} \quad (1)$$

The formula used to calculate the percentage change in GDP is:

$$\% \text{ Change in GDP} = \frac{(GDP_{new} - GDP_{old}) \cdot 100}{GDP_{old}} \quad (2)$$

The formula used to calculate the percentage change in LGBT Inclusion and Diversity Culture (IDC) is:

$$\% \text{ Change in LGBTIDC} = \frac{(LGBTIDC_{new} - LGBTIDC_{old}) \cdot 100}{LGBTIDC_{old}} \quad (3)$$

We assume that:

If $LGBTIDCEoGDP = \infty$, then GDP is LGBT Inclusion and Diversity Culture Absolutely Elastic (small changes in LGBT Inclusion and Diversity Culture increases (or decreases) GDP by unlimited quantity).

If $|LGBTIDCEoGDP| > 1$, then GDP is LGBT Inclusion and Diversity Culture Elastic (GDP changes faster than LGBT Inclusion and Diversity Culture does).

If $|LGBTIDCEoGDP| = 1$, then GDP is LGBT Inclusion and Diversity Culture Unit Elastic (GDP changes at the same rate as LGBT Inclusion and Diversity Culture does).

If $0 < |LGBTIDCEoGDP| < 1$, then GDP is LGBT Inclusion and Diversity Culture Unit Inelastic (GDP changes at the smaller rate as LGBT Inclusion and Diversity Culture does).

If $LGBTIDCEoGDP = 0$, then GDP is LGBT Inclusion and Diversity Culture Absolutely Inelastic (changes in LGBT Inclusion and Diversity Culture does not influence on GDP).

We refer to people, who have nothing against having homosexuals as their potential neighbors, as supporters for LGBT Inclusion and Diversity Culture. Their socio-economic characteristics and shifts related to different dimensions are of special interest for researchers and governmental officers. The formula used to calculate the percentage change in percentage of supporters for LGBT Inclusion and Diversity Culture is:

$$\% \text{ Change in \% of Supporters for LGBTIDC} = \frac{(F_{new} - F_{old}) \cdot 100}{F_{old}} \quad (4)$$

where F stands for percentage of supporters for LGBTIDC classified by different socio-economic characteristics, such as: age, employment status, educational level attained and social class (subjective).

We analyzed three countries, namely the USA, Poland and China. The USA is a leading country in the world, with immense economic power of the 1/5 of the global GDP. The USA can disseminate tolerance via the process of American cultural expansion. We consider Poland to be a regional leader of Eastern Europe. Poland also serves as a steamer of liberal transition reforms and successful example of the European integration strategy. China is the fastest developing country of the latest decades, dynamically increasing the living standards of its citizens. Facing the severe ecological problems because of rapid industrialization, it searches the way to maintain sustainable development.

The results of calculations shown in *Table 1 – Table 4* are based on Formula (4). Table 1 presents data relating to the changes in percentage of supporters for LGBT Inclusion and Diversity Culture (further referred to as supporters) by three age groups – up to 29 years, from 30 to 49 as well as 50 year plus group.

Chinese statistics refutes completely the traditional notion that older people tend to be more conservative than younger ones. Even though the percentage of supporters in the youngest age group more than doubled in China in 2007–2012, the oldest age group with the moderate increase of 17.2 per cent still prevailed. Table 1 shows that LGBT Inclusion and Diversity Culture in China improved by 55.59 per cent during 2007–2012. It also indicates the enhancement of LGBTIDC of 24.02 per cent in Poland during 2005–2012 and 6.85 per cent change in the USA in 2006–2011.

Table 2 demonstrates that the Chinese students and self-employed were the most intolerant strata of society in 2007 with only 24.0 and 22.0 per cent of support for LGBT Diversity and Inclusion Culture respectively. The situation

Table 1

Supporters for LGBT Inclusion and Diversity Culture in China, Poland and the USA by Age in 2005–2012, %

Age	China			Poland			USA		
	2007	2012	Relative change, %	2005	2012	Relative change, %	2006	2011	Relative change, %
Up to 29	21.7	44.5	105.1	57.1	60.9	6.7	77.7	83.6	7.6
30-49	28.8	47.0	63.2	49.8	69.0	38.6	77.7	80.3	3.3
50 and up	42.4	49.7	17.2	42.4	54.5	28.5	69.9	77.1	10.3

Source: own calculations based on [16].

