

FINANCIAL REGULATION OF ECONOMY THROUGH CHANNELS OF BUDGET DEFICIT AND PUBLIC DEBT

Abstract. This article examines the possible financial impact of a government on the economy through the budget deficit channel of and the public debt channel. The author analyzes the existing theoretical approaches that explain the role of channels of the budget deficit and public debt in the financial transmission mechanism of government regulation. Given the diversity of contemporary approaches he examines the relationship between these channels and the potential impact of their use in order to ensure equilibrium dynamics of economic development in the short and long term. The author compares results, which are consistent with the Keynesian vision of fiscal stimulus, and the results obtained in the framework of “non-Keynesian” approach.

Keywords: fiscal stimulus, financial and monetary transmission, budget deficit channel, public debt channel, “non-Keynesian” effect.

Аннотация. В статье исследуется возможность финансового влияния государства на экономику с помощью канала бюджетного дефицита и канала государственного долга. Рассмотрены существующие теоретические подходы, которые объясняют роль каналов бюджетного дефицита и государственного долга в составе финансового трансмиссионного механизма государственного регулирования. С учетом многообразия современных подходов изучается взаимосвязь этих каналов и потенциальные результаты их использования в целях обеспечения равновесной динамики экономического развития в краткосрочной и долгосрочной перспективе. Анализируются результаты, которые согласуются с кейнсианским видением финансового стимулирования экономики, и результаты, полученные в рамках «не-кейнсианского» подхода.

Ключевые слова: фискальное стимулирование, финансово-монетарная трансмиссия, канал бюджетного дефицита, канал государственного долга, «не-кейнсианский» эффект.

Statement of the problem

The debt channel of financial transmission is associated with the debt policy of a government. Changes

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in governing public debt should be considered separately, because the structure and dynamics of public debt has its own distinct impact on macroeconomic equilibrium. At the same time, the debt channel is closely related to other channels of financial and monetary transmission: tax channel, budget channel, budget deficit channel and monetary channels.

Review of recent researches and publications

Debt and deficit channels of financial and monetary impact on the economy are an important part of the transmission mechanism that provides transfer of financial monetary shocks to the real sector. Transmission mechanism of these channels is studied by famous scientists – R. Barro [2], G. Mankiw [7], H. Minsky [8]. A. Mnykh [9], I. Radionova [11] explore specificity of application of these channels in the economy of Ukraine.

Unsolved aspects of the problem

Despite numerous researches of the potential of financial and monetary regulation of the economy, the interaction between budget deficit channel and public debt channel in emerging economies has to be studied separately. In particular, the mechanism of debt strategy of financing the budget deficit is an independent channel of government regulation of the economy but nevertheless it is not sufficiently developed.

Research purposes of the paper

The purpose of this study is to extend the theoretical concepts of internal links within the financial and

monetary transmission mechanism. This should provide additional benefits in fiscal stimulus of an economy, particularly in post-crisis environment.

The main findings if the research

Transmission of financial shocks to the real sector is provided through two main financial transmission channels – the tax channel and the budget channel - and “derived” channels - the debt channel, the budget deficit channel. Together, these channels form the basis of financial transmission as a mechanism of indirect impact of financial shocks on real variables and, therefore, on the macroeconomic equilibrium.

Budget deficit channel reveals itself due to the mismatch between government revenues and expenditures. This means that the government becomes a borrower of funds from households, banks and firms or from other country, the international financial institutions.

Issue and placement of government bonds, different loans etc. can be forms of borrowing funds to finance budget expenditures. Professionals in financial policies tend to believe that the deficit per se is not dangerous for an economy, but sources and nature of funding deficits matter because they have different effects on macroeconomic proportions, both through financial channels of transmission, and through monetary channels.

The theory of intertemporal budget constraints implies that the present value of government debt to cover the budget deficit and the interest thereon shall not exceed the present value of future budget surplus of budget profit in a phase of economic recovery. Excessive government borrowing increases the risk that the government will not fulfill its debt obligations, so interest rates will increase to cover the extra risk. The growth of interest rates on government loans has two important implications.

