INTRODUCTION

Georgia began its transition period with low levels of income, slender fiscal resources, and weak institutional and administrative capacities, all of which were legacies of the communist period. In the 1990s internal wars and ethnic conflicts deepened economic problems. The wars in 1991–92 in South Ossetia and Abkhazia were followed by migration and a disruption and decline of the economy. As a result, the budget deficit increased, social and economic reforms were delayed, living standards declined, and hunger and poverty increased. In the mid-1990s internally displaced people made up 10% of the population of Georgia. Two-thirds of the population lived below the poverty line.

The situation was aggravated by institutional and political instability, ruined industries, lack of markets, and intermittent transport and communications. Georgia experienced the greatest economic decline among all the post-communist countries.

Between 1994 and 1998 the Government introduced a series of reforms to stabilize and liberalize the economy. The transition reforms entailed tremendous changes in fiscal and monetary policy, widespread privatization, price and trade liberalization, and removal of regulatory restrictions. With these reforms implemented, Georgia’s gross domestic product (GDP) grew rapidly, with the rate of growth reaching 11% in 1997.

Unfortunately, the period of economic revival was very short, and both state and market institutions remained underdeveloped. Before 2004 the economy grew at a very slow rate, and by 2008, the Georgian economy was only 73% its size in 1990.

During 1995–2003 period wages and pensions stagnated, with widespread poverty, and only a small elite segment of society benefiting from economic growth. Even worse, wages were decreasing in real terms. The official unemployment rate reached as high as 14%, and annual GDP growth was 3.0%–3.5%. Georgia’s low activity and economic stagnation persisted for nearly seven years. Among the challenges experienced by the Government were an energy crisis, a budgetary crisis (related to the accumulation of substantial arrears of pensions and wages payments that resulted from the inability or unwillingness to collect taxes), and high rates of unemployment and poverty.

Economic stagnation was one of the reasons for the ‘rose revolution’ that removed the administration of Eduard Shevardnadze from office in November 2003. Mikhail Saakashvili’s new Government, established following his election as President in January 2004, implemented radical social, political, and institutional changes. Since 2005 the main goals of the administration have been to establish fiscal discipline, restore the legal basis of the economy, reduce the scale of the shadow economy, and simplify regulations through the introduction of new laws on business. Corresponding changes then followed in the country’s economic and social life. As such, Georgia has effectively embarked on building a new state since 2005, while assistance from the IMF was renewed in mid-2004 with the establishment of a new programme under the Fund’s Poverty Reduction and Growth Facility.

MACROECONOMIC AND INSTITUTIONAL REFORMS

Most of Georgia’s economic and social problems at the time of the rose revolution resulted from a combination of slender fiscal resources and the weak institutional and administrative capacity. Subsequently, the key challenges of the new post-revolutionary Government were to combat corruption and carry out institutional reforms.

The first step undertaken was civil service reform, focused on eliminating redundant agencies and a significant reallocation of personnel. The Government launched a radical reorganization, reducing bureaucracy and increasing both the responsi-

bility of government officials and their wages. At the same time, the number of institutions regulating, controlling and inspecting the private sector was reduced. Amendments to the Constitution have strengthened presidential powers. All this enabled the Government to start an effective fight against corruption, exemplified by the abolition of the traffic police and the expedited creation of a Western-style patrol police. As a consequence, the practice of bribery across the country’s roads and highways was eliminated.

The combat of corruption and the implementation of institutional reforms helped to establish financial order in the country, yielding some significant increases in tax revenues and, as a consequence, the overcoming of the budgetary crisis. Some budgetary growth was achieved as a result of anti-corruption measures such as the arrest of former government officials and their relatives and their release upon payment of a ‘price of liberty’. Officially, this was presented as constituting a repayment of stolen money and properties to the state. As a result, the post-revolutionary Government succeeded in paying off all accumulated debt to pensioners and public sector employees. The extrabudgetary accounts, which accumulated income from the state paid by the accused, ensured that there was no transparency in spending; in early 2006, under pressure from the IMF, these accounts were abolished.