Table 2

Supporters for LGBT Inclusion and Diversity Culture in China, Poland and the USA by Employment Status in 2005–2012, %

Employment Status	China			Poland			USA		
	2007	2012	Relative change, %	2005	2012	Relative change, %	2006	2011	Relative change, %
Full Time Employee	30.6	46.9	53.3	53.1	64.2	20.9	77.8	81.8	5.1
Part Time Employee	30.9	49.8	61.2	50.9	65.5	28.7	x	80.3	x
Self-Employed	22.2	37.0	66.7	41.3	63.3	53.3	89.3	77.8	-12.9
Retired	38.0	49.1	29.2	39.2	53.9	37.5	63,6	74.0	16.4
Housewives	37.2	47.5	27.7	50.2	59.2	17.9	63,1	80.7	27.9
Student	24.0	54.5	127.1	61.1	55.7	-8.8	x	84.9	x
Unemployed	27.0	35.3	30.7	51.0	65.8	29.0	73.5	75.8	3.1

Source: own calculations based on [16].

Table 3

Supporters for LGBT Inclusion and Diversity Culture in China, Poland and the USA by Highest Educational Level Attained in 2005–2012, %

Educational Level	China			Poland			USA		
	2007	2012	Relative change, %	2005	2012	Relative change, %	2006	2011	Relative change, %
No Formal Education	42.3	60.0	41.8	41.2	x	x	x	35.6	x
Completed Primary School	35.0	52.0	48.6	41.1	44.5	8.3	40.2	61.4	52.7
Completed Secondary School: Technical / Vocational Type	22.2	43.7	96.8	58.1	62.4	7.4	72.1	x	x
Completed Secondary School: University Preparatory Type	25.4	43.6	71.7	64.6	73.9	14.4	80.8	74.8	-7.4
University Level Education	35.0	52.8	50.9	70.0	75.0	7.1	84.6	84.7	0.1

Source: own calculations based on [16].

improved dramatically in 2012. The percentage of support among the Chinese students attained astonishing 127.1 per cent of relative increase, enabling them to take the highest rank (over 50 per cent of support) in China.

The lowest levels of tolerance occurred among the Chinese self-employed and unemployed in 2012. It is hard to account for the fact that the share of supporters among students in Poland dropped by 8.8 per cent in 2005–2012. Full-time and part-time employees, self-employed and the unemployed demonstrated almost equal levels of progressiveness (around 63–65 per cent) in Poland in 2012. American full-

time employees, the retired, the unemployed and homemakers showed slight or moderate increase in the percentage of support (3.1–27.9 per cent) for LGBT Inclusion and Diversity Culture in 2006–2011, while the self-employed demonstrated the cutback of 12.9 per cent during the same period.

The results shown in Table 3 highlight a staggering trend of continuous prevalence of respondents who had no formal education as the most tolerant layer of society in China in 2007 and 2012. The statistical facts bear out the widespread belief that university level education fosters LGBT Inclusion and Diversity Culture support. The university

Table 4

Supporters for LGBT Inclusion and Diversity Culture in China, Poland and the USA by Social Class (Subjective) in 2005–2012, %

Social Class (Subjective)	China			Poland			USA		
	2007	2012	Relative change, %	2005	2012	Relative change, %	2006	2011	Relative change, %
Upper Class	28.9	58.1	101.0	71.5	60.3	-15.7	63.6	85.3	34.1
Upper Middle Class	23.8	54.7	129.8	56.1	64.8	15.5	78.2	81.7	4.5
Lower Middle Class	26.5	45.3	70.9	51.1	61.7	20.7	79.1	79.2	0.1
Working Class	28.2	46.1	63.5	43.2	57.6	33.3	71.0	78.1	10.0
Lower Class	38.3	50.7	32.4	44.3	51.2	15.6	69.7	74.5	6.9

Source: own calculations based on [16].

graduates hold the highest rank among LGBT supporters in Poland (70.0 per cent in 2005 and 75 per cent in 2012) and the USA (84.6 per cent in 2006 and 84.7 per cent in 2007).

From Table 4 we can see that LGBT tolerance correlates with hierarchy of social classes (subjective) in the USA in 2011: the level of support increases with appreciation of class – from 74.5 per cent for lower class, up to 85.3 for upper class. The upper class also demonstrated the highest improvement of LGBT Inclusion and Diversity Culture, namely, 34.1 per cent increment in 2006-2011. During the period from 2007 to 2012 the percentage of upper class and upper middle class supporters in China high rocketed from 28.9 to 58.1 per cent and from only 23.8 to as much as 54.7 per cent respectively. The conclusion that LGBT Inclusion and Diversity Culture in China gained sufficient support stems

from the fact that the growth of support of representatives of other classes accounted for 32.4–70.9 per cent (depending on a particular class). Nevertheless, upper class showed 15.7 per cent decline of support in Poland in 2005–2012, while other classes faced moderate increase of 15.5–33.3 per cent.