The first effect is related to the fact that an excessive budget deficit creates not expected but actual threat of inability of the government to pay for debts. The famous Russian scientist K. Styurin thinks that when the economy has fundamental problems, the public finances are vulnerable, and investors are concerned, so in these conditions so-called self-fulfilling can take place. If investors rethink the probability of default, for examples, in government bonds, in the direction of increasing, than the market yield to maturity on them increases, as investors demand higher compensation for risk. Increasing returns lead to increased interest payments on the public debt. At some point it may be found out that the cost of debt servicing is prohibitively high. The possible default, as a result, can cause a chain reaction

in the economy.

The second consequence of excessive budget deficits is associated with more expensive credit resources not only for the government. The growth of interest rates on government loans increases interest rates on capital for the private sector, which, in turn, reduces investment, aggregate demand and income. Conversely, reducing the budget deficit may increase private investment, thus boosting economic growth. This is usually by reducing current expenditures, rather than by increasing tax revenues or cuts in public investment.

Another effect in investments resulted from lack of confidence to government due to a significant increase in the budget deficit is a growing trend to cut down private sector investments in the country and to transfer capital abroad. In addition to the direct loss of investments as a component of aggregate demand and output, this trend puts pressure on the exchange rate. Additional supply of the domestic currency by private sector without a corresponding expansion of foreign currency creates the danger of domestic currency depreciation or devaluation. Moreover, depending on the causes of imbalances in the foreign exchange market a positive effect of stimulating exports by devaluation may be insignificant compared to the restrictions in investments and economic activity due to instability of the foreign exchange market. Conversely, reducing the budget deficit could increase domestic investment due to the stabilization of the exchange rate, that restores investors' confidence and stops or even reduces the outflow of capital [6].

Impact of budget deficits on macroeconomic equilibrium also occurs due to changes in income and consumption. In the case of excessive budget deficit the increase of government loans related to the need to finance the deficit and, therefore, going beyond the intertemporal budget constraint, economic agents foresee future increase in taxes and reduce of disposable income. The result is a reduction in current consumption, based on the willingness to hold a fixed (permanent) income and consumption.

Impact of budget deficits on macroeconomic equilibrium also occurs through price effects in case of active use of emission sources of reducing deficit. Acceleration of printing money causes both stimulatory and constraint effect on the economy. The stimulating effect is associated with stimulation of exports due to the depreciation of the domestic currency. Constraint effect is associated with inflationary factors of emission financing. Growing inflation increases the price level in the economy, acts as a common destabilizing factor and destroys economic relations. On the contrary, the trend of deficit reduction indicates an increase in the economic

stability of the state, stimulates consumption and private investment [5].

Among financial transmission channels budget the deficit channel and the debt channel derive from the channel of budget revenues and expenditures, as initiation of derived channels occurs as a result of certain changes and the formation of certain relationships in major financial transmission channels. However, the derived transmission channels are connected by themselves (Fig. 1), since there is a relationship between budget deficit and public debt.