Perhaps the most successful policy reform has been that of economic liberalization. A new tax code has considerably simplified taxes. Before 2005 several types of income taxes had existed: a social tax (27%), medical insurance (3%), and employment tax (1%)—a total of 31% covered by employers in all. With effect from that year all these taxes were merged into one social payment of 20%, alongside a flat income tax (paid by employees) of 12%. As a result, the fiscal burden on entrepreneurs was reduced. At the same time, the administration of tax collection became more severe. These changes enabled the Government to increase the state budget several-fold; the tax-to-GDP ratio grew from 14.7% in 2000 to 25.8% in 2007. In 2007 the 20% social tax payable by employers was abolished while income tax was increased from 12% to 25%.

In mid-2008 a package of bills amending the Tax Code, under which the gradual reduction of some tax rates was envisaged, was submitted to Parliament. Over a five-year period starting from 2008, income tax would be reduced from 32% to 17%. The sequence of the tax rate reductions would be as follows: by one percentage point in 2009; by two percentage points each of the next three years; and by three percentage points in the fifth year. The dividend tax would be gradually reduced during the same period, to zero from the current 10%. This reduction of tax rates would promote both business development and economic growth, while, in support of viticulture and winemaking, the excise on local wines would be abolished.

The customs reforms introduced in Georgia, which simplified procedures for importers and trade partners, have proved successful. The new customs code, introduced in 2007, replaced the previous 16 different types of duties with only three. The new duties are set at rates of zero, 5% and 12%, whereas those they replaced ranged from 1% to 25%. Reducing the import-tax base for agricultural goods and construction materials, as well as nullifying import taxes for other goods, has made Georgia much more competitive.

The amnesty and legalization of non-declared tax liabilities and property was enacted in mid-2005, as part of the anti-corruption policy. This was a time-limited amnesty from January–September 2005, aimed at the legalization of hidden incomes.

Other reforms have reduced the quantity of official licenses and permits required for various business activities, which had previously effectively created barriers to market entry. In 2005 a new law on licensing was adopted, following which, of the previous total of 950 licences and permits, only 150 remain. Licensing procedures were rationalized and the time taken to issue licences reduced. Additionally, the legal grounds for governmental intervention in businesses have been restricted.
A new, revolutionary, Labour Code has limited the rights of employees, and concomitantly substantially broadened those of employers. Although this may encourage businesses to develop, it also leaves employees unprotected.

Reform implemented in 2000–06 made considerable strides in reversing policies that had previously stifled private initiative. Georgia’s strategy was to establish a minimal state, and was oriented around a policy of terminating any state regulatory activity that enabled corruption and increased bureaucracy. This partly explains the dramatic abolition of procedures required for business registration, with an emphasis on reducing the costs of excessive economic and administrative regulations. In the ‘Doing Business 2007’ report, published by the World Bank, Georgia’s rank on the ‘ease of doing business’ indicator jumped from 100th place (of 155 economies surveyed) in 2006 to 37th (of 175), surpassing some EU countries, improving its ranking further in 2008 to 18th (of 178). As such, Georgia became one of the most rapidly reforming economies in the world.

Despite this progressive movement toward economic liberalization, institutional changes yielded some negative effects. First, liberalization was accompanied by the hasty decision to abolish the anti-monopoly service in late 2004. As a result, new monopolistic practices emerged. In late 2004, the Interior (which combines the police and domestic intelligence forces) was empowered to deal with the anti-monopoly regulations over domestic markets. Second, the State Department of Statistics, which before the rose revolution had been an independent institution accountable to Parliament, was incorporated into the Ministry of Economic Development, presenting perhaps the most palpable example of a conflict of interests. Consequently, official statistics presently play a political function to proclaim the annual improvement of the economy, particularly the official rate of unemployment, which is persistently low. Third, after the reorganization of some ministries and departments, most experienced employees were dismissed and replaced by younger officials with some international training. As a consequence, government ministries and departments have lost institutional memory.

No less important than institutional reforms, the large-scale privatization programme should be regarded as one of the key accomplishments of the post-revolutionary Governments. The completion of privatization and the minimum involvement of the state in economic matters are among the main priorities of Georgia’s economic development. The Georgian Government fully supported the entry of foreign capital into the economy during the wide-ranging privatizations of state-owned enterprises that took place after the rose revolution. Among the largest investors are Russia, Kazakhstan, and the United Arab Emirates (UAE). Russian capital was invested in the Georgian banking system, electricity, and gold- and copper-mining and processing companies, with Kazakhstan involvement in the gas-distribution and oil-sector businesses being substantial.