Table 5 presents data relating to changes in LGBT Inclusion and Diversity Culture. Calculations were conducted using Formula (3). The table shows that LGBT Inclusion and Diversity Culture in China has improved by 55.59 per cent during 2007–2012. It also indicates the enhancement of LGBTIDC of 24.02 per cent in Poland during 2005–2012 and 6.85 per cent change in the USA in 2006–2011.

From Table 6 we can see that the GDP (in current US dollars) of all the analyzed countries grew during 2005–2012.

Table 5

LGBT Inclusion and Diversity Culture in China, Poland and the USA in 2005–2012, %

Country	2005	2006	2007	2011	2012	Relative Change, %
China	x	x	30.4	x	47.3	55.59
Poland	48.7	x	x	x	60.4	24.02
USA	x	74.5	x	79.6	x	6.85

Source: own calculations based on [16].

Table 6

GDP of China, Poland and the USA in 2005–2012, billion current US dollars

Country	2005	2006	2007	2011	2012
China	x	x	3,523.1	x	5,059.4
Poland	304.4	x	x	x	436.5
USA	x	13,855.9	x	14,718.6	x

Source: numbers are rounded up on the basis of [5].

Table 7 presents the USA GDP deflator that helps to eliminate the influence of inflation.

Table 7

US GDP Deflator in 2005–2014

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
GDP deflator (annual)	0.032	0.031	0.027	0.020	0.008	0.012	0.021	0.018	0.015	0.015
GDP multiplier*	1.180	1.144	1.114	1.092	1.084	1.071	1.049	1.030	1.015	1.000

Notes: * – GDP multiplier allows the transformation of current US dollars into 2014 US dollars.

Source: own calculations based on [6].

Using multipliers from Table 7 and Formula (2), we are able to measure changes in GDP of the analyzed countries in 2014 US dollars. Table 8 indicates a rise of 122.08 per cent in GDP of China (in 2014 US dollars). The GDP of Poland and the USA in 2014 US dollars grew by 43.5 and 2.65 per cent respectively.

in percentage of respondents not mentioning homosexual neighbors to be any problem.

The analysis suggests that there is some positive interplay between LGBT Inclusion and Diversity Culture shifts and national economic development. We can conclude that the tolerance facilitates cooperation and economic prosper-

Table 8

GDP in China, Poland and the USA in 2005–2012 (in billions 2014 US dollars)

Country	2005	2006	2007	2011	2012	Relative Change, %
China	x	x	3,925.3	x	8,717.4	122.08
Poland	359.1	x	x	x	515.3	43.50
USA	x	15,854.5	x	16,274.7	x	2.65

Source: own calculations based on [5, 6].

Finally, Table 9 shows the results of calculations of LGBT Inclusion and Diversity Culture Elasticity of GDP for China, Poland and the USA, based on Formula 3 and data from Tables 5 & Table 8.

Table 9

LGBT Inclusion and Diversity Culture Elasticity of GDP for China, Poland and the USA

Country	LGBTIDCEoGDP
China	2.20
Poland	1.81
USA	0.39

Source: own calculations.

The analysis suggests that LGBTIDCEoGDP for China amounts to 2.20. Thus we can conclude that GDP of China is LGBT Inclusion and Diversity Culture Elastic. It means that the change of 1 per cent in LGBT Inclusion and Diversity Culture causes the change of 2.20 per cent in GDP of China (in the same direction). GDP of Poland is also LGBT Inclusion and Diversity Culture Elastic. It means that the change of 1 per cent in LGBT Inclusion and Diversity Culture results in the change of 1.81 per cent in GDP of Poland (in the same direction).

The situation with the USA is somewhat different. LGBTIDCEoGDP for the USA, reaching 0.39, means that GDP of the USA is LGBT Inclusion and Diversity Culture Inelastic. So, the change of 1 per cent in LGBT Inclusion and Diversity Culture increases (decreases) the USA GDP by 0.39.

CONCLUSIONS

The prime motivation of this paper was to examine linkages between LGBT Inclusion and Diversity Culture and national economic development. We tested a hypothesis whether shifts in Inclusion and Diversity Culture influence GDP expressed in fixed prices. The USA, China and Poland were selected for the analysis owing to the data availability and their role in the world socioeconomic transformation. Due to the nature of the dataset the analysis was carried out by means of the elasticity approach. LGBT Inclusion and Diversity Culture shifts were measured as the relative change

ity. We have found evidence of the fact that less developed countries have more elastic response of economic indicators to institutional measure aimed at fostering the culture of diversity and inclusion. ■

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