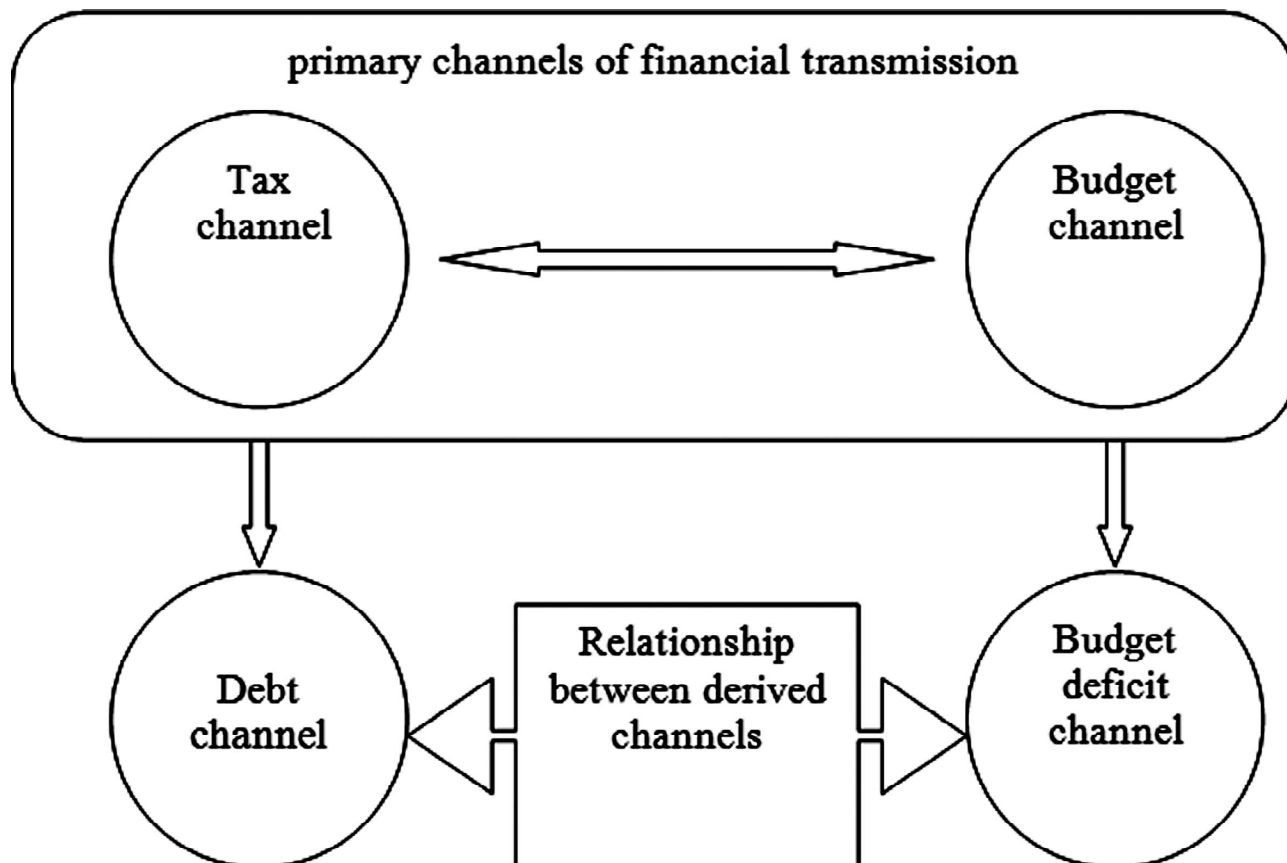


Figure 1.
RELATIONSHIPS BETWEEN FINANCIAL TRANSMISSION CHANNELS

Measures of financial regulation within the relationship of deficits and debt are usually associated with fiscal consolidation¹ trend. Typically, fiscal consolidation is related to unpopular activities - budget cuts and increased taxes. Since these measures are not only “unpopular” but objectively dangerous for the economy, especially in the case of large budget deficits, the fiscal consolidation involves partial reduction of the budget deficit by increasing government debt or transferring deficit into debt.

Different theories and theoretical approaches differently represents opportunities to influence the macroeconomic equilibrium through the channel of debt management.

Proponents of different theories of macroeconomic regulation agree that a single comprehensive theory of public debt management does not exist [10]. However, economic theory offers several separate theories that collectively provide a theoretical basis for the study of debt channel of financial and monetary transmission.

The traditional explanation of the effects of public debt shows that the creation of debt has a negative impact on capital investments and creates debt burden for future generations through future tax increases (to pay principal and interest on debt). However, the use of debt channel may be effective if debt borrowings are used for investment purposes, which, ultimately, lead to increased production and income.

Crowding-out theory argues that the use of debt channel of financial monetary transmission constrains economic development because the government, covering the budget deficit by borrowing, crowds out private borrowers from

¹ Under the budget (fiscal) consolidation we mean measures aimed at balancing between budget revenues and expenditures.

the credit market and thereby restrains private investments.

According to the theory of tax equalization debt financing of the budget deficit has to eliminate disadvantages of tax funding, as it enables to change tax rates over time less. Under this approach, the debt burden on the economy is distributed over time and, therefore, less noticeable than a sharp increase in taxes [2; 4].

The theory of Ricardian equivalence says that the economy reacts “equally” on the government approaches to cover their expenses – by taxes or borrowing, as consumption and investment do not change under the proposed alternatives.

The theory of “fiscal inflation” explains that the use of debt channel causes inflation, if along with the use of debt financing channel for government spending the central bank expands the money issue to reduce the cost of borrowing. Theory of financial instability (H. Minsky) has similar conclusions to the theory of “fiscal inflation”. According to Minski, in case of the use of debt channel in order to finance both current and capital expenditures of budget, and later in order to pay out previous principal and interests, the public debt will increase as financial pyramids, and government debt policy will be like speculative financing [8].