In 2006 the Government announced the establishment of a free economic zone (FEZ) around the port city of Poti, signing an agreement with the UAE-based Ras al Khaimah (RAK) Investment Authority, which also purchased 51% of the shares of the port at Poti, as the development company. It was anticipated that the opening of a FEZ would attract foreign investment. However, opponents of the scheme have argued that envisaging that Georgia had embarked on liberalizing foreign trade more than ten years earlier, and that after the rose revolution business registration procedures had also been liberalized, the economic viability of setting up the FEZ would be uncertain.

In 2008 a so-called ‘revolutionary’ economic package of laws was developed with the main goal of turning Georgia into a global financial centre by offering tax exemptions to large international financial companies whose activity in Georgia does not exceed 10% of their financial turnover. This package also provided for a significant reorganization of the National Bank of Georgia (NBG), the central bank, by imposing a targeted inflation policy, in line with the authorities’ commitment to keeping inflation to less than 10%.

Other projects stimulating economic development include the issuance of so-called ‘cheap credit’ for the development of small businesses, and of Eurobonds of US $500m. with a maturity period of five years in order to implement new power projects.

In parallel with liberalization and privatization, the question of property rights has become an area of contention for the post-revolutionary Government. The confiscations and temporary renationalization of property and assets initiated in late 2005–07, affected not only corrupt former officials, but also small and medium-sized businesses. This process meant that certain companies that had been privatized before the rose revolution were forcibly taken back by the Government, which then offered them for reprivatization. Moreover, extrajudicial decisions authorized the demolition of privately owned houses built before the rose revolution, the owners of which possessed all the requisite documents certifying both their ownership and legitimacy of construction. The only argument presented by the Government to support these actions was a desire to improve the image of the capital city, Tbilisi.

Law enforcement agencies, including the Office of the Prosecutor-General and the Ministry of Internal Affairs, became involved in the process, reportedly pressuring the property owners to voluntarily give up their property for the Government’s benefit. Without formally pressing charges for possible infractions, the owners were reminded that they had not registered their houses or permissions for business through corrupt deals agreed with Shevardnadze-era officials. As way of recompense for these past errors, the owners then handed over their property to the state. These transfers were officially registered as gifts to the state, rather than being confiscated or expropriated properties. Business owners who thereby transferred their ownership properties were not reimbursed.

These and other policies contributed to the unrest that began in November 2007, culminating in demonstrations that were violently suppressed by the Government. To quell the ensuing turmoil, President Saakashvili resigned and new presidential elections were called for January 2008, at which Saakashvili was re-elected.

**ECONOMIC POLICY**

In parallel with macroeconomic and institutional reforms, corruption and state involvement in the economy were reduced drastically, the investment climate improved, and the average annual rate of GDP growth reached 9.3% in 2004–07. By 2008 the Georgian economy should be assessed as undergoing rapid development with moderately high inflation, the growth of foreign investment, and a low level of exports.

Privatization has attracted large-scale investments to the country. In 2002 foreign direct investment (FDI) was equivalent to less than US $837 per head; in 2004 they amounted to $104, and by 2006 had further increased to $240. In addition, illicit gains made prior to the rose revolution were made legal. Much of this money has been invested in construction, financial services, and telecommunications, which in turn has made a positive impact on GDP growth.

Inflation began to increase in 2004, while the economic environment became more active and dynamic. In 2000–03 the annual rate of GDP growth averaged 4%, and the average annual rate of inflation was only 3.5%. These levels were a clear indicator of stagnation, and public expenditures also remained low.

In 2004–07 average annual GDP growth amounted to 8.3%, more than two times the level recorded in 2000–03, and the average annual rate of inflation increased to 11.1%, in 2004–07, more than three times the level recorded in 2000–03.

Several factors have been instrumental in precipitating this growth of inflation. First, the investment environment improved and transfers from emigrants increased. A large-scale privatization programme and remittances received from abroad considerably exceeded (by up to 25%) the pace of GDP growth in 2004–07. Consequently, demand for the national currency kept growing, and its delivery to the foreign markets brought about an increase in the money supply, which in turn created conditions for inflation. The stability of the national currency also became a cause for concern. The central bank, in implementing monetary policy, was forced to choose between either seeking to maintain inflation at the desired level or to ensure
the stability of the exchange rate of the national currency. Second, budgetary revenues increased six-fold in 2004-07 (compared with 2000-03), although this also enabled the country to cover the previously accumulated domestic debts and all of the payroll salaries and pensions. Third, public-sector salaries increased by 67% during 2004-06, while those in the private sector increased by an average of some 208%. Thus, conditions for inflation were created, further strained by international factors, such as an increase in the cost of energy resources, the declining value of the US dollar, and an increase of inflation in Georgia's principal trade partners; in Azerbaijan, Russia, Turkey and Ukraine inflation averaged around 10%. The upturn of inflation in Georgia was not, however, largely caused by internal monetary pressures, but was principally attributable to external pressures, including the Russian embargo introduced against Georgia (see History) in late 2005 and increases in prices of energy imported from Russia.

High inflation has also resulted in an increase in tax revenues, even though the value of these additional revenues is lower, in real terms. The Government has two sources of increased tax revenues: economic growth and high inflation. The NBC has issued certificates of deposit in order to reduce the money supply, and has intervened in the currency exchange market to contain inflation. In order to regulate inflation fully if we take into account the rapid growth not only of budgetary revenues, but also of the budget deficit, which amounted to 5% of GDP in 2007.

Another serious challenge that has arisen since the imposition of the Russian economic embargo has concerned the current account deficit. Both exports and imports increased during 2002-07. Although the rate of growth of imports has been more rapid, the export-to-import cover ratio reduced gradually, and in 2007 reached 27%, compared with 46.8% in 2002. Consequently, while the trade deficit grew six-fold during 2002-07, the current account deficit grew by more than two-fold, reaching 19.0% of GDP.

FDI and transfers from abroad are the main sources of income to cover the deficit. During 2002-07 FDI increased by 2.2 times and transfers from abroad by 6.5 times, thus reducing energy prices and the increase of FDI are the main reasons for the growth in imports and the downturn in export potential.

THE ECONOMIC IMPACT OF THE RUSSIAN EMBARGO

Until 2004 Russia was Georgia's largest trade partner. After relations between the two countries deteriorated in the mid-2000s, Russia declined to third place, behind Turkey and Azerbaijan. The closure of the Russian market presented a great challenge to Georgia's economy, and resulted in substantial changes to its foreign-trade structure.

As the embargo restrictions imports of Georgian fruits and vegetables, ostensibly due to sanitary regulations and the necessity of defending Russian consumers from counterfeit goods. (Politically, this move has been explained by a desire by Russia to restore its influence in Georgia and to impede the country's movement toward the North Atlantic Treaty Organization.) Relations with Russia were aggravated after the arrest of Russian officers on charges of espionage by Georgian authorities in 2006. In retaliation, Russia recall its ambassador and began a partial evacuation of Russian diplomatic staff. Without giving any notice, Russia closed the only official border checkpoint between the two countries, at Verkhny Lars. Ethnic Georgians were expelled from Russia, transport and communications links between Russia and Georgia were closed (except for roads linking Russia with the separatist territories of Abkhazia and South Ossetia), and Russia stopped issuing visas to Georgian citizens. In October 2006, in response to these sanctions, Georgia threatened to block Russia's bid to join the World Trade Organization. In addition, in January 2007 Russian exports more sharply increased the price of gas exports to Georgia.

The Russian embargo and transportation blockade have substantially reduced Georgian trade, thereby reducing the national income. According to various estimations the Russia embargo could reduce GDP growth of Georgia by between 0.5% and 2.8% every year, before new markets (particularly for Georgian food and beverage products) are found.

The Russian-Georgian war of August 2008 represented another potentially severe setback to the Georgian economy. During the increased of Russian air and land forces, civilian populations and infrastructure were bombed, with enduring consequences. However, the banking system, energy supply, and various private entities all successfully coped with the war shock, and the food market functioned without serious problems.

SECTORS OF THE ECONOMY

Agriculture

Agriculture has always been one of the key sectors of the Georgian economy. Since 1996 the share of agriculture in GDP has declined every year, reaching 12% in 2007, compared with 32% in 1996. In 1990-2007 total agricultural output, which principally comprises wheat, tobacco, vegetables, fruits, grapes and tea, decreased substantially.