G. Mankiw suggests to explore the debt channel by the model, in which there are two types of economic agents - saving and wasteful. Mankiw finds that public debt does not result in the crowding out of capital in the long run. However, debt policy has a strong impact on the economy in the short run.

The theoretical explanation of the debt channel of financial and monetary transmission can be realized mainly within the *IS-LM* model (Fig. 2).

On logic of *IS-LM* model debt financing of government expenditure leads to increased aggregate demand (*IS* curve shifts right up) and, in general, has effects like increase in production and increase in interest rates. However, the conclusions of the model are valid for the economy in the short run (Fig. 2, top graph). Evaluating the impact of debt financing in the long run is possible by a combination of *IS-LM* model and aggregate demand and supply (*AD-AS*) model. In the long term debt financing leads to an increase in interest rates and prices without corresponding increases in production.

Another limitation of *IS-LM* model is the closeness of the economy modeled. The easiest option of the open economy is Mundell-Fleming model, which provides full mobility of capital, and the two extreme cases of adjustment of the exchange rate.

According to Mundell-Fleming model extensions of debt financing leads to the separation of the domestic interest rate from the line of financial integration. The last triggers excess demand for domestic currency. Further changes are related to the coherence of actions

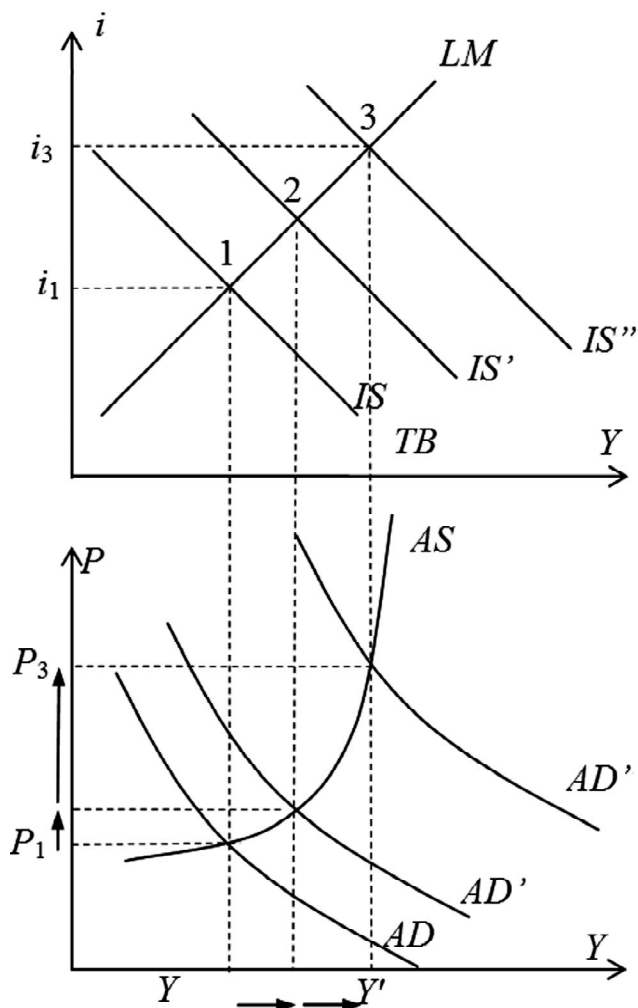


Figure 2. MECHANISM OF DEBT CHANNEL OF FINANCIAL AND MONETARY TRANSMISSION ACCORDING TO *IS-LM - AD-AS* MODEL

of fiscal and monetary authorities.

In the case of low (or even lack of) coherence of fiscal and monetary policies, the excess demand for domestic currency will increase the exchange rate and the decline in exports, which negatively affect the output.

In the case of high-level of coordination of fiscal and monetary policies, the central bank will try to maintain the exchange rate stability by appropriate measures of monetary policy aimed at contraction or expansion of the money supply and thus at influence on the exchange rate. In case of excess demand for domestic currency, the central bank will increase supply of domestic currency proportionally, thus expanding the money supply. Coordinated actions of financial and monetary authorities will result in increased production at the stable interest rates and the exchange rate. However, even a model that takes into account external influences and interactions of financial and monetary regulation instruments do not fully explain the mechanism of debt

channel, since it is not sensitive to the method of financing government spending.

In the the Blinder-Solow model [3] logic of debt financing of government spendings is presented differently from other methods of financing. This allows to isolate a debt channel in financial transmission by formulating such effects as:

- wealth effect in the debt financing of public spendings;
- differential impact of three components of wealth, respectively, three forms of assets: physical capital, money and securities.

Following the logic of Blinder-Solow model, rising interest rates is a result of increased demand for money. If the increase in interest rates is not neutralized, it may lead to crowding out of private spendings and to the relative reduction of the multiplier effect. Most likely non-growing interest rates and, therefore, stable economy are associated with the *monetary* financing of the budget gap. With this method of financing interest rate can return to the previous level. Instead, with the debt financing the return of interest rates is not expected. With the debt financing further dynamic of economic system is more likely to deviate from the equilibrium path of development.

Another important feature of the Blinder-Solow model is the separation of the wealth effect in debt financing. The authors of the model consider government bonds as a form of net wealth, thus owning them has a significant impact on the behavior of economic agents. Inclusion of the wealth effect into the explanation logic of outcomes of financial regulation helps justify specifics of using debt channel of financial transmission.

Wealth effect has two consequences which are important to evaluate the outcomes of the transmission of financial shocks through debt channel of fiscal regulation:

- increase in consumption;
- growing demand for money.

Graphical representation of *IS-LM* model in Fig. 3a illustrates the application of debt transmission channel if the positive outcome of financial shock in debt financing is not crowded out, since a change in consumer spending and the corresponding *IS* shift is greater than the change in the demand for money and, thus, *LM* shift.

Instead, Fig. 3b shows that at the debt financing of the budget gap the preliminary positive outcomes, obtained

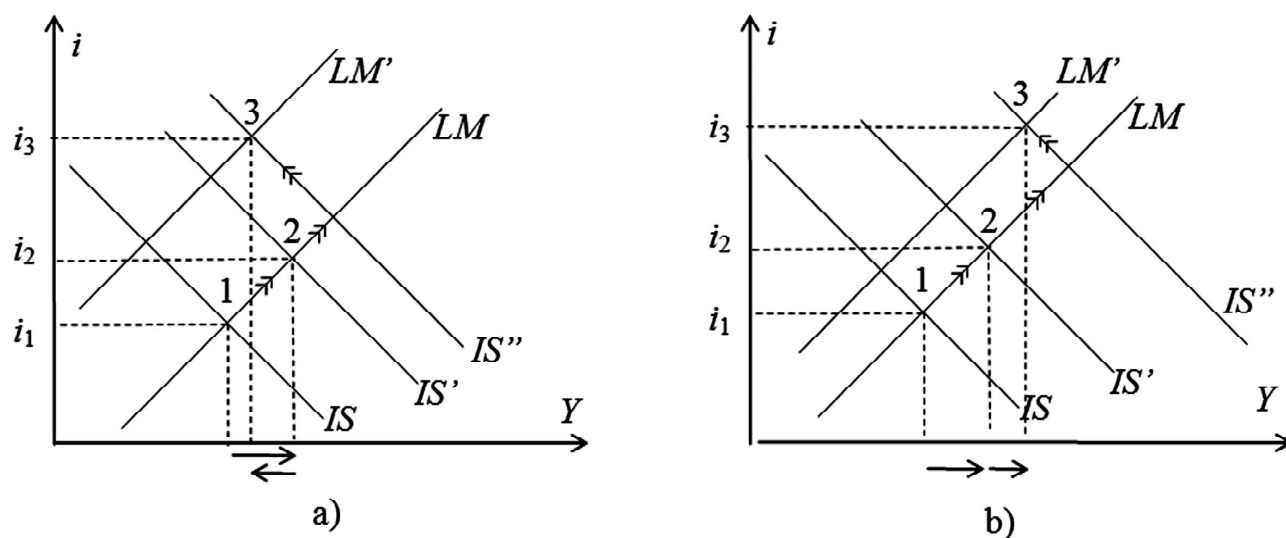


Figure 3.