The main reason for this decline was the division of agricultural land into small plots after privatization, lack of funding, limited information about markets and new technologies, amortization of agricultural techniques and machinery, and the high prices and low quality of pesticides and mineral fertilizers. Small farms produce more than four-fifths of total agricultural output; only 8%-10% of these products are for market. These farms operate mainly on a subsistence basis, and cannot create the conditions for economic growth. Moreover, only 19% of farms have privately owned machinery, and only 26% have mechanized production. Large farms produce only 10% of the total agricultural output, almost all of which is marketed.

Another problem is rural finance. The financial system focuses on short-term trade financing and does not serve the development of the agricultural sector. The primary agriculture and agro-processing sectors suffer from a limited supply of medium-term credit. Moreover, in eastern Georgia, obsolete irrigation systems and poor technical conditions reduce the efficiency of the sector.

Industry

Industry has grown substantially since the mid-2000s, with growth peaking, in real terms, at 14%, in 2007, since when growth has slowed.

Mining, chemicals, and food-processing are the main industrial sectors. The coal industry is well established. Manganese and non-metallic minerals, mineral fertilizers, synthetic materials and fibres, and pharmaceutical products are the main exports. The share of GDP attributed to the sector decreased from 11% in 1996 to 5% in 2003, due to energy shortages and lack of investment, but after privatization in 2004-07 it share reached 12.9%.

Food products include tea, wine, and brandy. Prior to the Russian embargo, wine was the largest export among agro-industrial products, accounting for 25% of the total, and the third largest export product overall, with 78% of the wine exported to Russia and 12% to Ukraine. Other important agricultural export goods are shelled hazelnuts (21%), mineral water (10%), refined sugar (9%), distilled alcoholic beverages (9%), non-alcoholic beverages (6%), and citrus fruits (5%).

Georgia has significant export potential for fruit and fruit concentrates. The climate is well suited to tobacco production, but Georgia lacks the skills and technologies for manufacturing, packing, and sorting for export. This is also true of wheat production.

In 2007 imported food products accounted for more than one-half of consumption. Such a strong dependence on imports is paradoxical for a country with such substantial resources for food production.

Energy

Despite the strategic importance of the energy sector, its share in industry has decreased, due to the rapid growth of other sectors. The sector suffers as a result of the poor conditions of power stations and the corrosion of gas distribution networks, with associated losses, and the prevalence of corruption.
The sector experienced considerable progress during 2004–05. The electric-power engineering sector was reorganized and the collection of payments improved, thereby stabilizing the energy sector. The rehabilitation of hydro-electric generation was relatively rapid and facilitated an increase in generation and supply. The local production of energy resources has increased, as has consumption.

Moreover, the combat of corruption in the energy sector resulted in the overcoming of the energy crisis: since the winter of 2007–08, the whole of Georgia has enjoyed a constant supply of electricity.

As the supply of energy has improved, the share of local resources in consumption has decreased. Privatization of the energy sector continues apace.

About 20 hydropower plants (HPPs) are privately owned, accounting for about one-third of installed capacity. The one-fifth share of the distribution companies owned by the state has been placed on the list of organizations to be privatized, excepting the Enguri HPP, one of the largest, which is located in the separatist territory of Abkhazia. Most of the gas-distribution companies are in poor financial condition, and not attractive for privatization.

Hydropower is the only potential export produced by the energy sector of Georgia. Natural gas is mainly supplied by Azerbaijan and Russia, and oil by Azerbaijan and Kazakhstan.

The current energy policy of Georgia, due to its tense relations with Russia, aims at providing energy stability through the use of alternative suppliers. In early 2007 the country began to receive gas from the Shah Deniz (Sah Deniz) field, the largest in Azerbaijani territory, in hopes of becoming independent of the politically unstable flows supplied by the Russian state-controlled company Gazprom.

Banking

In the 1990s, after the collapse of the USSR and Georgian independence, the development of the banking sector went through a troublesome period, being subject to the reform of the former Soviet system, recession, and concentration. Privatization began in 1994, when state-owned banks were transformed into joint stock companies. The first commercial banks were created from state banks. In 1986 a two-tier banking system was introduced, with international practices adapted to Georgian conditions. Stricter reserves requirements imposed by the national bank; assets, liabilities and risk management; and cases of licences being revoked, banks forced to close or being placed into liquidation all served as encouragement for banks to change their behaviour.