OUTCOMES OF USING DEBT CHANNEL DEPENDING ON THE AVAILABILITY OF THE CROWDING-OUT EFFECT

in the form of increased production, may be eliminated (crowded out). The cause of crowding out is smaller increase in consumption (compared to the change in demand for money) and, consequently, less right-shift of *IS*. A positive outcome of fiscal shock will be crowding out until the budget deficit persists.

An alternative approach to explaining the transmission mechanism of debt channel is “non-Keynesian” analysis, including criticism of “fiscal illusion” from the standpoint of the Ricardo-Barro equivalence theorem [1].

“Fiscal Illusion” means that debt financing of additional government spending is considered as more preferable than tax financing, since private consumption is not restricted. Moreover, it is assumed that owning government bonds increases the wealth (assets) of households.

So, the Barro-Ricardo equivalence theorem justifies that tax financing and debt financing have no advantages

comparing to each other, in other words, they are equivalent due to the following provisions:

— economic agents adjust to debt financing of government spendings in such a way that it loses its advantages comparing to tax financing,

— shift from tax financing to debt financing *does not increase* wealth (assets) of households.

The modern study of debt channel within the “non-Keynesian” approach is conducted by T. Yun [12; 13]. It allowed to obtain empirical *IS* curve, which includes the forecasted real interest rate and the ‘public debt / GDP’ ratio with an emphasis on how the *IS* curve reacts to changes in public debt. This study confirmed the hypothesis about the negative debt elasticity of aggregate demand and non-Keynesian effects, such as exogenous changes in the real surplus of government budget.

The discussion of the Ricardo-Barro equivalence theorem leads to an interesting conclusion for the theory of fiscal regulation. Opponents of the “non-Keynesian” analysis of fiscal policy emphasize that the theorem proves the identity of debt and tax financing if we consider their outcomes for economic actors. But it does not actually prove inefficiency of fiscal regulation, since additional government spending financed in both - debt and tax – ways may have a positive outcome.

Conclusions

The results of the study can be consolidated in such positions.

First, in modern mixed economies the budget deficit channel and the public debt channel show several relatively independent types of links that are not mediated by the interaction of the primary transmission channel - tax channel and budget spending channel.

Second, empirical research of the public debt channel is challenging. Because of its nature this transmission mechanism is volatile over time and difficult to identify. As a result, the financial uncertainty may increase, especially in times of economic recession, which is relevant for countries with emerging economies.

Thirdly, available “non-Keynesian effects” in fiscal and monetary transmission (associated with the expectations channel) affects the nature of the fiscal and monetary interaction radically. The observed negative elasticity of public debt in the *IS* function destroys the conventional logic of the consequences of following the Taylor principle in case of non-Ricardian fiscal policy, so the single path to achieve economic equilibrium is questionable.

Areas for further researches

Further researches of the potential of government regulation of the economy through the derived channels of fiscal and monetary transmission mechanism should be based on the presence of “non-Keynesian” effects of negative debt elasticity of aggregate demand in identifying empirical relationships in transmission mechanism of the debt channel.

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Рецензия

**на статью к.э.н., доцента, соискателя научной степени доктора наук
АЛИМПИЕВА Е.В. «Финансовое регулирование экономики через
каналы бюджетного дефицита и государственного долга»**

Статья посвящена одному из наиболее актуальных вопросов макроэкономической политики — функционированию передающего (трансмиссионного) механизма в украинской экономике. Автор статьи целиком обоснованно акцентирует внимание именно на финансовых каналах бюджетного дефицита и государственного долга, поскольку их эффективное функционирование требует наибольшего внимания в переходных экономиках с незавершенными рыночными преобразованиями.

Теоретическая ценность рецензированной статьи связана с несколькими моментами. Во-первых, с акцентированием на том, что взаимосвязь каналов может реализовываться разными путями, в частности без инициирования первичных каналов трансмиссии. Во-вторых, важным нам видится использование в теоретическом анализе объясняющих макроэкономических моделей, которым в отечественной литературе не отводится достаточного внимания.

Выводы статьи могли бы быть усилены за счет расширения количественного анализа передаточного механизма каналов бюджетного дефицита и государственного долга.

Содержание статьи и примененный в ней инструментарий дают нам основания к ее рекомендации в научном профессиональном издании по экономике.

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