Despite the fact that Georgia's economy was closely associated and linked with that of Russia, the major Russian banking crisis of 1998 in Russia did not provoke the banking crisis that ensued in Georgia.

None the less, during 1998–99 the global economic crisis had a very significant effect on Georgia. Among the crises concerning banking, debt and exchange rates, only the latter developed rapidly, while hyperinflation and the lari was permanently and sharply devaluated. Small banks experienced difficulties, after the deterioration in the exchange rate and the loss of value of the national currency encouraged consumers to withdraw deposits from the banks. To decrease broad money, the national bank increased the norm of reserve requirements for commercial banks from 12% to 16%. In consequence, the value of credits and rates of interest increased.

Although some commercial banks failed in this very difficult financial situation, a general banking crisis did not ensue, as 82% of deposits were invested in US dollars. Therefore, the withdrawal of consumer deposits affected only those in the national currency. The speculative rush to exchange national currency for foreign currency accelerated, and, as exchange rates declined swiftly, a currency crisis developed. Thus, while the assets of commercial banks in national currency reduced, the large proportion of deposits held in foreign currency was preserved.

Moreover, the central bank offered short-term loans to commercial banks in order to support them through the difficulties, although it lacked the resources to assist all of the commercial banks that were in need of assistance. Some 13 banks were chosen to be issued credits so as to avoid bankruptcy. Until this time, the financial market had comprised a large number of small banks that were generally characterized by poor management, and, in many cases, held significant overdue debts. None the less, as many such banks went bankrupt, the whole banking sector was not affected. Thus, while in 1998 more than 150 banks were deprived of their operating licence, more than 80% of clients' deposits were secure, and the crisis of the banking system within Georgia had been contained.

Until 2004 the banking sector developed slowly, with rapid development after the rose revolution, due to economic liberalization and an increase in FDI. Commercial bank assets, deposits, and loans all grew significantly. During 2004–06 bank assets tripled, as had been the case in 1997–2003. Commercial bank assets in 2009 were forecast at 60% of GDP. As around one-half of liquid assets are denominated in foreign currencies, the exchange rate is a significant factor in guaranteeing financial stability. Similarly, exchange rate fluctuation could increase credit risk. Along with attempts to restrict exchange rate spreads, the better management of expenditure will become a priority. Bank market concentration has increased, especially on the deposit market, which has always been more concentrated than the loan market, reflecting varying confidence in different banks. In early 2008 the six largest banks accounted for more than 80% of the bank market. In 2007 some 15 commercial banks were in operation, 13 of which were partially or fully foreign-owned, continuing to attract foreign capital investment. In total, 58% of the total capital assets of banks were held by foreign interests.

Other Sectors

In 2003–07 positive growth rates were recorded in every sector of the economy. The share of services (especially financial) in GDP increased rapidly, representing almost one-half of total GDP growth. Trade is still the largest sector, although the construction sector (of which pipeline construction only constitutes a small part) has been growing rapidly.

CONCLUSION AND PROSPECTS

In pursuit of economic transformation, the post-rise revolution Government initially demonstrated the political will to establish financial order and eradicate bribery and corruption, which allowed the country to overcome its budgetary and economic weaknesses and to advance GDP growth. Despite the external shock from the Russian economic embargo, subsequent economic growth has been strong, driven mainly by private capital inflows, which include a large element of FDI. While these inflows are welcome, and signal private sector confidence in the Georgian economy, they also give rise to macroeconomic imbalances. Georgia's current account deficit has increased substantially and was projected to increase further.

Large capital inflows also pose challenges for macroeconomic stabilization, with rapid budgetary growth creating inflationary pressures alongside a tight fiscal policy and the stated objective of ensuring that inflation remains under 10%. The pace of privatization and growth in investment experienced in the years that followed the post-rise revolution is unsustainable. By 2008 privatization was entering its final stages, meaning that FDI will decrease, thereby reducing the risk factors for high inflation. As local production will not be able to grow significantly and export opportunities are extremely limited, it will prove difficult to reduce the trade deficit. During the military conflict with Russia in August 2008, Georgia's economy proved resilient; if economic assistance is timely, Georgia will be able to overcome economic problems. In brief, Georgia has escaped a period of stagnation, and now faces the challenges of stabilization and the maintenance of moderately high economic growth.